2
TWEEDDALE
5.32
It will flourish, if naturalists, chemists, antiquaries, philologers, 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 communi-
cations shall be long intermitted; and will die away, if they shall entirely cease.''

Sir Wm. Jones.
A NEW EDITION
OF
KANT'S CRITIQUE
OF
REASON
AND
INFINITY.

TRANSLATED
BY
R. H. BANGS.

LONDON:
J. A. BAILEY,
1875.
"It will flourish, if naturalists, chemists, antiquaries, philologers, 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.

Calcutta:

PRINTED AT THE BAPTIST MISSION PRESS, CIRCULAR ROAD,
SOLD BY THE EDITOR, AT THE SOCIETY'S OFFICE.

1837.
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 acknowledgment. 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 l' impression à ses frais dex deux vocabulaires donnés à Mr. White par le R. de Morrone, ils vont être publiés dans un volume des memoires de son comité d' histoire et de literature, etant trop volumineux pour faire partie de ses Transactions philosophiques."
PAYMENTS.

Rs. As. P.

To balance due 1st January, 1,304 2 11
To printer’s bills for 1836, pd.5,248 15 0
To engravings and lithographs, ... 910 0 0
To expense of circulation, 421 11 9
To postage ditto, ... 48 3 0

7,933 0 5

Bills for 1837 due say, ... 6,000 0 0
Add former balance, ... 2,488 10 6

7,139 7 5

RECEIPTS.

Rs. As. P.

By collections this year, ... 3,455 2 8
By distribution to Members of the As. Society, ... 1,293 0 0
By shop sales, ... 280 13 6
By sales in England, ... 415 6 0
By balance due, ... 2,488 10 6

7,933 0 8

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-
tlemen 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, Kāsi, Ayudhya, Nipāl, Kemaon, the Panjāb Affyhanistān, Tibet; then the Jain provinces, as they may be called, of Mārwār and Mālwā, and finally the cave antiquities of Western India*.

We wish M. Theroule 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, Bhotān, 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 Koue Ky, 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 Burney,—"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?"—hitasukhāya manusānam,—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.*
MEMBERS
OF
THE
ASIATIC SOCIETY OF BENGAL, 1837,
[To whom the Journal is forwarded at the Society’s cost.]

The Right Honorable George Lord Auckland, Governor General, &c. &c. &c.
The Honorable Sir Charles Theophilus Metcalfe, Bt. K. C. B.
The Honorable Sir Edward Ryan, Chief Justice, President, (2 copies.)
The Right Rev. Lord Bishop of Calcutta.
The Honorable Sir H. Fane, Commander-in-Chief.
The Honorable T. B. Macaulay.
The Honorable Col. W. Morrison.
The Honorable Sir J. P. Grant, Vice-President.
H. T. Prinsep, Esq. Vice-President.
W. H. Macnaghten, Esq. Vice-President.

Adam, W. Calcutta.
Anbury, Col. Sir Thos. C. B. Engineers.
Avdall, J. Calcutta.

Ewer, W. Seharanpur.
Ewart, W. Kerr, Calcutta.

Falconer, Dr. H. Cashmir.
Frith, R. J. Calcutta.

Gordon, G. J. Agra.
Grant, W. P. Calcutta.

Hare, D. Calcutta.
Hodgson, B. H. Calcutta.

Jackson, A. R. Calcutta.

Kittoe, M. Calcutta.

Lloyd, Captain R. Calcutta.
Loch, Geo. Sylhet.

Low, Col. J. Lucknow.

Macfarlan, D. Calcutta.
Macleod, Captain, Moulmein.

Macqueen, Rev. J. ditto.
McCleland, Dr. J. ditto.
Mansell, C. G. Agra.
Martin, C. R. Hooghly.
Mill, Rev. Dr. W. H. Europe.
May, J. S. Kishnaghur.
Montrion, Lieut. C. Calcutta.

Melville, Hon’ble W. L. Moorshedabad.
Mackenzie, W. Calcutta.


———, D. F. Seeonee, (on leave.)
Manuk, M. M. Calcutta.

———, J. M. Calcutta.

———, J. M. Calcutta.
Subscribers.

Junior Members.

J. M. Mill. 
J. Seharunpur. Muir. 
Dr. G. McPherson. 
Dr. C. J. Banda. Maedonald. 
J. Serampore. Marshman. 
Madas. Newbold. 
S. Spier. Ouseley. 
W. B. Calcutta. O'Shaughnessy. 
T. J. Juanpore. Pemberton. 
R. B. Assam. Priuspe. 
J. Sec. As. Society. ———, J. Sec. As. Society. 
A. Kyook Phoo. Phayre. 
Calcutta. Radhacant Deb. 
Raja, Calcutta. Ramecomul Sen, Native Sec. ditto. 
Dutt, ditto. Russomoy. 
D. ditto. Ravenshaw. 
F. Rustomjee Cowasjee, Calcutta. 
Calcutta. Spier, Wm. Calcutta. 
Spilsbury, Dr. G. G. Jabbalpore. 
W. Dinapore. Sanders, Capt. 
W. ditto. Storm, W. ditto. 
Ghoshal, ditto. Suttehurn. 
Calcutta. Swiney. 
D. J. Calcutta. Torrens. 
H. head quarters, G. G. Tahawur Jung, Newab. 
Calcutta. Taylor, Major T. M. ditto. 
J. Agra. Thomason. 
C. E. Calcutta. Trevelyan. 
J. Ghazipur. Trotter, J. 
G. Ceylon. Vijaya Govind Sing. 
Raja, Purneab. Wade, Capt. 
C. M. Loodianah. Wilcox. 
R. Lucknow. Wallisch. 
N. Calcutta. White, Capt. 
S. M. ditto. Walters. 
H. ditto. Walker. 
R. ditto. Willis, Joseph. 

SUBSCRIBERS,

[Who are not Members of the Asiatic Society.]

The Honorable the Court of Directors, (by the Secretary to Government, General Department,) Forty copies.

Abbott. 
Lieut. J. care of T. Ostell. 
J. care of T. Ostell. 
Abercombie. 
Agra Book Club, Agra. 
Agra. Anderson. 
Artilery Book Club, Dum Dum. 
Artillery Book Club, Dum Dum. 
Barlow. 
J. H. Contai. 
Lieut. J. H. Amorah. 
J. H. Amorah. 
Batten. 
J. H. Almorah. 
J. H. Almorah. 
Barrow. 
H. Calcutta. 
H. Calcutta. 
Beckett. 
J. O. care of Lyall, Matheson and Co. 
J. O. care of Lyall, Matheson and Co. 
Bedford. 
Capt. J. ditto. 
J. ditto. 
Bengal Club. 
Bengal Club. 
Benares Book Club, Benares. 
Benares. Beresford. 
H. Furneath. 
War. 
R. M. Allahabad. 
R. M. Allahabad. 
Bollee. 
Liet. A. H. E. Engineers. 
Liet. A. H. E. Engineers. 
Book Club, 24th Regt. N. I. care of T. 
Ostell. 
Bonham. 
Capt. G. W. Dinapore. 
G. W. Dinapore. 
H. S. Futteyghur. 
H. S. Futteyghur. 
————, S. M. care of Colvin and Co. 
S. M. care of Colvin and Co. 
Bridgman. 
J. H. Gorukhpore. 
J. H. Gorukhpore. 
Brown. 
Capt. W. Delhi. 
Capt. W. Delhi. 
Brodie. 
Liet. T. Assam. 
Liet. T. Assam. 
Broome. 
Liet. A. Meerut. 
Liet. A. Meerut. 
Butter. 
Dr. D. Sultanpore, Oude. 
Dr. D. Sultanpore, Oude. 
Byrn. 
W. Calcutta. 
W. Calcutta. 
Buckingyoung. 
Liet. Benares. 
Liet. Benares. 
Boston Baptist Mission Society, care of 
J. W. Roberts. 
J. W. Roberts. 
Broadfoot. 
Liet. A. Agra. 
Liet. A. Agra. 
Calcutta. Campbell. 
Dr. A. Nidal. 
Ditto. 
J. Cawnpore. 
Ditto. 
J. Cawnpore. 
Dr. A. Mouilmein. 
F. I. care of T. Ostell. 
F. I. care of T. Ostell. 
Carnagy. 
F. I. care of T. Ostell. 
F. I. care of T. Ostell. 
Curnagh. 
F. I. care of T. Ostell. 
F. I. care of T. Ostell. 
Cunningham. 
Capt. J. D. Engineers 
J. D. Engineers 
Loodianah. 
Loodianah. 
Currie. 
F. Gorukhpore. 
F. Gorukhpore. 
Curators of the Calcutta Public Library. 
Curators of the Calcutta Public Library.
Cartwright, Brigadier E. Agra.
Couoy Loll Tagore, Calcutta.

Davidson, Major, Engrs. Lucknow.
Debade, Capt. H. Calcutta.
Dorin, J. A. ditto.
Douglas, H. Patna.
Drummond, Capt. J. G. Allahabad.
Dunlop, Lieut. Col. W. Ind. Qrs. C. C.
Dribbels, Regt. of T. Ostell.
Duncan, Dr. D. Agra.

———, Lieut. J. Meerut.

Edgeworth, M. P. Ambala.
Editor Calcutta Courier.
Elliot, J. B. Patna.
———, H. M. Allahabad.
Erskine, D. Elambarazar.
Everest, Rev. R. Mussooree.

Fagan, Lieut. G. H. care of Macleod,
Fagan and Co.

Fane, W. Allahabad.
Fergusson, J. Calcutta.
Finck, C. C. Patna.
Finus, Captain J. Dinapore.
Fordyce, Lieut. J. Azemgurh.
Forster, Lieut. Shekawati.
Fraser, H. Care of Gillandors and Co.
———, A. Delhi.
———, C. A. care of Mackintyre and Co.
———, C. Jabhalpore.
———, Lieut. Neemuch.

Garden, Dr. A. Calcutta.

Gordon, R. Care of Rev. W. Robinson,
Calcutta.

Gorton, W. Simlah.
Grant, J. W. Calcutta.
Gray, J. Calcutta.
Greenlaw, C. B. Calcutta.
Gubbins, C. Delhi.
Gooielee, Professor, Calcutta.
Glaford, Lieut. J. Almorah.
Goodhall, H. Moulmein.

Hamilton, H. C. Bhagulpore.
Harris, F. Calcutta.
Hart, T. B. care of Colvin and Co.
Harrington, Lt. J. care of T. Ostell.
Hearsey, Major J. B. Sagur.
Homfray, J. Calcutta.
Hutchison, Major G. Engrs. Casipore.
Hutton, Lieut. T. Simlah.
Hugel, Baron, care of Gillandors and Co.
Heatley, S. G. Calcutta.

Inglis, R. care of G. T. Brain, Calcutta.

Jones, J. T. care of J. W. Roberts,
Calcutta.

Johnson, W. B. Patna.

Kali Kissea, Maharaja, Calcutta.
Kean, Dr. Arch. Moorsedabad.

Kasipersaud Ghose, Calcutta.
Kasinath Bose, ditto.

Knights, Dr. J. W. Bijnoore.

Laidly, J. W. Boerboom.
Lang, J. W. Barrackpore.
Lamb, Dr. Geo. Dacca.
Lambert, W. Allahabad.
Lindsay, Col. A. Agra.
Liston, D. Geruapore.
Lloyd, Major W. A. Titalia.
Lowther, R. Allahabad.

Macedowall, W. Rungpore.
Maegregor, Dr. W. L. Ludianah.
Manson, Captain J. Brittour.
Martin, Dr. J. R. Calcutta.
Masters, W. Calcutta.
Masson, C. Cabul.
Mackay, Rev. W. S. Calcutta.
Mackinnor, Dr. C. care of Coiville & Co.
McCosh, Dr. J. Calcutta.
Milner, Capt. E. T. care of R. C. Jen-
kins and Co.

Military Board Office.
Moore, H. care of T. Ostell.
Montgomery, Dr. W. Penang.
Morley, C. Calcutta.
Mozafferporke Book Club, Tirboot.
Millet, P. Calcutta.

Military Library Society, Mhow.
Mohanloll Munshi, Cashmir.
McPherson, Lieut. S. Gumsoor.
Madden, Lieut. C. Nusseerabad.
Mather, Rev. R. C. Benares.

Nicolson, Capt. M. Jubbulpore.

Officers, 21st Regt. Kurnal.
———, 12th Regt. N. I. Barrackpore.
———, 22nd Regt. N. I. Nusseerabad.

Ogliander, Lieut. Col. Ghuzipore

Ommayen, Lieut. E. L. Hazareebagh.
———, M. C. Baitool.

Parental Academic Institution, Calcutta.
Parker, H. M. Calcutta.
Persid Narain Sing, Benares.
Playfair, Dr. Geo. Mzerut.
Poole, Col. C. Calcutta.

Presgaware, Col. D. Cawnpore.
Prowell, N. H. E. Bignore.
Porteus, C. Calcutta.
———, A. Calcutta.
Povoleries, Col. L. Agra.

Rajkishtna Mukarjya, Hazareebagh.
Ranken, Dr. J. Calcutta.
Rattray, R. H. Calcutta.
Renny, Lieut. T. Engrs. Sitapur.
Ross, Capt. D. Gwaiior.
Row, Dr. J. Barrackpore.
Reid, Dr. A. Boolaneshuir.
Roberts, Col. A. Agra.

Subscribers.

Satchwell, Capt. J. Cawnpore.
Saunders, J. O. B. Allyghur.
Sevestre, Robt. Calcutta.
Shaw, T. A., Willis and Co.
Sloane, W. care of Bruce, Shand & Co.
Smith, Col. T. P. Banda.
Spiers, A. care of Colvin and Co.
———, Col. A. Neemuch.
Stainforth, T. care of T. Ostell.
Stevenson, Dr. W. care of Fraser, McDonald and Co.
———, Dr. W. Lucknow.
Sewell, Capt. Calcutta.
Sadyah Mission, Assam.
Tandy, H. Agra.

Subscribers at Madras, &c.

Baikie, Dr. Neelgherries.
Balfour, Lieut. Madras.
Bannister, Dr. W. ditto.
Brodock, Lieut. J. ditto.
Calldwell, John, Tревнедрум.
Cullen, Col. W. ditto.

Ditmas, Lieut T. Combaconum.
Derville, Major, Madras.

Fleming, H. S. Madras.
Fraser, Col. J. S. ditto.
Gantz, Rev. A. ditto.

Subscribers at Bombay, &c.

Awdry, Sir J. Bombay.
Bombay Asiatic Society, ditto.
Burns, Dr. A. Kaira.
Chambers, R. C. Surat.
Fulljames, Capt. Goga.
Borradaile, H. care of Ritchie, Stewart and Co.
Heddle, Dr. F. Bombay.
Hebbert, Lieut. G. W. Surat.
Law, J. S. Belgaum.
Malvery, J. J. Bombay.
Moorhead, C. Mohabaileshur Hills.

Thomas, E. T. Almora.
Thoresby, Capt. C. Jeypore.
Thornton, J. Azimgur.
Tickell, Col. R. Engrs. Calcutta.
Trotter, R. Kishnaghur.

Turner, T. J. Futeyghur.
Wells, F. O. Agra.
White, Rev. E. care of Turner, Stopford and Co.
Wilkinson, L. Bhopal.
———, Captain T. Hazareebagh.
Wise, J. P. Dacca.
———, Dr. T. A. care of T. Ostell.
Woodburn, Dr. D. Sheerghattee.
Wroughton, Capt. Muttra.

Gilchrist, Dr. W. Vizianagram.
Hyderabad Book Society.
Harper, Rev. H.

Madras Asiatic Society.
Madras Club, Madras.
Mount, Dr. J. Bangalore.

Pharoah, J. O. B. Madras.
Thomson, J. care of Line and Co. ditto.
Taylor, T. I., H. C. Astronomer, ditto.

McLennan, Dr. J. Bombay.
Noton, B. ditto.
Pottinger, Col. Bhoog.
Ruggthonath Hurry Chundjee, Bombay.
Shrescostra Wassodewjee, ditto.

Smyttan, Dr. Geo. ditto.
Shortreele, Lieut. R. Poona.
Stewart, G. A. Bombay.
Sutherland, Hon’ble J. ditto.

Twemlow, Capt. G. Arunagabad.
Wathen, W. H. Bombay.
Wilson, Rev. J. ditto.
Stevenson, Rev. Dr. ditto.
Periodical Publications with which the Journal is interchanged.

The Philosophical Magazine of London and Edinburgh.
Prof. Jameson’s Annals of Philosophy.
The Athenæum.
Journal Asiatique de Paris.
Journal of the Academy of Natural Sciences of Philadelphia.
The Chinese Repository.
Dr. Coles's Quarterly Journal of the Madras Auxiliary Asiatic Society.
The Calcutta Christian Observer.
The Bombay Oriental Christian Spectator.

The Asiatic Society subscribes for 12 copies of the Journal, of which 10 copies are distributed to the following Societies.
The Antiquarian Society.  The Zoological Society, ditto.
The Natural History Society of Mauritius.  The Literary Society of Batavia.

Presentation Copies by the Editor.

Sir J. W. Herschell, Cape of Good Hope.
The Right Hon’ble Sir R. W. Horton, Governor of Ceylon.
C. Masson, Esq. Kabul.
The Sadiya Mission.
C. Brownlow, Esq.
Dr. Harlan, Philadelphia.
Eug. Burnouf, Esq.
The University of Bonn (Proff. Schlegel and Lassen.)
The Baron von Hammer, Purgstall, Vienna.
V. Lair, Esq. Secretary to the Caen Society.
Professor H. H. Wilson, Librarian to the Hon’ble E. I. Company.
The British Museum.  The Academy of Bordeaux.
The Royal Institution.  The Medical and Physical Society, Cal.
The Society of Arts.  The Agri. and Horticultural Society, Calcutta.

Subscribers in England.

[No correct list of the English subscribers can be given, as their names are not specified in the Agent's accounts of distribution.]

Sir Charles Grey.  Miss Prinsep.
G. Swinton, Esq.  Prof. Macaire.
Prof. J. F. Royle.  Dr. Swiney.
# CONTENTS

No. 61.—JANUARY.

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.—</td>
<td>Restoration and Translation of the Inscription on the Bhitārī Lāt, with critical and historical remarks. By the Rev. W. H. Mill, D. D., Principal of Bishop's College, Vice-President, &amp;c. &amp;c.</td>
<td>1</td>
</tr>
<tr>
<td>II.—</td>
<td>Alphabets of the Tai language. By the Rev. N. Brown, Missionary in Assam,</td>
<td>17</td>
</tr>
<tr>
<td>III.—</td>
<td>Remarks on the Silkworms and Silks of Assam. By Mr. Thomas Hugon, Sub-Asst. Nowgong,</td>
<td>21</td>
</tr>
<tr>
<td>IV.—</td>
<td>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, &amp;c.</td>
<td>39</td>
</tr>
<tr>
<td>V.—</td>
<td>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. Service,</td>
<td>47</td>
</tr>
<tr>
<td>VI.—</td>
<td>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,</td>
<td>52</td>
</tr>
<tr>
<td>VII.—</td>
<td>The History of Labong from the Native Records consulted by Dr. D. Richardson, forming an Appendix to his journals published in the preceding volume,</td>
<td>55</td>
</tr>
</tbody>
</table>

VIII.—Suggestions on the Sites of Sangala and the Altars of Alexander, being an extract from Notes of a Journey from Lahore to Karychee, made in 1830. By C. Masson, | 57   |

IX.—Chinese Account of India. Translated from the 'Wan-hēen-t'hung-kaou, or ' Deep Researches into Ancient Monuments '; by Ma-ťwaǔlin; book 338, fol. 14, | 61   |

X.—Proceedings of the Asiatic Society, | 77   |

XI.—Meteorological Register, | 80   |

No. 62.—FEBRUARY.

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.—</td>
<td>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.</td>
<td>81</td>
</tr>
<tr>
<td>II.—</td>
<td>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,</td>
<td>88</td>
</tr>
<tr>
<td>III.—</td>
<td>On the explanation of the Indo-Scythic legends of the Bactrian Coins, through the medium of the Celtic. By Dr. J. Swiney,</td>
<td>98</td>
</tr>
<tr>
<td>IV.—</td>
<td>On three new Genera or sub-Genera of long-legged Thrushes, with descriptions of their species. By B. II. Hodgson, Esq.</td>
<td>101</td>
</tr>
<tr>
<td>V.—</td>
<td>Description of three new species of Woodpecker. By B. H. Hodgson, Esq.</td>
<td>104</td>
</tr>
<tr>
<td>VI.—</td>
<td>Indication of a new Genus of Incessorial Birds. By B. H. Hodgson, Esq.</td>
<td>110</td>
</tr>
<tr>
<td>VII.—</td>
<td>Nest of the Bengal Vulture, (Vultur Bengalensis;) with observations on the power of scent ascribed to the Vulture tribe. By Lieut. J. Hutton,</td>
<td>112</td>
</tr>
</tbody>
</table>
VIII.—Notes taken at the post-mortem examination of a Musk Deer. By A. Campbell, Esq., Nipal Residency, June 24, 1834. 118
IX.—Some account of the Wars between Burmah and China, together with the journals and routes of three different Embassies sent to Pekin by the king of Ava; taken from Burmese documents. By Lieutenant-Colonel H. Burney, Resident in Ava. 121
X.—Notice on Balautium, 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. 150
XI.—Additional fragments of the Sivatherium. 152
XII.—Note on the Hotspring of Lohand Khad. By Capt. C. M. Wade, 153
XIII.—Proceedings of the Asiatic Society, 154
XIV.—Meteorological Register, 160

No. 63.—MARCH.
II.—Journal of Captain C. M. Wade’s voyage from Loddiana to Mithankot by the river Satlaj, on his Mission to Lahore and Bahawalpur in 1832-33. By Lieut. F. Mackeson, 14th Regt. N. I. 169
III.—Facsimiles of Ancient Inscriptions. 218
IV.—Note on a Specimen of the Bos Gaurus. By Dr. George Evans, Curator of the Medical College. 223
VI.—On a new Genus of the Sylviadæ, with description of three new Species. By B. H. Hodgson, Esq. Resident in Nipal, 230
IX.—Proceedings of the Asiatic Society, 238
X.—Meteorological Register, 245

No. 64.—APRIL.
II.—Facsimiles of Ancient Inscriptions. By Jas. Prinsep, Sec. &c. 273
III.—Specimens of Hindu Coins descended from the Parthian type, and of the Ancient Coins of Ceylon. By James Prinsep, Sec. As. Soc. 288
IV.—On the Revolution of the Seasons, (continued from Vol. IV. p. 257.) By the Rev. R. Everest, 303
V.—On the Climate of Darjiling, 308
VI.—Note on the Genera Oxygurus and Bellerophon. By W. H. Benson, Esq. B. C. S. 316
VII.—Proceedings of the Asiatic Society, 317
VIII.—Meteorological Register,
Contents.

No. 65.—MAY.

I.—Journal of a visit to the Mishmee hills in Assam. By Wm Griffith, M. D.
Madras Medical Establishment, ... ... ... 325

II.—Corrected Estimate of the risk of life to Civil Servants of the Bengal Pre-
sidency. By H. T. Prinsep, Esq. Sec. to Govt. &c. ... 341

III.—A Grammar of the Sindhi language, dedicated to the Right Honorable
Sir Robert Grant, Governor of Bombay. By W. H. Wathen, Esq. ... 347

IV.—On additional fossil species of the order Quadrumana from the Sewalik
Hills. By H. Falconer, M. D. and Captain P. T. Cautley, ... 354

V.—On some new Genera of Raptorex, with remarks on the old genera. By
B. H. Hodgson, Esq. ... ... ... ... ... ... ... 361

VI.—Observations of the Magnetic Dip and Intensity at Madras. By T. G.
Taylor, Esq. H. C. Astronomer, ... ... ... ... ... 374

VII.—The Legends of the Saurnashtra group of Coins deciphered. By James
Prinsep, Sec. As. Soc. ... ... ... ... ... ... ... ... ... ... ... 377

VII.—On the Properties ascribed in Native medical works to the Acacia Ar-
bica. By Lewis Da Costa, Esq. ... ... ... ... ... ... ... ... ... 392

IX.—Proceedings of the Asiatic Society, ... ... ... ... ... ... ... 397

X.—Meteorological Register, ... ... ... ... ... ... ... ... ... ... ... 404

No. 66.—JUNE.

I.—Some account of the Wars between Burmah and China, together with the
journals and routes of three different Embassies sent to Pekin by the king
of Ava: taken from Burmese documents. By Lieutenant-Colonel H. Bur-
ney, Resident in Ava, ... ... ... ... ... ... ... ... ... ... ... 405

II.—Note on the Facsimiles of Inscriptions from Sanchi near Bhilasa, 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. ... ... ... ... ... ... ... 451

III.—Notice of a Colossal Alto-Relicvo, known by the name of Mata Koon,
situated near Rusa Tannah, in Pergunnah Sidowa, Eastern Division of
Gorakhpur District. By D. Liston, Esq. ... ... ... ... ... ... ... ... ... 477

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, ... ... ... ... ... ... ... ... ... ... ... 480

V.—Notice of new Sites of Fossil deposits in the Nerbudda Valley. By Dr. G.
G. Spilsbury. Pl. XXX. ... ... ... ... ... ... ... ... ... ... ... 487

VI.—New species of Scolopacidae, Indian Snipes, ... ... ... ... ... ... ... 489

VII.—Proceedings of the Asiatic Society, ... ... ... ... ... ... ... ... ... 490

VIII.—Meteorological Register, ... ... ... ... ... ... ... ... ... ... ... 500

No. 67.—JULY.

I.—An Examination of the Pali Buddhistical Annals. By the Hon’ble George
Turnour, Esq. of the Ceylon Civil Service, ... ... ... ... ... ... 501

II.—On the “Indian Boa,” “Python Tigris.” By Lieut. T. Hutton, ... ... 528

III.—Notice of a skull (fragment) of a gigantic fossil Batrachian. By Dr. T.
Cantor, ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... 533

IV.—Some account of the Wars between Burmah and China, together with the
journals and routes of three different Embassies sent to Pekin by the King
of Ava: taken from Burmese documents. By Lieutenant-Colonel H.
Burney, Resident in Ava, ... ... ... ... ... ... ... ... ... ... ... 542

V.—On a new genus of the Plantigrades. By B. H. Hodgson, Esq. ... ... 560
## Contents.

IV. Interpretation of the most ancient of the inscriptions on the pillar called the lāt of Feroz Shāh, near Delhi, and of the Allahabad, Radhia and Mat-tiah pillar, or lāt, inscriptions which agree therewith. By James Prinsep, Sec. As. Soc. &c. .......................... 566

VII.—Abstract of a Meteorological Register kept at the Kathmandu Residency for 1837. By A. Campbell, Esq. M. D. Nipal Residency, .......... 610

VIII.—Proceedings of the Asiatic Society, .................. 612

IX.—Miscellaneous:
1.—Proportion of rain for different lunar periods at Kandy, Island of Ceylon, .................. 618
2.—Memorandum of the fall of the Barometer at Macao during the severe Hurricane, on the 5th and 6th August, 1835, ........ 619
3.—Award of medals by the Geological Society of London, .......... 620

X.—Meteorological Register, .......................... 620

No. 68.—AUGUST.


II.—Account of the Ruins and Site of old Mandavi in Raepur, and legend of Vikramaditya's Son in Cutch. By Lieut. W. Postans, Bombay Engineers, 648

III.—Catalogue of Geological Specimens from Kamaon presented to the Asiatic Society. By Dr. J. McClelland, .......................... 653

IV.—Facsimiles of Ancient Inscriptions, lithographed by James Prinsep, Sec. As. Soc. &c. .......................... 663

V.—Note on the Primary language of the Buddhist writings. By B. H. Hodgson, Esq. Resident in Nipal, .......................... 682

VI.—Geometric Tortoises, "Testudo Geometrica." By Lieut. T. Hutton, 37th Native Infantry, .......................... 689

VII.—Barometrical elevations taken on a journey from Katmandhu to Gosainkshāns, a place of pilgrimage in the mountains of Nipal, by Chhedī Lohar, a smith in the employ of Captain Robinson, late commanding the Escort of the Resident in Nipal, .......................... 696

VIII.—Meteorological Register kept at Darjiling for the months of April, May, June, and July, 1837. By Dr. H. Chapman, .......................... 700

IX.—Proceedings of the Asiatic Society, .......................... 704

X.—Tribute of the Pandits to the Rev. Dr. Mill, .......................... 710

XI.—Meteorological Register, .......................... 712

No. 69.—SEPTEMBER.

I.—An examination of the Pāli Buddhistical Annals, No. 2. By the Hon'ble George Turnour, Esq. Ceylon Civil Service, .......................... 713

II.—Note on the Geography of Cochin China, by the Right Rev. Jean Louis, Bishop of Isauropolis, Vicar Apostolic of Cochin China, Hon. Mem. As. Soc. .......................... 737


IV.—Extracts translated from the Granthis or sacred books of the Dadupanthi Sect. By Lieutenant G. R. Siddons, 1st Light Cavalry, Second in command, 3rd Local Horse, Neemuch, .......................... 750

V.—History of the Rājas of Orissa, from the reign of Rāja Yudhistira, translated from the Vausāvall. By the late Andrew Stirling, Esq. C. S. .......................... 756
## Contents.

### VI.—Some account of the valley of Kashmir, Ghazni, and Kabul; in a letter from G. J. Vigae, Esq. dated Bunderpore, on the Wuler lake, Kashmir, June 16, 1837, ... 766

### VII.—Account of an Inscription found by Mr. H. S. Boulderson, in the Neighbourhood of Barcilly. By James Prinsep, Sec. &c. ... 777

### VIII.—Section of the strata passed through in an experimental boring at the town of Gogah, on the Gujerat peninsula, Gulp of Cambay. By Lieutenant George Fulljames, ... 786

### IX.—Note on the black and brown Floriken of Guzerat. By Lieutenant George Fulljames, ... 789

### X.—Further elucidation of the lát or Silasthambha inscriptions from various sources. By James Prinsep, Sec. As. Soc. ... 790

### XI.—Proceedings of the Asiatic Society, ... 797

### XII.—Meteorological Register, ... 804

---

### No. 70.—OCTOBER.

**I.**—Extracts from the Mohit, (the Ocean,) a Turkish work on Navigation in the Indian Seas. Translated and communicated by Joseph Von Hammer, Baron Purgstall, Aulic Counsellor, and Prof. Orient. Lang. at Vienna, Hon. Membr. As. Soc. &c. &c. ... 805

**II.**—Observations upon the past and present condition of Oujein or Uijayani. By Lieutenant Edward Conolly, 6th Light Cavalry, .... 813

**III.**—Account of the Tooth relic of Ceylon, supposed to be alluded to in the opening passage of the Feroz lát inscription. By the Hon'ble George Turnour, Esq. Ceylon Civil Service, ... 856

**IV.**—Facsimiles of ancient inscriptions, lithographed by James Prinsep, Sec. As. Soc. &c. &c. ... 869

**V.**—Meteorological Register kept at Darjiling for August, 1837. By Dr. H. Chapman, ... 883

**VI.**—Abstract of Meteorological Register kept at the Kathmandu Residency for July and August, 1837. By A. Campbell, Esq. Nipal Residency, ... 889

**VII.**—Proceedings of the Asiatic Society, ... 890

**VIII.**—Meteorological Register, .... 900

---

### No. 71.—NOVEMBER.

**I.**—Journal of a Trip to the Burenda Pass in 1836. By Lieut. Thomas Hutton, 37th Regiment, Native Infantry, ... 901

**II.**—Discovery of the Rekhá Ganita, a translation of the Elements of Euclid into Sanskrit by Samrát Jagannátha, under the orders of Rája Siwáí Jaya Sinha of Jaipur. By Lancelot Wilkinson, Esq. C. S. Resident at Bhopál, 933

**III.**—Observations of the Tides at Chittagong made in conformity with the Circular of the Asiatic Society. By Lieut. H. Siddons, Engineers, ... 949

**IV.**—Translation of a Servitude-Bond granted by a Cultivator over his Family, and of a Deed of Sale of two slaves. By D. Liston, Esq. Gorakhpur, ... 950

**V.**—Note on the Malay Woodpecker. By Dr. William Bland, Surgeon of H. M. S. Wolf, ... 952

**VI.**—Notes on the Musical Instruments and Agricultural and other Instruments of the Nipalese. By A. Campbell, Esq. M. D. Surgeon attached to the Residency at Katmandhu, ... 653

**VII.**—Note on the Facsimiles of the various Inscriptions on the ancient column at Allahabad, retaken by Captain Edward Smith, Engineers. By James Prinsep, Sec. As. Soc. &c. &c. ... 963
VIII.—Interpretation of the Ahom extract published as Plate IV. of the January number of the present volume. By Major F. Jenkins, Commissioner in Assam, 980
IX.—Proceedings of the Asiatic Society, 984
X.—Meteorological Register, 988

No. 72.—DECEMBER.
I.—Abstract Journal of an Expedition to Kiang Hung on the Chinese Frontier starting from Moulmein on the 13th December, 1836. By Lieut. T. E. MacLeod, Assistant to the Commissioner of the Tenasserim Provinces, with a route map, 989
II.—Abstract Journal of an expedition from Moulmein to Ava through the Kareen country, between December 1836 and June 1837. By D. Richardson, Esq. Surgeon to the Commissioner of the Tenasserim Provinces, 1005
III.—Comparison of Indo-Chinese Languages by the Rev. N. Brown, American Missionary stationed at Sadiya at the north-eastern extremity of Assam, 1023
IV.—Specimens of Buddhist Inscriptions, with symbols, from the west of India. By Colonel W. H. Sykes, Hon. Mem., As. Soc. 1038
V.—Further notes on the inscriptions on the columns at Delhi, Allahabad, Betiah, &c. By the Hon’ble George Turnour, Esq. of the Ceylon Civil Service, 1049
VI.—Account and drawing of two Burmese Bells now placed in a Hindu temple in Upper India. By Capt. R. Wroughton, Revenue Surveyor, Agra division, 1054
VII.—Note on Inscription at Udayagiri and Khandgiri in Cuttack, in the lāṭ character. By Jas. Prinsep, Sec. As. Soc. &c. 1072
VIII.—Memorandum regarding specimens from Seoni Chupara. Pl. LVI. By D. W. McLeod, Esq. 1091
IX.—Proceedings of the Asiatic Society, 1092
X.—Meteorological Register, 1100
ERRATA.

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

89, 26, 'for the first specimens,' read 'the finest.'
93, 29, read 'No. 17 Lymnaea... (mihi)—linosa?'
523, 'for knee,' read 'neck.'

733, 7, from bottom, read 'granular matter, the foilata, and bursts if the immersion is somewhat protracted.'
812, 21, dele the proposed name Cyananthus, which is already appropriated in Dr. WALKER'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.'
389, 4, from below, for 'general,' read 'generic.'
386, 22, after written insert 'semicolon.'
387, 4, from below, for 'Chandaguttassa,' read 'Chandaguttassa.'

392, 4, for 'unexpected,' read 'unsuspected.'
391, 12, for 'Devanāgarī,' read 'Devanāgarī.'

400, 35, for 读 '读,' read 读 '读.'
467, 19, for 'Parthia,' read 'Bactria.'
408, 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, 15, ditto dele 'm' after 'a.'
585, 9, ditto for 'jœ,' read 'jœ.'
590, 20, ditto for 'participular,' read 'particular.'
594, 25, ditto for 'adopting,' read 'adapting.'
595, 12, ditto for 'našhatras,' read 'našhatric.'
603, 11, ditto for 'dhara,' read 'adhara.'
604, 4, ditto for 'neat,' read 'next.'
608, 6, ditto for 'you,' read 'thou.'
619, ditto for 'Kalagur,' read 'Kahgyur.'

676, 7, for 'this powerful,' read 'his powerful.'
678, 3, from below, for 'anantaliyam,' read 'anantaliyam.'
676, 29, for '24° 13½,' read '24 miles : 13½.'
779, 2, and 5, for 'is,' read 'are.'
791, 8, for 'Chadaguttassa,' read 'Chandaguttassa.'
794, 17, for 'leanes,' read 'leaves.'
794, 7, after quarter, insert full point.
800, 3, from bottom, for 'very,' read 'verb.'
795, 30, for 'papry,' read 'paper.'
816, 14, for 'be,' read 'be.'

866, 1, for 'नवी त्रिम टिम टिम टिम,' read 'नवी त्रिम टिम टिम टिम' and in the translation, line 14, for 'wad,' read 'wald,' (or 'wall'), and for 'Monday,' read 'Tuesday.'

924, 1, for 'वधारि,' read 'वधारि.'
19, for 'वधारि,' read 'वधारि.'
19, for 'वधारि,' read 'वधारि.'
976, 3, for 'सह,' read 'सह.'
4, for 'सह,' read 'सह.'
6, for 'सह,' read 'सह.'
13, for 'सह,' read 'सह.'
18, for 'सह,' read 'सह.'

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 भिन्न in line 7 is required to complete the explanation of the figure:

The rest are additions to the preface which it is less necessary to correct.]

नकलिकृतियते: रेखागणितम् संस्कृत्तप्रावृत्तन्त भविष्यति चाचाच सनात

The rest are additions to the preface which it is less necessary to correct.
### LIST OF PLATES.

<table>
<thead>
<tr>
<th>Plate</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>(XXXII. of vol. V.) Bhitári Lát inscription, to face page</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>Alphabets of the Tai language</td>
<td>19</td>
</tr>
<tr>
<td>III</td>
<td>Specimen of the Khamti writing</td>
<td>20</td>
</tr>
<tr>
<td>IV</td>
<td>Specimen of the Ahom language</td>
<td>ibid.</td>
</tr>
<tr>
<td>V</td>
<td>The Ería silkworm of Assam, Phalæna cynthea</td>
<td>23</td>
</tr>
<tr>
<td>VI</td>
<td>The Moonga silkworm of ditto, Saturnia Assamensii</td>
<td>39</td>
</tr>
<tr>
<td>VII</td>
<td>Facsimiles of an inscription in the Asiatic Society's Museum, translated by Captain Marshall</td>
<td>89</td>
</tr>
<tr>
<td>VIII</td>
<td>Occiput of the Sivatherium</td>
<td>152</td>
</tr>
<tr>
<td>IX</td>
<td>Lower jaw of the same fossil animal</td>
<td>152</td>
</tr>
<tr>
<td>X</td>
<td>Inscription of Dipaldinna at Amaravati</td>
<td>218</td>
</tr>
<tr>
<td>XI</td>
<td>Another inscription from the same place</td>
<td>222</td>
</tr>
<tr>
<td>XII</td>
<td>Fossil shells of the Chāri range in Cutch</td>
<td>159</td>
</tr>
<tr>
<td>XIII</td>
<td>Alphabet of the Amaravati character</td>
<td>222</td>
</tr>
<tr>
<td>XIV</td>
<td>XV. Indo-Sassanian Coins</td>
<td>288</td>
</tr>
<tr>
<td>XVIII</td>
<td>Head of the Bos Gaurus (?) or Gayal</td>
<td>224</td>
</tr>
<tr>
<td>XVIII</td>
<td>Facsimile of Museum Inscription, No. 6</td>
<td>280</td>
</tr>
<tr>
<td>XIX</td>
<td>Fossil bone brought up in the boring in Fort William; head of the Bos Gaurus (museum); and fossil quadrumanous tooth</td>
<td>236</td>
</tr>
<tr>
<td>XX</td>
<td>Map of Captain Hannay's route</td>
<td>245</td>
</tr>
<tr>
<td>XX</td>
<td>Ceylon Coins</td>
<td>298</td>
</tr>
<tr>
<td>XXI</td>
<td>Diagram of moon's declination; coluber mycterizans, and fossil bone from Fort boring</td>
<td>304</td>
</tr>
<tr>
<td>XXII</td>
<td>Sindhi and Multani alphabets</td>
<td>332</td>
</tr>
<tr>
<td>XXIII</td>
<td>Fossil Quadrumanas of the Sewálikns</td>
<td>360</td>
</tr>
<tr>
<td>XXIV</td>
<td>Legends on Saurashtra coins</td>
<td>382</td>
</tr>
<tr>
<td>XXV</td>
<td>Principal Inscription at Sanchi</td>
<td>454</td>
</tr>
<tr>
<td>XXVI</td>
<td>Second Inscription from the same place</td>
<td>458</td>
</tr>
<tr>
<td>XXVII</td>
<td>Various smaller ditto in the Lát character</td>
<td>460</td>
</tr>
<tr>
<td>XXVIII</td>
<td>View of the Sanchí Monument</td>
<td>452</td>
</tr>
<tr>
<td>XXIX</td>
<td>Details of the Architecture of ditto</td>
<td>452</td>
</tr>
<tr>
<td>XXX</td>
<td>Fossil fore-leg of an elephant from Jabalpur</td>
<td>488</td>
</tr>
<tr>
<td>XXXI</td>
<td>Head of a fossil Batrachian</td>
<td>540</td>
</tr>
<tr>
<td>XXXII</td>
<td>Inscription in Hala Kanada, and Kaliner inscription</td>
<td>665</td>
</tr>
<tr>
<td>XXXIII</td>
<td>Gumsar copper-plate Grant</td>
<td>666</td>
</tr>
<tr>
<td>XXXIV</td>
<td>Inscriptions from the Caves near Gaya</td>
<td>672</td>
</tr>
<tr>
<td>XXXV</td>
<td>Inscriptions from the Caves near Gaya</td>
<td>676</td>
</tr>
<tr>
<td>XXXVI</td>
<td></td>
<td>676</td>
</tr>
</tbody>
</table>
List of Plates.

<table>
<thead>
<tr>
<th>Plate</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXXVII</td>
<td>Inscription on a fragment of rock at Singapur</td>
<td>680</td>
</tr>
<tr>
<td>XXXVIII</td>
<td>The Testudo geometrica</td>
<td>696</td>
</tr>
<tr>
<td>XXXIX</td>
<td>Osteology of the Bibos, or Gauri Gau</td>
<td>748</td>
</tr>
<tr>
<td>XL</td>
<td>Restoration of the Allahabad pillar</td>
<td>798</td>
</tr>
<tr>
<td>XLI</td>
<td>Bareilly inscription</td>
<td>778</td>
</tr>
<tr>
<td>XLI.</td>
<td>Delhi lát inscription</td>
<td>796</td>
</tr>
<tr>
<td>XLI.</td>
<td>Town of Oujein, and water-palace</td>
<td>813</td>
</tr>
<tr>
<td>XLIV</td>
<td>Facsimile of Multai copper-plate Grant</td>
<td>868</td>
</tr>
<tr>
<td>XLV</td>
<td>Ditto of Epitaph on an Arabic tombstone</td>
<td>873</td>
</tr>
<tr>
<td>XLVI</td>
<td>Ditto of an Inscription from Cabul</td>
<td>876</td>
</tr>
<tr>
<td>XLVII</td>
<td>Sketch of the Khaiber Tope</td>
<td>876</td>
</tr>
<tr>
<td>XLVIII</td>
<td>Inscription in As. Soc. Museum, from Calinjer</td>
<td>881</td>
</tr>
<tr>
<td>XLIX</td>
<td>Map of Capt. McLeod's route to Zimmay</td>
<td>989</td>
</tr>
<tr>
<td>L</td>
<td>Diagigraphy of the Rekha Ganita</td>
<td>948</td>
</tr>
<tr>
<td>L &amp; LI</td>
<td>Burmese Bells</td>
<td>1068</td>
</tr>
<tr>
<td>LII</td>
<td>Map to illustrate geology of Seoni, Jabalpur</td>
<td>1092</td>
</tr>
<tr>
<td>LIII</td>
<td>Inscriptions from the Sainhadri caves</td>
<td>1044</td>
</tr>
<tr>
<td>LIV</td>
<td>Udayagiri Inscriptions</td>
<td>1080</td>
</tr>
<tr>
<td>LV</td>
<td>Inscription No. 2 of the Allahabad pillar</td>
<td>978</td>
</tr>
<tr>
<td>LVI</td>
<td>Various fragments of ditto</td>
<td>968</td>
</tr>
<tr>
<td>LVII</td>
<td>Inscription on the Khandgiri rocks</td>
<td>1090</td>
</tr>
</tbody>
</table>
Inscription on the BHITARI LATH in the Ghazipur district.

Printed at the oriental Lith. Press, Calcutta

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 lacunae 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 म for च in the word चात्रस्य (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 द्विवी प्रिथिवि for its synonyme द्विवी प्रिथिवि (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

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

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

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

4. We have in line 12, the syllables मूतितितितितितितितितति
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 group 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.

<table>
<thead>
<tr>
<th>Line of the Lat.</th>
<th>Line of the Eng.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>प्रेक्षितः</em>प्रतिरथश् पृथियमप्रतिरथश् चतुर्दशिकाः</td>
<td><em>I have been content to group 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.</em></td>
</tr>
<tr>
<td>2. [क] सन्तित्यासिद्धिः चंद्रवस्येन्द्रातक [सेवा] * छत्रमथमश्राधः चुँगुरश्च</td>
<td></td>
</tr>
<tr>
<td>3. महाराजाभिज्ञानमुष्मकस</td>
<td>महाराजाधिराजाविज्ञानमुष्मकस [लिखि] विद्वाहिचस</td>
</tr>
<tr>
<td>4. महादेवां कुमार[देशा] * सुमयेश्वर महाराजाधिराजाविज्ञानम</td>
<td>समुद्रगुप्ताः पुच्छल्लोधिवकियो महादेवालिहादेशाय[लिखि]</td>
</tr>
<tr>
<td>5. यद्यपतिरथ * परमभावमवतो महाराजाधिराजाविज्ञानम</td>
<td>समुद्रगुप्ताः पुच्छल्लोधिवकियो महादेवादेशाय[लिखि]</td>
</tr>
<tr>
<td>6. [भागवतम] महाराजाधिराजाविज्ञानमकुमारगुप्ताः * यद्यपतिरथ</td>
<td>परमभावमवतो महाराजाधिराजाविज्ञानम</td>
</tr>
<tr>
<td>7. महानरथमतः: पूजगयशः पृथियमप्रतिरथश् प्रथितमधुर</td>
<td>गत</td>
</tr>
</tbody>
</table>
[रिप]प्रजितयशा: पृथ्विविभित्वे: सुतियर्गः
[दिद]प्रति न कमःक्रेति गुप्तदक्षिणविरः।

8. प्रथितविनमः कीर्तिना में: खन्दःगामः
सद्यक्षरितात्मा िा 8 भिन्नेरेन: न जाति:।
न विचित्रनदािात्मा तान्त्रिकीर्तिनीः

9. रविवर्म: असिाति विवेषाय श्रवेणा।
प्रतिदिश्यमभिक्ष्या दीर्घेिे चेन जच्यः
िाभिमत्विजितात्मा घृायिति सा 2 ियेिेः।

10. प्रियिका: तव सुनाति: संविधानप्रज्ञेया
विपिनतकु तकवायः असिात्तेिेः।

11. विचित्रतलाग्नीया (ते) न नीताय सीमा
दुर्ग: चित्मकाः वाचनिमित्त गदिता।
विचित्रमचरणापि ता खापिता सावङ्गाः:
प्रासरसुमणिाता नास्तिसास्त्रः यिएिेः।

12. चितमनुष्म िसा देवीिेः भविनिर्वयः
चारितममजीिेिीः थियिये वस्य शु[द]।
दिनी दिशी पार्रत्तूः कुमारः मनोया:

13. पितारी दिवमुंगे(ते) विप्रया[ण]ाशश्रीः।
भुजविविजितारेि यिष्ठ वायादयः [प्राग्
रिपु]जितप्रित्यािन्द्रािशं साखेन्चा।।

14. * इश्न्विदमिाः] श्रव्यायाराचिचिाः।
विपिनिरहुःदेशस्मविनः विजेतुरिजितेिियेिियें वैलादीयिे
स्थृिेिेिा: विसििः प्रतिदिन स्थानीये

15. सुमांस्त्रितपराकामितुमेष्ठाक्षरेष्यः
श्रुपरानन्यका दुःसाधिषा: राजारुतपरारिखिदिखिपीविषयः।

16. विश्रोति प्राजिबधनः िििसिः िसििसिः साहसिः।

17. * सद्ाचित्तानुष्ठदे राजासाधनिन्तुः श्रृप्रातिगुमः।
संतति गृहेति शरिरसिमिाः यथाच भूसिः।।

18. रेिेशाऽशािचयिे स म त: प्राणमयौधोः 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 Liçhāvi,—born of the great goddess-like Cuma'ra-de'vi,—the great king, the sovereign of kings, Sāmudra-gupta,—

Of him, when the accepted son was pronounced to be the son of De'vi, 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 unsotted 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 Crïshna still obeying his mother De'vâki, 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 (Sîva) 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 Sanhârica. 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 Sanhârica's daughter, but of the daughter of a prince named Mahâdaiiyta. The son and successor of Chandra-gupta II. is Cuma'ra-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 emitter 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 Cuma'ra-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. 614 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 Devaki; 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 Maharaja Adhiraja belongs, in the order of their succession.

Gupta, a Raja of the Solar line.

Ghatotkacha, ditto ditto, | Licchavi, whose daughter was
1. Chandra-gupta I. - Cuma'ra-devi', whose daughter was
2. Samudra-gupta, De'vi', one of the queens of Samudra-gupta.
3. Chandra-gupta II.
4. Cuma'ra-gupta, whose son probably was
5. Scanda-gupta,
6. A young prince (Mahendra-gupta?) a minor at the date of this inscription.
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 Purānas by the comparatively recent grammarian Vopede) called the Srimad Bhāgavata: 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 Bhitarī 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 Cali,—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 prophetico-historical part of the Vishnu-Purāna, (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 Sāce and other foreign tribes from the north-west. The dominion of the Guptas is there said to include the great city of Prayaga on the confluence of the Ganges and Jumna, where their principal monument is now found, as well as the yet more sacred city of Mathurā on the latter river, and the less known names of Padmavati and Kanti-puri, (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 Brāhmans, in their stead; as I read in two MSS. copies* of the Vishnu-Purāna, the words of which are

"In the country of Magadha, one named Visva-sphatika shall form and set up in the kingdom other castes, the Kaivarttas, Yadus, Pulindas, and Brāhmans: and thus having abolished all the races of Xattriyas, shall the nine Nagas, and in Padmāvatī, Kānti-purī, Mathurā, and on the Ganges from Prayāga, shall the Magadhās 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 Purāna 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 Kalki to restore all things. Thus, soon after the account of their Guptas, close the prophetic announcements of Parāśara to Maitreya of what was to befall the world after him, and with them the 4th Book of the Vishnu-Purāna.

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

* The valuable English abstract and partial translation of this Purāna (as of the others) deposited in the Asiatic Society's Library by Professor H. H. Wil-son,—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 Doāb, Padmāvatī, Kānti-purī, Mathurā, and Prayāga, 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 Srimad-Bhāgavata, 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 Purâna 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 Abhbra caste, 10 Gardabhiras, 16 Saka or Scythian kings, 8 Yavana or Grecian, 14 Tushâra, 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-Purâna.

* These may all be seen, as they stand in this and other Purânas, 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, Yub-gar, Beloved of the Moon, whose ambassador sent presents to China A. D. 428, 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.
Historical Remarks

Vindhya-sakti from Kilakila, who adopts the manners of the Yavanas, whose son is

Puranjaya,

Ra'ma-chandra,

Dharma.

Vangara, (Wils. Var'anga.)

Kritanandana, (who has 4 sons.)

Sukhinandi, Nandiyasas, Sisuh, Pravira.

who has 13 sons.

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 Bahllic 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 Pecrit (the latter spoken by the Buddhist, being his own Pali,—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 प्रविष्टिः सेवसिद्धान्तः कापालिकोऽध्यायः खः च

[परिष्क्रमः] नराशिथिष्ठाभ्याज्ञातचार्थभूमिः

प्रसामि योगं चार्यं ददशेने
जगमिथ्याभिकल्पब्रम्हमीम्बरातः

चण्डकः। यस्य चापालिकोऽध्याय पुलिसाः धारिदै वायुं पुष्चिस्याः

[उपस्थतः] चाले कापालिको गलखुलुमंगलासिद्धिः कोदिसे तुयः

सेवसिद्धान्तः।

कापालिकः। अरे चण्डकः घर्मेन लावदकामक्रमवधार्यः

मन्त्रिसाहित्यसामिविलासितमहुमां सांक्वेपाटः

वायः चतुर्दशकायत्तत्सुपारणेन नः पाल्यः

सदैः कालकथारणाशुद्धिनिस्तातिगलाशालायितः

रथौ ना युक्तोपचारविषयिनेन सचान्न्मैरवः

भिचः। [कण्डः विधायः] बुद्ध बुद्ध बुद्ध दाश्यः प्राच्छन्यः

चण्ड। चिलिखण्ड चिलिखण्ड चिलिखण्ड चारपाविश्लोकः कोनाविविप्रस्भा

यसेऽ वलायः।

कापः। [स्फोटः] चः पाप पापाशापसद सुभिःसुधं चार्यांत्रमेवः केषोः

आप प्रविश्वमं चार प्रविश्वमं चः विप्रमुकः स विकार सुचवि प्रभुश्रुतित्ततिसंग्रामय

प्रवर्त्यितः वेदांसिद्धान्तप्रसिद्धिभवेः भगवानं भवानीयति।

द्विगुणस्तूलीः कथामयायातः

चिलिखण्ड कथायातः सुराक्षामयाः

विषयम् चर्चे नद्वर्याः स्वान्तः मलायाः

सन्नगारीमस्मः पूर्णां विषयाय माम्प्रिन्मां

कलम् संकलनं भूत्वैः च श्रेष्ठ विप्रभवः ततः॥
Historical Remarks

To them, enter Soma-Siddhanta in the guise of a Kapalika (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 Kapalika. 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 Brâhman'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.

Brâhman 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 Bâvânî 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 Kāpālika, this is just what I said. You have been de-
ceived by some juggler, spreading out false images before you.

Soma-Siddhanta. What, again, thou sinner! Dost thou dare to call the great
Mahēśvara 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 Saṇḍhī (or Faith !) in the character of a Kopaṭīni,
who by her blandishments leads both the Brāhmaṇ 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 commen-
tary on the Mahā-wanso, pp. lxxi.—lxxii. of his very interesting pre-
face 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-kathā or Astata-
kathā of the Uttarā-vihāra 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 Tikā (p. lxxvi.) as
well as for the name of Sisunāga, ancestor of the Nandas, (pp. lxxii.
Ixxiii.) It is also very remarkable, in relation to this subject, that
the latter prince is there represented as the son of a Liṇḍhavi Rāja,
that being apparently the name of a distinguished family in Magadha: Liṇḍhavi being also the name, in the inscriptions of Allahabad and
Bhitārī, of the father-in-law of our Chandra-gupta I. and maternal
grand-father of Sāmudra-gupta. Nevertheless, there still appear to
me insurmountable objections to identifying Sāmudra-gupta with Vin-
duśāra, 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 Vinduśāra, 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 Vaishnavā Cumāra-gupta and the Saiyya and Saktya worshipper, Scanda-gupta, have nothing in common with the Buddhist descendants and successors of Dharmāsoca. 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 Mahā-tevase and elsewhere, they inculcate the undoubted royal descent of Gautama Buddha.

Note C.

The passage above quoted from the Vishnu-Purāna seems to have been somewhat differently read by the more modern author of the Srimad-Bhāgavata,—who here as elsewhere, is apparently only transferring into his own more polished and elaborate verse, the records found in the older Purānic 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-spātika above mentioned, who is here called Visva-spūrji. The close agreement, as well as occasional discrepancy, of the two authorities, will be easily seen from the following extract (Bhāgavata, Book xii. chap. 1.)

"Visva-spūrji, another Puranāya, (i.e. says the scholiast, the best of the descendants of Puranāya 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-brāhmaṇical, (or lower than sudras)—and having exterminated the Xattriyas, he shall, in the city of Padmāvati, and on the Ganges, as far as Prayāga, derive tribute from the protected earth."
The words चनुमगासार्याः are explained here by the scholiast to describe the situation of the king's metropolis Padmávati, as being situated in the Ganges above Prayágá, 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 Prayágá" 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 Khamti 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 Jorháth 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
Alphabets of the Tai language.

of the other Shyán families whose literature is but a direct translation of Burmese Buddhism, as their alphabets, the Shyán-Khamti, 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 Assámesí. 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 Assámesí, 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 Assámesí, 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 ù and sometimes to û. 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.
### Alphabets of the TAI Language

#### Consonants

<table>
<thead>
<tr>
<th>Burman</th>
<th>Ahom</th>
<th>Khambir</th>
<th>Shyan</th>
<th>Laos</th>
<th>Roman</th>
</tr>
</thead>
<tbody>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
</tbody>
</table>

#### Vowels

<table>
<thead>
<tr>
<th>Burman</th>
<th>Ahom</th>
<th>Khambir</th>
<th>Shyan</th>
<th>Laos</th>
<th>Roman</th>
</tr>
</thead>
<tbody>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
<tr>
<td>ව</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
<td>ງ</td>
</tr>
</tbody>
</table>

**Ahom Inscription of an Assam Rupee.**

обходимаем, что загадка решена.
4. Where double consonants, as kl, pl, kr, &c. occur at the commencement of a word, as they frequently do in Siamese, the Shyán 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.

<table>
<thead>
<tr>
<th>Siamese</th>
<th>Láos</th>
<th>Shyán</th>
<th>Khamti</th>
<th>Ahom</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bá</td>
<td>bá</td>
<td>mà</td>
<td>bá</td>
<td>a shoulder,</td>
</tr>
<tr>
<td>Bá</td>
<td>bán</td>
<td>mán</td>
<td>bán</td>
<td>a village,</td>
</tr>
<tr>
<td>Bin</td>
<td>bin</td>
<td>mìn</td>
<td>bin</td>
<td>to fly,</td>
</tr>
<tr>
<td>Bo</td>
<td>bo</td>
<td>mo</td>
<td>bo</td>
<td>a well,</td>
</tr>
<tr>
<td>2. Dí</td>
<td>dí</td>
<td>ní</td>
<td>dí</td>
<td>good,</td>
</tr>
<tr>
<td>Deng</td>
<td>deng</td>
<td>leng</td>
<td>neng</td>
<td>red,</td>
</tr>
<tr>
<td>Doi</td>
<td>doi</td>
<td>loi</td>
<td>noi</td>
<td>a mountain,</td>
</tr>
<tr>
<td>Báu</td>
<td>düi</td>
<td>lǎu</td>
<td>náu</td>
<td>a star,</td>
</tr>
<tr>
<td>Dün</td>
<td>dün</td>
<td>nùn</td>
<td>nùn</td>
<td>the moon,</td>
</tr>
<tr>
<td>3. Rak</td>
<td>rak</td>
<td>hak</td>
<td>hak</td>
<td>to love,</td>
</tr>
<tr>
<td>Rái</td>
<td>rái</td>
<td>hái</td>
<td>rái</td>
<td>bad,</td>
</tr>
<tr>
<td>Ron</td>
<td>ron</td>
<td>hon</td>
<td>hon</td>
<td>hot,</td>
</tr>
<tr>
<td>Rú</td>
<td>rú</td>
<td>hú</td>
<td>rú</td>
<td>to know,</td>
</tr>
<tr>
<td>Rű</td>
<td>rű</td>
<td>hũ</td>
<td>hũ</td>
<td>a boat,</td>
</tr>
<tr>
<td>Rűn</td>
<td>rűn</td>
<td>hũn</td>
<td>rũn</td>
<td>a house,</td>
</tr>
<tr>
<td>4. Plá</td>
<td>pá</td>
<td>pá</td>
<td>pák</td>
<td>a fish,</td>
</tr>
<tr>
<td>Klaí</td>
<td>kai</td>
<td>kái</td>
<td>kái</td>
<td>distant,</td>
</tr>
<tr>
<td>Klúa</td>
<td>kú</td>
<td>kú</td>
<td>kú</td>
<td>salt,</td>
</tr>
<tr>
<td>Plën</td>
<td>pük</td>
<td>pük</td>
<td>plék</td>
<td>a husk,</td>
</tr>
</tbody>
</table>

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, Khamtí, 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, Khamtí, 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 gk; jh; 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, ʰ⁶ ng, ʰ⁶ n, ʰ⁶ m, ʰ⁶ 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 ʰch, the Lāos nearly the same, while all the Shyāns pronounce it as st. The next letter, ʰchh, is confounded by the Shyāns with s. The character for ʰph is used, by the Ahoms and Shyāns, to express both the aspirated ʰp and the sound of ʰf; the Khamtis for the most part confound these two sounds. The Ahoms use the same character for both ʰd and ʰn; and also for ʰb and ʰw; but the latter sound is changed to that of ʰb, whenever it occurs at the beginning of a word.

In the table of vowels we also find the sounds represented more fully by the Lāos than by the northern tribes; though the Lāos are still behind the Siamese in expressing the niceties of the language. The sounds resembling the French ʰu and ʰeu, or the German ʰü and ʰö, are written alike by the Shyāns, though they are perfectly distinguished in pronunciation; as also the sounds of ʰai and ʰái; ʰau and ʰäu; ʰeu and ʰiu. The sound ʰai, which is very common among the Shyāns and Khamtis, does not occur in the Lāos. Its place is supplied by ʰai. The long ʰö final of the Shyāns is generally pronounced ʰöa or ʰüa by the Lāos and Siamese. The Shyān character given in the table is that used in the neighborhood of ʰAva; it is the same, with very slight variations, as that used by the Shyāns of ʰMógaung.

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 ʰChakradwaja Sinha, who repulsed ʰAurangzeb’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 ʰk ʰkh; ʰch ʰchh; ʰt ʰth; ʰp ʰph, &c.; with the rising or falling intonations respectively.—Ed.

* See page 118 of Chronological Appendix.
Specimen of the Khamti character. from a manuscript of 10 pages, in the Asiatic Society's library.

Full size.
Specimen of the Ahom, or Assam, Character.
from a manuscript volume presented to the Society by Capt. Jenkins. 1835.

Ahom Alphabet prefixed to the same volume.

The first line in roman letters:...

(AUM?) pin-nga-yi-meuo-ran-kó-táu-phá-pai mó-nin: paimléuy

J. Pinsep lith.}
Remarks on the Silks of Assam.

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

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.


[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 mooonga, the kontkuri, the deo mooga, and the haumpottonée. 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 raja and grandees, and the rearing of the worm to one caste, are additional proofs that its introduction did not precede that of Hinduism—the joogees (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 (machin) 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-
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 pro-
hibitions: 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 procur-
able. Mr. Scott, a few years ago, introduced from Rungpoor, reeles,
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 expe-
riment 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 at-
tended to, I am led to believe this province exceedingly favorable to the produc-
tion 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 cir-
stances of a rude experiment.—F. Jenkins.
4. Okonnee.
5. Gomarree.

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 Assameese 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 sopida? 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 raja'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.
5. Diglotttee, (Tetranthera áiglottica, 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 Moruny, 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, Junna, Mookh, Jyntea, and the valley of Dhurmpoor—at the latter place, where the hill tribes of Mikirs and Kachiris 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 Son-halloo-fed worm is considered inferior to the preceding—one 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.

2. *Jeytooa*, in May and June.
3. *Aharooa*, in June and July.
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—it 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, 

---

Remarks on the Silks of Assam.

1837.
Remarks on the Silks of Assam. [Jan.

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

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
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 *Kamrup* 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. *Konkhiri 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-mukh* (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 2½ 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 dewmooga.

The haumpottence, 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 diff-
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 stock-

ings, 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 Upper Assam 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. Huovo 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.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mooga. Soorias,</td>
<td>7 by 1£</td>
<td>0 6</td>
<td>1 14 0 0 3 0 2 1 0</td>
<td></td>
<td></td>
<td>Dhoties.</td>
</tr>
<tr>
<td>Ditto,</td>
<td>16 ″ 2</td>
<td>1 0</td>
<td>5 0 0 0 8 0 5 8 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tekla,</td>
<td>5 ″ 12</td>
<td>0 4</td>
<td>1 14 0 0 2 0 1 6 0</td>
<td></td>
<td></td>
<td>Petticoats.</td>
</tr>
<tr>
<td>Rhia,</td>
<td>12 ″ 0</td>
<td>0 8</td>
<td>2 8 0 0 4 0 2 1 2 0</td>
<td></td>
<td></td>
<td>Scarfs.</td>
</tr>
<tr>
<td>Gaursha,</td>
<td>6 ″ 1</td>
<td>0 2</td>
<td>0 10 0 0 1 0 0 1 1 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joonta Bor Cappor, 12 ″ 2£</td>
<td>1 0</td>
<td>2 0 0 0 0 6 0 2 6 0</td>
<td>Made of the floss and worn in winter.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eria. Bor Cappor, 16 by 3</td>
<td>1 8</td>
<td>3 0 0 0 8 0 3 8 0</td>
<td>Worn in winter and used as a blanket, also made into coats.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meklas,</td>
<td>5 ″ 2</td>
<td>0 6</td>
<td>0 12 0 0 2 0 0 1 4 0</td>
<td></td>
<td></td>
<td>Used only by the poorer class.</td>
</tr>
<tr>
<td>Rhia,</td>
<td>10 ″ 1£</td>
<td>0 8</td>
<td>1 0 0 0 2 0 1 2 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaursha,</td>
<td>8 ″ 2£</td>
<td>0 4</td>
<td>0 8 0 0 2 0 0 1 0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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 haumpotence 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. Helver, 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 Argonautes, 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 Himalaya, 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 Arachnidae hindered their being reared in great numbers, and this enterprise 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 Rosset, 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 Linnaean Society, vol. vii.

He there mentioned only two species, the P. (Attacus) (Saturnia) pophia and P. cyathia. 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 unremitting 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 religiosae*, 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 1¼ of an inch.  
*Antenna*, 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 2 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, internā triangulari magnā alterā externā multō minori oblongā, inferioribus maculā eādem unā versus corpus triangulari magnā. 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.
Antenna, pectinated, about five lines broad, yellow.
Palpi, four, not covering the inner vermilary, 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.


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
on the indigenous Silkworms of India.

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 *Kontkuri 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.


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.

Antennae, pectinated in 2, 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 nubeculae 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 2) 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.

(Buchanan quotes it as *Phalaena 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 Dinajpur 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.


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.

1. 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; (quere: 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 progress 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-
On restoring sight to persons born blind.

In 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.**

<table>
<thead>
<tr>
<th>Feet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clayey soil.</td>
</tr>
<tr>
<td>2 to 7</td>
<td>Light soil, consisting of clay and sand, the proportion of sand increasing with the depth.</td>
</tr>
<tr>
<td>8</td>
<td>A vein of sand.</td>
</tr>
<tr>
<td>9 to 11</td>
<td>Sand with slight mixture of clay.</td>
</tr>
<tr>
<td>12 to 14</td>
<td>Fine sand.</td>
</tr>
<tr>
<td>15</td>
<td>River sand.</td>
</tr>
<tr>
<td>16</td>
<td>Coarse river sand.</td>
</tr>
<tr>
<td>17</td>
<td>Ditto ditto, with gravel and small boulders.</td>
</tr>
<tr>
<td>18</td>
<td>Large gravel and boulders.</td>
</tr>
<tr>
<td>19 to 25</td>
<td>Ditto ditto, some of the boulders very large.</td>
</tr>
<tr>
<td>26 to 27</td>
<td>Ditto ditto, large boulders, with a mixture of clay.</td>
</tr>
<tr>
<td>28 to 30</td>
<td>Ditto ditto, with a layer of immense boulders.</td>
</tr>
<tr>
<td>31 to 32</td>
<td>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.</td>
</tr>
<tr>
<td>33 to 36</td>
<td>Large gravel with large boulders.</td>
</tr>
<tr>
<td>37</td>
<td>A vein of old spring, as above.</td>
</tr>
<tr>
<td>38</td>
<td>Gravel with small boulders.</td>
</tr>
<tr>
<td>39</td>
<td>A vein of river sand with a mixture of small stones.</td>
</tr>
<tr>
<td>40 to 41</td>
<td>Gravel with large boulders.</td>
</tr>
<tr>
<td>42 to 46</td>
<td>Large gravel with small boulders.</td>
</tr>
<tr>
<td>47 to 48</td>
<td>A vein of old spring—small boulders.</td>
</tr>
<tr>
<td>49 to 54</td>
<td>Gravel with large boulders.</td>
</tr>
<tr>
<td>55 to 56</td>
<td>Vein of river sand, slightly mixed with gravel.</td>
</tr>
<tr>
<td>57 to 64</td>
<td>Gravel with small boulders.</td>
</tr>
<tr>
<td>65 to 66</td>
<td>A vein of fine river sand.</td>
</tr>
<tr>
<td>67 to 69</td>
<td>Gravel with no boulders.</td>
</tr>
</tbody>
</table>
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 Superintendent 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 Gaudamah had obtained nib-bun, 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 Sarvarata-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 Magadharryme of which is Hari-boung Zaytynk) from Ramaday-we to Adutza-woon-tha, who built the pagoda (assein dayd) there reigned 35 kings, and from Adutza-woon-tha to Benyathooha 19; in all 54 kings reigned in Labong. Benya-men-yea, called in Ava History Dolana Benya-oso-men-yea, the son of Benya-thooha, 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 Thootha Thoma, 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-thenpo; 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 Gnathanmima; 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 Tsothee, 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 Pegue, 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-tnsa, (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 discrepancy 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 MounGDari, 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 MounGDari, who dropped 550 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.
On the site of the Altars of Alexander.

year 990, after the death of Sen-bue-my,a 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-my,a 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 Kaweela, the eldest brother of the present Chow-tchee-weet of Labong, who was Myo-asa of Lagon, rose against Tha-dan-Mendub, 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. Kaweela 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 Moungs 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 zasaboleno. 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 Tsoba's authority, will not quietly acquiesce, and that at the death of the present Tsoba 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 ankles 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 pipal 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 Hephéstion 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 Aesines, 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 Ravi, 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 Chichée 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 Chichée
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 Bhawulpur 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 Panjab, 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 sung 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 Hindi, 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.


[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.]

'Téen-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-kêen, 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 Téen-choo. Some call this kingdom Mo-ken-to†; others name it Po-lo-mun (country of the brahmans); it is situated to the south of the Tsung-ling‡ (or Blue Mountains), distant some thousands of le to the south-east of the Yuê-che§ (Massagetae, or Indo-Sceythians).

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 चन्द्र्, Sindâha, Hindustan.  
† मधya Magadha.
‡ A chain of mountains to the north of Cashmere, which separates Eastern Turkestan, or Little Buchar, from Great Buchar.
§ M. Re'Músat has given a translation of Ma-twan-lin's account of the Yuê-che in his Noww. Mêlanges 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.
¶ Sheê-shan, an exact translation of the Sanscrit शिरस्माचय Himâlaya, 'abode of snow,' or rather शिरस्माचयमिर Himâlayagiri, 'mountain whereon the snow rests.'

This division of India must include the modern Cashmere, the description of which, by Masu'dî, 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 Line (Siamese), which are separated only by a little sea. Western India adjoins Ke-pin (Cophenes) and Po-sze (Persia)\(^\dagger\); 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.

Yan-sze-koo has stated that Yuen-too is no other than Shin-too; and Shin-too is Tien-choo; there is no difference but in the pronunciation more or less strong.\(^{\dagger}\)

From the kingdom called Kaou-fou\(^\ddagger\) of the Yu-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|l 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 Fuh-kuo-ke (Memoir on the kingdoms of Fuh, 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-fa, 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;\(\dagger\)]

* See for an account of these countries by Ma-twan-lin, the translation by M. Remusat, Nouv. Mél. Asiat. t. i. pp. 205 and 248.
\(^{\dagger}\) Capital of the Hans, situated in Shen-se; now Se-gan-fou.
\(^{\ddagger}\) 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 Siaadh, 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. 335, f. 27): "The kingdom of Kaou-fou was known in the time of the Hans. It is situated to the south-east of the great Yu-che (Massagetae). 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 Asa, are three kingdoms which are conquered by force and lost by weakness." The latter expressions are borrowed from the Taou-thi-King of Luau-tsze.

|| काश्यकाश्य kāśi or kashi 'splendid,' epithet of the sacred city of Benares, called वरसाणि Varanasi or वर्जनसि Varanásî. The latter denomination is represented as closely as permitted by the monosyllabic language of the Chinese (which wants the articulation ra) by Pho-lo-nae: the Sanscrit व b having so often the sound of ब that they are not distinguished from each other in Bengali writing: Sze (or) She-pho-lo-na-sze is also a faithful transcript of श्रवणसि Sri Varanásî, '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 Hàn or Gâng (Ganges) which some call Keu-pih-le. Here is situated the mountain Ling-tseaou; 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 tseaou.

Note of the Chinese Editor.

[Choo-fâ-wei says, in his Pûh-kwo-ke, that this mountain is situated to the south of Mo-kêe-te, which is also a kingdom dependent on India.]

At the period* when all these kingdoms belonged to the Yuê-che, the latter put their kings to death and substituted military chiefs. They en-joined all their people to practise the doctrine of Fûh-too (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 con-stitution compared with the Yuê-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), seve-

ral ambassadors from that country came to offer tribute‡. The western

* In Sanscrit Gamâ; this river, in sacred writings, bears also the name of Kapila, and more commonly Kapilâdhâra.
† 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 Yuê-che, or Indo-Scythians (book 338, fol. 2), states that the Chinese general Chang-ken was sent as an ambassador to the Yuê-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 Dahès, subjected the Gates in Co-

phens, and that Teen-choo, or India, was again subjugated by the Yuê-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 Yuê-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 Yuê-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 Iâ dia by the Yuê-che, or Scythians, must have taken place before the reign of Vicramâdityâ, 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 Pentapotamid Indicd 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 Vârâha Mihira, who thus explains the word "saka" employed by this astronomer to denote the Samvat era: "epoch when the barbarian kings named Saka (the Sarce) were defeated by Vicrama-dittva."

§ This emperor gained some trifling particulars respecting Shin-too, or India, by his general Chang-ken, whom he had sent to the Yuê-che, which are preserved by the historian Sze-ma-tsêen, in his Sze-ke (book 123, fols. 6 and 7), where it is stated that Shin-too is situated to the east of Ta-hca, the capital of which was the city of Lâa-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 Yuê-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 Fan-he of Hwan-te (A. D. 159) strangers often came by the way of Jih-nan (‘south of the sun;’ Tonquin and Cochín-China), 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-fang), 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 Lnoun-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-chān, sent one of his relations, named Soo-wih, as ambassador to India. On quitting Foo-nan, the embassy returned by the mouth of the Taon-keaoon-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-chān, 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 chia 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.
‡ 四正 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-keu of Wän-te, of the Sung (A. D. 428), the king of the kingdom of Ken-pih-le (Kapila) in India, named Yué-gæ, ('beloved of the moon'‡), sent an ambassador to him to present him with letters of submission (peion), 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 tse-she of Ming-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-keu (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 heauou-kïen, of the emperor Heauou-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 Fûh.]

In the beginning of the years tïen-kïen of the dynasty Leang (A. D. 502), the king of India, named Ken-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 स्वर्ण महाराण Mahârâna; 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 Chandramanda, 'joy or delight of the moon,' cited in the fifth table of the Ayen Akleri, 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 गंधर Gandhâri, or गंधर Gandhara.

[] 'Kuo lin tu keung,' literally, 'the kingdom overlooks great rivers.'
source, Sin-taou*, issues from mount Kwan-lun†; its waters then divide into five streams, and form what are termed the affluents of the Ganges (ming Gang shuuy). 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 (shuuy ting).

In the time of Seuen-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 (tse-mei), gold (kin), copper (tung), iron (tse), lead (yun), tin (seh), fine muslins embroidered with gold and silver‡; there are also a variety of odoriferous plants, yah-kin, sugar-canels, 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 Ta-tsin (the Roman empire), the An-se (or Ase, Syrians); some of the Indians come as far as Foo-nan and Keaou-chie (Tonquin), to traffic in coral necklaces and pearls of inferior quality (or which only resemble pearls—san-lun). 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 सिन्हa Sīta, 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 Bhaškarā Achārya: "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 Sīta, this river joins the Bhadrāswa as the Alakanandā, it enters Bharatavarsha (Hindustan); as the Chakshu, it proceeds to Ketumula, and as the Bhadra, it goes to the Kuru of the north."—Siddhānta-Strōmāni; Bhavana-Kosa, 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 Bhadrāsamā; the eastern branch is the Sīta, and the western is the Chakshu, or Oxsus."—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-meih, 'stone-honey.'
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 Seithan, 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), willing 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 जात jath. See the laws of Manu, book ii. v. 219, &c.
† Pe-te; this is a scaling-ladder, of which a representation may be seen in the Art Militaire Chinois, figs. 48 and 49.
‡ Mah-meou, 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:—

有文宇善天文等曆之術其人皆
學悉曆章書於具多樹葉凡記事

The two Chinese characters (2nd and 3rd of 2nd line) seth-than are a transcription of the Sanscrit word पिला Siddhānta, which signifies 'established truth,' 'demonstrable conclusion,' and which forms the titles of many scientific books, as the Sārya-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 नल pīla, 'yellow,' or पिला pīlaka, 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; चाविय जाति Kshattriya jāti.
¶ Tsow, '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 wu thih, of the Tang dynasty (A.D. 618 to 627), there were great troubles in the kingdom. The king, She-lo-ye-toʻ†, 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-ten sân come into our kingdom?" They all replied: "None have hitherto come; what is termed the kingdom of the Middle, is Mo-ho-chin-ten." Whereupon, the king, going to meet the ambassador, bent his head in token of obedience and respect (ma-pae) to receive the letter (chou-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 Matw-an-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 श्रीरहिता Śrī-rahitā. 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 Saurāstra in the 6th century? See M. Jacquet's remarks in the last volume.—Ed.]

‡ Tsin is the name of the kingdom 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商务 of the Books. The name of this dynasty has formed that of China, in Sanscrit चīna, which occurs in the Laws of Menu, book x. s. 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-Chinā, 'great China;' in the modern dialects of India, Mahā-Chin-stan, '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-shoe); he again sent a present of pearls of fire (ho-choo), year-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 ministre (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; Necc-po-lo furnishing 7,000 cavalry. Heuen-tse, after organizing his force, advanced to give battle as far as the city of Too-poo-ho-loy, 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-weil]. The humanity of the Chinese general (see-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 rata, 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-ken-to (Magadha)." The same dictionary adds, that in the books of Fuh, 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.


§ 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 was 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 Godâveri, 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-keasom-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 Kau-mo-loo+ furnished different articles, with a chart of the country‡, amongst which was a portrait of Lao-tse.

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-meish, 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-tae-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.

* Śṛi-kumāra?
+ This kingdom must be that of Kāma-rūpa, mentioned in the Sanscrit inscriptions 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 ma, and ā by lōo; 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 nāra, '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 Pānjavāh, 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 ablish, 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-kan (the capital). In the time of Kaou-tsung (A. D. 650 to 684), a Loo-ke-n-ye-tse* of the country of Woo-chan†, 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 keen-fung‡ (A. D. 667), the Five Indies (or five kingdoms of India) sent ambassadors to the court of the emperor. In the years kue-yuen (A. D. 715 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-shel (or Arabs) and the Too-fan (or Tibetans), offering to take the command of the auxiliary troops. The Emperor Huen-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-long, the Ganges?) gave way and disappeared.

The third of the years kwoang-shun, of the modern Chows (A. D. 953) a Sa-mun (a 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 kun-thi, 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 लोकायतिक Lôkâyatika, or follower of the atheistical system of philosophy founded by Charâwâka, entitled Lôkâyata (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 keen-fung were only two, 666 and 667.
§ These were of course parrots.
|| Ta-shel, 'great eaters,' (rather tâzî, 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 Musliman 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."
the body of Füh*, vases of crystal, and Sanscrit writings on leaves of 
Pei-lo, to the number of forty, which he presented to the emperor. 
Taou-yuen returned to the western countries (of Asia) in the years 
teen-füh (A. D. 943 to 944); he was twelve years on his travels, wander-
ing in the Five Zin-too for six years. The Five Zin-too (divisions of 
India) are the same as Téen-choo† (India). He brought back an abun-
dance 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 dedic-
cated all his cares to one hundred and fifty-seven persons. On his re-
turn 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 Ken-she-me‡. Orders were everywhere given that 
guides should be provided him on his route.

After the years kae-pou (about A. D. 969), a Buddhist priest of In-
dia brought some Sanscrit books (or Indian presents§), and envoy
continued to bring them from thence. During the winter of the eighth 
year, the son of the king of Eastern India, named Jang-kee-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 apart-
ment in the palace of his ministers of state, that he should be well treat-
ed 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 
which he was the object, he requested permission to return to his native king-
dom, 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

---

* Th-Füh-shay-le-yth: the characters shay-le are the transcription of the Sans-
crit word śālīrā, 'body,' or śālīrīna, 'corporeal.' Dr. Morri-
son, in his Dictionary (Vol. I. Part i. p. 530), states on an authority unknown to us, 
but apparently to be relied on: "Shay-le-1a, 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 ap-
pearance, a good omen.''

† Another transcription of the Sanscrit श्री शिन राज्रि, the river Indus, whence 
the European and Arabic name of India.

‡ These are the kingdoms of Purusha and Cashmere. See Ma-twa-lin, book 

§ Che-fan-le, ' 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 Bud-
dhist books in Sanscrit, which were subsequently translated into Chinese.

‖ Téen-choo-che-fd-kwo, ' the kingdom of the Law of India;' apparently the king-
dom of the Law of Buddha, i. e. Magadha.

¶ In Sanscrit मण्डुरित, 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 teesjungHING-kwû (‘the kingdom in great peace and prosperity’), equivalent to A. D. 983, a Buddhist priest of E-chow, named Kwang-yuenn, 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 felicitics 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-ken§, vestments without sleeves, called kevs-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-teen-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, Mahâ-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 Ayen AKBHÉI. 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 usual termination aag has the same value as the anuswara in Sanscrit, or the labial m 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 or India.

† The first of the two characters which express this name (and which is an accurate representation of the Sanscrit चिन Chîn) 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 Mu-wan-liu.

§ Shâkya-immu, 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 Mālava); 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 (Jā) 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 (pevon) 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 Sanshū-tsi or Sumatra. From this remote country he proceeded to the sovereign (chho) of the kingdom of Go-koo-lo, and that of the kingdom of Sze-ma-kie-mang-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 Tsoo-hwan, returning from the western countries of Asia (Se-yu), with another Buddhist priest from a distant country, named Mih-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 infâdel (gue-tou), 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.jih-ne-lo; 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 Fūh, 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-ja; in Sanscrit, Sangha and Dharma (the priest, or religious meeting), and the law.
‡ Sans-fâ-h-ši.
§ ‘Valuable head-dresses (or caps), in the form of serpents,’ arc, doubtless, the shawls which the modern Muhammadans, as well as the Hindus, wrap round their heads.
|| Tsan-lo-se-tiēn-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-shé (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 hih-yih (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 Brahmans.*

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 pel-to tree, the language of which is not understood.

The third and ninth of the year tien 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-fü, 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 (Bodhisatwas): 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 Nágāri inscription ye dharma hétu, &c., like those dug up at Tagoung in Ava.—Ed.
‡ These are translations of Sanscrit Buddha epitheGes.
§ 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. CUHINN, Captain F. JENKINS, Mr. GEORGE HILL, and Mr. RICHARD WALKER, Captain EDWARD SANDERS, Bábús RA'UNA'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. CRAIBROFT, were proposed by Mr. J. PRINSEF, 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 populosity 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-
Proceedings of the Asiatic Society.

14th Dec. 1836;}

P. F. CAUTLEY, Capt. Arty.
H. FALCONE, 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.

Journal Asiatique for April, May, and June, 1836—by the Asiatic Society of Paris.
Shams-ul hindisah, a mathematical work, compiled by the Nawâb 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. TRELKELD—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:

Anelecta Arabica, Part I.
Institutiones Juris Mohammedani circa Bellum contra eos qui ab Islamo-sunt alieni, by EHN. FRID. CAR. ROSENMULLER, Leipsig, 1825.
Y King, Antiquissimus Sinarum Liber ex Latina Interpretatione, P. REGIS aliorumque, &c.; by Professor JULIUS MöHL.
Baghavat Gita, translated into German, by C. R. G. PEPER, Leipsig, 1834.

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 (lophilodon?), 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 vertebrae 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 scrofa,*) 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.
<table>
<thead>
<tr>
<th>Day of the Month</th>
<th>Observations at 10 A. M.</th>
<th>Calculated Humidity</th>
<th>Observations at 4 P. M.</th>
<th>Calculated Humidity</th>
<th>Temperature of water at 10 A. M.</th>
<th>Wind</th>
<th>Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>2</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>3</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>4</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>5</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>6</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>7</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>8</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>9</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>10</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>11</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>12</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>13</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>14</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>15</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>16</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>17</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>18</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>19</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>20</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>21</td>
<td>36,977</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
</tr>
<tr>
<td>Mean, 30,924</td>
<td>30,924</td>
<td>67,1</td>
<td>9.9</td>
<td>9,7</td>
<td>90,8</td>
<td>93,9</td>
<td>9,8</td>
</tr>
</tbody>
</table>

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.
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 Arsacidae, 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. Weary of 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 swear, 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.'

M 2
"The astrologers and magicians required time for the consideration of the question proposed to them by Sapor. 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?' Sapor 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 strewed 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 Sapor were put into execution. He then ordered the half of the floor of his royal pavilion to be strewed 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, Sapor 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 desppicable 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 Mamikonian, 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 devastasted 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, Niresses 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-

* Urdo Ɂ'p̪u'z̪u Niresses 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 Çhow 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 un tied 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 मंद्र स शिश the words मंद्र स शिश 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 Śrī VĀCHASPATI, in praise of a brāhman of rank and learning, styled BHĀTTA ŚRĪ BHĀVA-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 BHĀVA-DEVA was the founder. The individuals of this family, whose names are given, are, 1. SĀVARNA MUNI, the root of the gotra or line.—2. BHĀVA-DEVA 1st, a descendant of the above, whose elder and younger brothers were MĀHĀ-DEVA and ATTĀHĀSA.—3. RATHĀNGA, son of the above, who had seven younger brothers.—4. ATYANGA, son of the above.—5. BUDHA, son of the above, surnamed SPHURITA.—6. ĀDI-DEVA, son of the above.—7. GOVARDHANA, son of the above, whose mother's name was DEVAKI'.—8. BHĀVA-DEVA 2nd, son of the above, surnamed BĀLA-VALABHI'-BHUJANGA, whose mother's name was SĀNGOKA', and who was minister to Rāja HARIVARMA-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 pāda or half line, to the Srādgard 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.

Dimensions of the Slab, 3 feet by 1½ feet. marked No. 2.
Transcript of the Inscription in the modern Deva-nagari character.

1. गाढियगृहकलाकुचकुम्भप्रस्थलानकुश्यासिद्धिन वयुया परिरिपिनमानः। सालुपतामिनवा वनमार्णिनेन वादेवतेऽपदसिद्धि चुः। त्रियें घः॥

2. वाल्मिकब्रह्मचर्च्छड़ुपालिका सिद्धिवे तदशुमा पञ्चन्तु प्रधिद। चक्रवर्ती भध्वसिद्धकुलप्रश्नितद्वाराचार्य रसनाप्रमधिः जेया:।

3. सार्वभौम सुगमेेदाविस वुले ये जनविर सुत्रियालियां श्रासनभूम योषाजिन गौर्ग्रामा: प्रति संति। वायावचनभुवं विभूपथात्मक यात्रतु सर्वायमें ग्रामा: सिद्धज हव केवलमनुष्ठारतिः राजातिः॥

4. सत्ताव: स्थितिरीवं दाहवं कुम्भ: श्रासांकमभुवकदिदिन्शीति तत्रिः। न प्रोप्त्यो न कुटिल: सरल: सुप्तवा सर्वावंत: सुखमिश्र प्रससार वंश:॥

5. तल्लेरातिन्थसमिः कलस्य दाताय ताप्णन्यरमाः। भव हव विद्यातल्प्रसवः प्रवभूव भर्तरेव॥

6. अग्राजायवांसृंधं महाविवाहास्वायः। स जनी वेष्पुष्पोद्वितिविधर्यारिः॥

7. स श्रासनं गाढियगृहाकलाकुचकुम्भप्रस्थलानकुश्यासिद्धिन योषाजिन गौर्ग्रामा: प्रति संति। वायावचनभुवं विभूपथात्मक यात्रतु सर्वायमें ग्रामा:॥

8. रश्याभवं: समाजिन जनानन्दजननः श्रिव चौरिदारवि कलकालायनिनियमव:। सुतियाज्ञायत: सुन्नित हत नान्या दिस्मि दिस्मि योजाश्रोऽभूताय द्रव वुधस्यतनव:॥
9 तख्यादभूदभिजनामभूदैवकौजिमयाजपौर्वमहातम्बुजांकन्दः।

10 वेदवेदविशिष्टेण देवविद्विसिम्विसिम्वात्मना भुवनभूतस्तिनः

11 स देवकीब्रह्मवर्षा भवं स्थिता समर्थसुवििद्विसियस्त्रां।

12 पीरशंक्लोपु च समाधु स तालिकानार दीर्घायु च कलया चच वचस्तितायाः॥

13 बलमाणु वसूमलीव सरसरीन देधा ध्यान निजनास्यमदं सदां।

14 तस्यो खञ्चस्विधानवरीयवितविजीवायः स देवा दिरिजातः अनि

15 लक्षीन्र्दिवदादिना मनविवभवे विष्यमहरामत्तिपतिं विज्ञाये च

16 यथावृत्ति विशिष्टविध्व व्रयिरं चक्षा विध स धयभिधिय हिरि

17 सताच्रत्य समाकथाय ववरूषेन द्वारणा च स्मरो विभागस गुणामु

धर्मणिष्ट्यानात्रीनावाः॥
18 महाराणाप्रसादीग्रन्थ वाक्यपदमित्रिकान्ता: खदन्ते गुणः।

19 यद्याध्यात्मजसि वजीयसि मन्दविभः खवातपातकरिः तरियि

उच्छिदशानि यददीयप्रश्नांसे नात्सुवारिशिरः ननु गाजुदल्लः।

20 ब्रह्माविविद्यादुरिः र्कमुखूतविचारुतक्षा महत्तिचिम्

बौद्धमहाप्रभुकुम्भसम्बन्धमुः: पाघटकविविद्यामुः। खदहनपर्विः

21 सिद्धान्तंत्रग्नितार्मयार्हता विश्राहुतप्रसविताः पछसेव

कर्तः खयं प्रथियता च नवीनशोराशब्दः तेषु र्कुदमूदयोः।

22 स बाध्याः विश्राहसम्भिप्रमाणः स्मार्तिकाविविधायसंस्कृत

23 मीमांसायुपायः स खयु विरचिते। चेन भट्टाकाननीत्य यत

किं भुवा सीध्वा सादृश्य सकलकविविधाक्षेत्रमेरूपः शास्त्रेयथैः

24 यस्य खयु वालवम्भभूमुकजः इति नाम नाहतः केन।

N 2
25 दंद्याज्ञानं भुजगोमेधमादायचिराङ्गकृत्यूपोनिन्दैरिव मनलबृहि:
   यो जीववनं जमधेनीसम पूर्वेः मल्लवेयाम गरलजसेविः नोरजसः॥

26 राजायामञ्जराय जाईयत्रयामेपकस्वरूपाणीविसम अन्वमय
   पांवपिरिक्रमयायलगिर्ये॥
   चेनाकारि जालायसः परिसरकारातिभजातासनवातिकृतिविनम
   मुग्धमुखप्रोज्ञातिनिवानसः॥

27 तेनायं भगवानं भवाधिकसमुन्ताराय नारायणं श्रीम पर्यातिव
   प्रसाढित्वयारापिदः प्रतिशापितः
   वामाचीवदनेनुलोकविज्ञनों। अन्नानंतसंयतं भूनेमेहत्तपारि
   जातिविप्रयस्मानसिद्धवे॥

28 तेन प्रासाद प्रव लिपूर्तिविपृष्ट्या बिकर्त्यः अत्मान्व
   अवताराद्वा चरित्रिव विभिन्ने विपृष्टन्त्रापिषः
   निश्चित ये। वेजयनं वियति विपृष्टि वेजयन्तीविद्वासन। कैविसे ना
   भिलायं कल्याति गिरिष्ठे। यथं संतानं जीवी॥

29 नारायणानसंबंधश्रेयं सन्वेचि विभिन्नसः स निम्भं गमभूग्रहणं तरघे।
   नारायणानसंबंधश्रेयं सन्वेचि विभिन्नसः स निम्भं गमभूग्रहणं तरघे।

30 जयं चरित्रेद्विवियति वसुमतीविश्वानाविद्याध्यायिकनिन्दनं
   श्रां सचि ददै श्रार्ज्ज्वावीदयः।
   निद्रसङ्गमेव द्रैवर्तिद्रिद्वाराद्वा। कामश्च संजीवनं कारः कामश्च
   सङ्गमद्वो राससविनिष्ठाय॥

31 प्रासादायं स खदु जगतं पुराणशेषकविवीर्यं च हो वायिः मरकत
   मिश्रसकृप्यं ज्ञायतेऽः।
   सत्वे वाचप्रतिध्वितिमितिदश्यं शक्तिवाचशुद्धमात्रमिति
   कल्यातिहिः स च कारासः॥

32 बधित विरुद्धसः सीचि संसारसारं स खदु निक्षिप्तिः
   नदिनिर्माणां॥
Om! Salutation to (Krishna) the adorable son of Vasudeva!

Verse 1. May Hari (Vishnu), who, desiring to embrace (Saraswati) with his body stamped with the impress of the leaves, of the jar-like bosom of the warmly embraced Kama (Lakshmi), was bantered thus, “Perish not this fresh garland of flowers,” by the goddess of speech (Saraswati)—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 Ráhrá, is the ornament of the regions of Aryá-vartta, (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 extreme...

* 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 Himalaya 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 वंश 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 Attahása; just as Vishnu is between Brahma and Siva.—7. He obtained from the king of Gaura a grant embracing the choice land of the territory set apart at Sri Hastini (Hastini-puri). Moreover, he saw his eight sons, Rathanga, &c. like the eight forms of Maheśha† (Siva).—8. From Rathanga 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 Sri 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 raja 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 Devaki', equal to (preserve) the stability of the world, wedded to Saraswati', 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 Sángoka, the venerable, the virtuous daughter of a bráhman of the race of Vandyä Ghatiś, the jewel of women.—14. In her, announcing his

* The word here rendered "tribute" looks most like किच्छ in the original; but that reading makes no sense. It is here translated as if it were कच्छ for कर्य (र and श 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 किच्छ; but on considering the metre, this reading proved inadmissible. The measure of this verse is the Arya of 30 instants in the first line and 27 in the second.

† The eight forms of Maheśha, 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," शी "the earth, speech," and विवेष "increasing."

§ Name of a family of Rádhíya bráhmans.
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 Nagantaka (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 Varmma-deva long exercised dominion. In the reign of his son also, Lakshmi', like a firm Kalpalata (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 Kamala', 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 brahminical 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 Himalaya) 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 discernor 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 Varaha‡.—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.

‡ Varaha Mihira, a great astronomer, and one of the nine learned men styled नवराज "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 Sáma-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 BÁLA-VALABHI'-BHUVANGA† not honored?—it is with extasy heard, described, and proclaimed even by Mimánsák (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 NÁRAYANA (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 PÁRIJÁTA.§ 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 Srāgdhāra 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. वलभ “the frame of a thatch, a turret;” also I believe the name of a city and a dynasty, and मुण्डक “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.
Sri 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 Kailasa.—29. He (Bhava-deva), placed in that house of Vishnu, in the innermost sanctuaries, the images of Narayana, Ananta, and Nrisingha, as the vedas in the mouths of Brahma.—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 Kama, 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 Vachaspati, the chief of Brâhmans. Let this golden zone, like a beautiful form of fame, remain on the loins of this pure edifice until the destruction of the world!

This eulogium is upon Bhatta Sri Bhava-deva, surnamed Bala-valabhi-bhujanga.

* A peculiar mark on the breast of Vishnu, said to be a curl of hair twisting to the right.
† The compound word हरिमित्रेः here translated "an offering to Hari," has given much trouble; and the sense at last adopted does not appear very satisfactory. The word मित्र is not found in Dictionaries: it is substituted by a grammatical rule, for मित्र "understanding;" but only when compounded with a negative, or with दूर, तु, सद, or अच्छ. The meaning here given is thus arrived at, the word मित्र is given in Wilson as meaning "an offering," and is derived from the root मित्र by adding the affix अयप: it has therefore been supposed that this word मित्र may be formed by affixing अच्छ तु to the same root, with the same meaning.
‡ Referring to the story of Krishna's conquering the one hundred and ten-headed serpent Kaliya in the river Yamuna near Vrindavana.
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 Lunar, 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 “ΟΔΑΟ” upon coins of the naked running figure, so common among the Bactrian series. Here the Celtique renders Οαδ and oed,—âge, temps, adding atas, 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.”—Ep.
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, "Veda-
na" is given as Pehlevi for terms—this seems the same (perhaps in the genitive case) as "œd" 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 pecu-
liarity 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 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 BACIAEJC BACI-

AECN†. 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 Hermaeus 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 basileon, on precisely similar coins, but we do not know of any instance in which they occur together.—Ed.

2 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 "Frith-

ard'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 σωτήρ of the coins, according to my book, should be κατα-δαο, signifying Sauveur, Defenseur, which accords well with פֶסֶר.

The μεγαρ seems to read ῥαραο—that is, tres grand, from "ra—grand," duplicated, and therefore perhaps the vowel is repeated פֶסֶר; 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 ANIKHTOX—literally, "not-vanquished." On the opposite side of the coin is the native legend which you have rendered "apotilo," for which the Vocabulaire gives—"ap, sans"—"atela, combat, confusion."

The instances of "ap" being used for "sans," or for the Greek "a 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 Bhavani 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 furtuit-
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 Caesar, and à fortiori long before our Indo-Scythic coins were struck.

The legend of Col. Stacy's last coin, ΑΟΗ, 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 Α to stand for ἀναβαφτός, as on the Egyptian coins, Α ΟΗ anno 78. For ourselves we still maintain that, as the obverse legend is evidently a mere jumble of the title ΒΑΓΙΑΕΩΚ ΒΑΓΙΑΕΩΝ, there can be no hesitation in pronouncing ΑΟΗ a similar jumble of ΗΑΙΟΚ, 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 ΡΑΟ. 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 "Indiunistes—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, name, 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, APAOKPO semble ne pouvoir s'expliquer, comme l'a proposé aussi tres ingenieusement M. K. Ott. Müller, que par le mot Sanscrit OKPO combine 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.

MERULIDE, CRATEROPODINE; AIPUNEMIA ? TESIA, nobis; TEE-SEE of the Nipalese.

Bill shorter than the head, straight, and with the nares* perfectly Cineline. 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.


* 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.

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 3/4 inches by 7 1/4, and 3 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.


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.


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 Sylviidae, but are essentially terrestrial. Do they not constitute the oriental type of the American Drymophile? and do
they not serve, in a remarkable manner, to connect the Merulinae and the Crateropodinae?

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


Character:—Bill scarcely longer than the head, stout, hard, entire, much higher than broad, sub-arcuated throughout, with both tips inclined downwards and obtuse. Tomia, beyond the nares, deeply locked, trenchant and scarpt 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, tibiae 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 Pittae, but they appear to me, upon the whole, to belong to the Crateropodinae*, 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 ant tally 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 colo-sal avenues of the Saul (Shorea Robusta), or the Ghoral and Jhârdâl*, through those of the Deodar (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-Himalayan 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 vote 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-Himalayan 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 Quadririnammis, nobis, and antelope Goral.—Hardwicke.
feeblest of these, as well as one intermediate species; beginning with the largest and ending with the least.


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 2½ 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 membranated, 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 posteal, 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 posteally, 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 *Pyrrhosis* 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: orbitar: wings of anteal: bill 1|2 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 postally: tarsus rather longer than the anteal outer toe, which is distinctly larger than the posteal 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, 31/2, and 2nd, 1 1/2 inches less than the 5th: primaries plus tertiaries 1 1/4 to 1 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-
Description of three new species of Woodpecker.

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 tertaries: 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: orbitar 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.

Yunxinae*.

Genus or sub-genus new. Vivia, nobis. Wee-wee of the Nipalese. Generic character:—
Bill shorter than the head, straight, conical and acuminated: 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 tertaries, ¼ 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 7½ wide, and ½ 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 Yunxinae 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 Picinae.
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: ex-
tremely 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 cen-
trally three-fourths to the tip, where it is taken up by a single cuneat-
ing angle: lower mandible not angulated like the upper in its body,
but similarly so towards its cuneate point: nares and head as in Sul-
taneus, 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 posteal one: grasp rather oblique, the
posteal toes being directed obliquely outwards, but incapable of rever-
sion to the front: talons powerful, but only sub-angulated beneath:
wings medial, reaching to middle of tail, gradated and formed, as in Sul-
taneus: tail rather short, very moderately wedged; in structure
similar to that of Sultanæus: orbits nude.

**Color and size.** Wings, lower back, and tail, dark cinnamoneous
or chestnut 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 chestnut bars on the thigh and tail-
coverts: behind each ear a brilliant crimson spot: bill, bright yel-
low: orbitar 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 Sultanæus 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 Piciana.

**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 antecal outer toe, which is conspicuously larger than the postecal: 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, posteally, 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: orbitar skin, dusky green: legs, clearish green: talons, dusky: 11 1/2 to 12 inches by 18: 4 1/2 ounces.

**Remarks.** This species in size, colors and characters, bears much resemblance to the _Picus Shorii_ of Goulb’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 Insessorial Birds.*

*By B. H. Hodgson, Esq.*

**Conirostres. Lamprotorninae? Dentiostres, Crateropodinae? Leiotrichane?**

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 *Leiotrichane.* 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 *Insessores.*

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.

Tomie, 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; 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, Cūtia 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 acuminated 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 Cūtia. 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 tomize 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 Cūtia, united as it is with a simple tongue, a subtriturating 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 Cúitia: 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 Sturnidae.

As for our Cúitia, 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 Cúitia, 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 7½ inches long by 10½ to 11 wide: bill ¼: tarsus 1¼: central toe ½, hind ¼. 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 7½ inches; breadth 7 feet 5¼ inches.

The female in length was 3 feet 1 inch, and in breadth 7 feet 7½ 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 olfac-
tory 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 alto-
gether through their sense of sight and not that of smell."

On this subject it appears to me that the parties, like the dispu-
tants in the fable of the Chameleon, "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. Wat-
ton 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 de-
ceased 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 de-
composing 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 hav-
ing 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 barkat 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., Nipal 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 Was 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 Nipal make a marked distinction between the Trans-Himalayan 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-Himalayan animal. The notes appended are of the Cis-Himalayan 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 Kaghazi, 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$\frac{1}{3}$ 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$\frac{1}{2}$ 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\ 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 caecum 28 feet, from caecum to vent 12 feet. One caecum 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 subclavians and left vertebral—second, 2\ 1/2 inches higher: it (the aorta) divides into two branches; viz. the right cephalic, and the common trunk of the right subclavians 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\ 1/4 inches.
From the sole of fore foot to superior crest of scapula, 9\ 1/2 ins.
From foramen magnum to snout, taken with callipers, 5\ 1/4 inches.
Length of tail 6 inches.
From first cervical vertebra, to first vertebra of the tail, 16\ 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\ 3/4 inches.
From wrist to tip of middle finger, 2\ 3/4 inches.
Length of femur, 4\ 1/2 inches.
Length of tibia, and fibula, 5\ 1/2 inches.
From heel to tip of middle toe, 4\ 1/2 inches.
Girth round lower part of thorax, 12 inches.
From anterior edge of the orbit to tip of snout, 1\ 1/4 inches.
From external opening of the ear to the tip of the nose, 3\ 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 Pekin
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
Eráwadi, is said to have been destroyed by the Tartars and Chinese
before the birth of Christ. In the reign of Phyu'-zô-di', 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 Kú-thâm-bí; 
but neither the date nor the cause of this war is given. The 42nd
king of Pagan, Anóra-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 Anóra-thá-zô's residence in China, the emperor daily sup-
plied 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-pade', 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 Eráwadi below Prome called
Turoup-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-zua, 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 Kyō-zuā. 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 Kyō-zuā 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 Kyō-zuā, the nine Shan towns on the frontiers of China, Maing-mó, Hō-thá, La-thá, &c. are said to have been separated from the empire of Pagan.

In the year 1412, during the reign of Men-qaung, 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 Mauν-ton 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-nyaung, and communicates with the Zo 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-youn-day-aka, king of Ava, the Chinese again sent a mission to demand vessels of gold and silver, which they declared Anora-Thâ-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 Thô-ngan-buá, the Shan chief of Mo-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:-wân*. The Chinese again invaded Ava in the year 1445, and the king again proceeded up the Erâwadi 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 Thô-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 Thô-ngan-buá, but upon condition that the Chinese army should first go and bring under subjection Ya-mî-theng, a town lying to the southward of Ava, which was then in a state of rebellion. The Chinese consented, and after taking Ya-mî-theng and delivering it over to a Burmese force which had accompanied them, they returned to Ava, when Thô-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 Mó:-gaung and Mó:-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 Tsó:-bwah of Mó:-gaung named Thó:-kyin-buá', and his younger brother Thó:-fout-buá', for defeating the Chinese invading army.

In the year 1477, in the reign of Mahá-Thy'-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-mí-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, Mó:-gaung, Zenmáy, Thein-ní, &c. sent a large army to the frontiers of China, and took possession of the nine Shan towns (Kó:-Shan-pyi 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 Máng, 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.
1837.} Some account of the Wars between Burmah and China. 125

Kâing-mah; and Maing-lyn or Maing-lyî, all of which, with the exception of Kâing-mah, are now, and apparently were at that time, under the dominion of China. The chief of Mô-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-mô*, who had taken advantage of the downfall of the extensive Pegu empire left by Tshen-byu'-myâ-yen, and set himself up as an independent chief. On the approach of the king, the chief of Ba-mô called Thó-tsên, fled to Yunan, and the king after taking Ba-mô, 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-mô 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-mô, and returned to Ava. Some Burmese historians state, that the fugitive chief of Ba-mô 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 Menô-ye'-yanda-meit, also called Nga-dat-dayaka, king of Ava, Youn-lî' (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 Mô-myîa (Chinese Theng-ye-chow), and sent a message to the Tsô-buah of Ba-mô, saying that he would reside at Ba-mô and present 100 viss† of gold to the king of Ava. The Tsô-buah replied,

* The Burmese write this name Ban-mô, although they pronounce it Ba-mô. Bôn in the Siamese and Yûn Shan languages, and Môn in most of the other Shan dialects, means a village. Some of the Shans call this place Man-mô, and others Kat-mài.

† A viss is a Burmese weight equal to about 3½ English pounds.
that he dare not forward such a message to Ava, and Youn-lhy' then offered to become a subject of the king of Ava. The Tsō:-buah made a reference to Ava, and the king ordered him to allow Youn-lhy' and his followers to come in, upon condition that they relinquished their arms, and to forward them to Ava. Youn-lhy' then came in with upwards of sixty of his nobles, including the governor of Maing-Tshō or Yunnan, 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-lhy' 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 Mō:-meit, and the other by Thein-ni and Mō-ne*. Shortly after Youn-lhy' reached Ava, accounts were received that a large force belonging to him was attacking the Burmese territory near Mō:-meit, and when questioned by the Burmese, Youn-lhy' 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 Mō.-né and joined the other portion of Youn-lhy' s army, which had been ordered to march down by Thein-ni and Mō-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 Mō-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 Dr Halde, it is stated, that when the Tartars made themselves masters of China, "a great number of Chinese fugitives from the province of Yunnan 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-ye-gyö-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-gya-meng, or the king thrown into the water. As soon as Meng-ye'-gyö-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-young-dayaka, Tho-ngan-bua had been
surrendered to the Chinese, and in the reign of king Nga-dat-dayaka
they had been made to surrender the Tsjo-buah 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 accord-
ingly, 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 care-
fully 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 Lôlv came to Ba-mó and Kaung-toûn, 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 Nânba, 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 Lôlv 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 Lôlî'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. Lôlî left Ba-mó much dissatisfied, and on his arrival at Mó-myû, 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-Tshî, and preferred the same complaint to the Tsûntû, or governor general, there. The Tsûntû observed, that he would wait a little and see if anything else occurred, to prove the truth of Lôlî'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 Lôtâ'ri' as their chief, which had come to Kyain-ton and put up to the north of that town at the great bazar of Kat-thwâk. 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:buâh being absent at Ava at the time, Lôtâ'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. Lôtâ'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. Lôtâ'ri' declared that this would not satisfy them, and returned to China with some of the principal traders, and complained to the Tsûntû of Yuman*. That officer being urged, at the same time,

* Within the last six years two cases of accidental homicide occurred at Ava,
by the ex-Tsö:buáh's of Ba-mó, Theinnyi, Kyaing-toán 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 Kyaing-toán. The Te ūntú put up a writing on the bank of the Tálo 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-lo ye', consisting of 50,000 foot and 10,000 horse, advanced and invested Kyaing-toán. The Tsö:buáh of Kyaing-toán at the same time revolted and joined the Chinese.

On Tšen-ryu'-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-wé'-weng-dó-mhu'Ne-myó-tsí'-thu*, to relieve Kyaing-toán. 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 Tálo 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-lo 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. Thi'n-wi'-buáh and Dô-rayá, the Tsö:buáhs of Kyaing-toán and Lu-ta-tshay-nhtít-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 Shyi'-mwe-toán 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-dó-mhu 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-leit near Mó-wún against Bamó. His Majesty had before, anticipating the return of the Chinese, ordered Kaung-toán 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 Lét-we’-weng-mhu’, and the other by the land route to the westward of that river, under the Wún-gyih Mahá-tsi’t-thu’, who should be joined by all the force he might find at Mó-gaung, Mó-nyen 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-gyih 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 Lét-we’-weng-dó-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-loáu mountain another portion of the Chinese army, consisting of 10,000 horse and 100,000 foot, under general Tsheng-tá-lo-yé’ marched by the Tsandá route against Mó-gaung. A body of 5,000 horse and 50,000 foot also took post on Thinzá-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-toán, 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-toán, 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-toán at a distance of more than 140 cubits.

The Lét-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 Shwegu, stopped to allow all his boats to come up, and determined, in the meantime, to throw into Kaung-toān 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-toān, 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-toān, 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-toān's plan of operations, now moved his fleet of boats close along the western bank of the Erówadi 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-toān, 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-toān 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-toān, and at the same time the garrison of Kaung-toān 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-toān 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 Thin-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-gyih Mań-tsi'-thu', having arrived at Mó-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-gyih 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-ló-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-gyih 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-gyih 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-ló-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 Mó-gaung and Santa is said to be only five or six days' journey.

† For the Shan word Nán, 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 Wûn-gyîh, 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 Nûn-nyen, whilst the Wûn-gyîh attacked it in front. The Wûn-gyîh 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 Wûn-gyîh crossed the Nûn-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 Lîzô mountain; but the Wûn-gyîh here again attacked them, and completely routed their army, 100,000 men of which fled to Santâ and there threw up new works. The Wûn-gyîh halted his army at Maing-lâ, in order to recruit it.

The Wûn-gyîh 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-mô water force, to go and relieve the Wûn-gyîh, and with orders to attack and destroy the Chinese army, and then take possession of the eight Shan towns, Hôthâ, Lûthâ, Mônâ, Tsandô, Maing-mô, Tsi-guen, Kaing-mûh, and Mô-wân. The Let-we'-weng-dô-mhu' proceeded with his ten divisions from Ba-mô and joined the Wûn-gyîh's army at Maing-lâ, and soon after advanced and attacked the Chinese force at Santâ under general Thêng-tâ-lo'-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 Wûn-gyîh Mahâ Thî'-ha-thû'ra, who had been sent with an army by the route of Lû-ta-tsây-nhût-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 Theiani, and one-third only of these Chinese escaped into their own country. The Let-we'-weng-dô-mhu' and the Wûn-gyîh Mahâ Thî'-ha-thû'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'-tā lō-ye', entered the Burmese dominions by the Theināi route, accompanied by the ex-Tsō:buāh of that place, Nga-aung-duōn; 100,000 men were sent at the same time against Ba-mō by the Thinzá-nay-lein route. On this Chinese army attacking Theināi, 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 Thibó road, whilst the other general, Tsu'-tā-lō-ye', having placed a garrison with the ex-Tsō:buāh in Theināi, 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 Tsō:buāh of Thibó, the king appointed 30 divisions, consisting of 30 war elephants, 3,000 horse and 30,000 foot, under the command of the Wūn-gyiē Māhā Tsī'-thū', to go and meet the Chinese army advancing by Theināi and Thibó. 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 Wūn-gyiē Māhā Thi'ha-thū'ra, marched by Shue-zā-yan*, up Nyaung-ben-gyiē and Pō-gyō, towards the rear of the advancing Chinese army, in order, after intercepting their communications with Theināi 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-dō-mhu', with orders to advance by the Mōmeit road, and attack the rear of a Chinese force which was advancing by that road†.

On the Wūn-gyiē Māhā Tsī'-thū' arriving at Ban-gyi‡ beyond Thibó‡, he sent forward seven divisions of his army which fell in with the Chinese and were driven back. The Wūn-gyiē 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 Thibó, 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 Peenge and Chiibo.
§ Symes's Goup-toung-taung is a hill or mountain in Burmese, and Gout mountain is near Thibó, and not Bamó.
general assailing the Wün-gyih 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 Wün-gyih 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-thek-kay-byen. The Wün-gyih 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-thek-kay-byen; and that he had taken post at Lońgá-byen-gyih. 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 Wün-gyih Mahá Thi'-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-gyih*, 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 Wün-gyih fearing to divide his force, ordered the Tsit-kê-gyih to fall back, but the latter, being of opinion that his retreat from the immediate vicinity of the enemy would encourage them, and make them believe that the Burmese force was inconsiderable, urged the Wün-gyih 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 Wün-gyih learnt the Tsit-kê-gyih'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-gyih'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 Wün-gyih followed the enemy, and attacked and drove them out of Lá-shí or Lá-shyó, where they had stockaded themselves; and again out of Kyú Shyó, until they took shelter in Theinní. The Wün-gyih 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.
loān-dū: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'-tā'-lō-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 Theinni 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 Thi'ngya'-mēn: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-mhū, who had marched by the Mō-neit road, arrived with his ten divisions, and joined the Wūn-gyīh Maha' Thi'ha-thu'ra before Theinni. The Let-wé-weng-mhū proposed to the Wūn-gyīh to let him march on at once with 30 divisions, and fall on the rear of the Chinese advanced force near Thibō; but the Wūn-gyīh was of opinion, that the Chinese near Theinni should first be disposed of, and believing that the town of Theinni, in which Shans and Chinese were intermingled, could be more easily carried than the Chinese works outside under their general Tsu'-tā'-lō-ye', the Wūn-gyīh stormed Theinni with three divisions of 10,000 men each, and captured it with the whole of the Chinese magazines. The ex-Tsō:buāh, 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 Wūn-gyīh Maha' Thi'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 Nān-beng river, from the south of Theinni from Kyauk Koān on that river to the east of the town, covering at the same time the Nān-tū 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 Wūn-gyīh 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'-tā'-lō-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 akyā, or in composition gyā, 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-tsoun-ye', Yi'n-ta-yi', and Kuen-lo-ye' were also taken prisoners with their chargers.

The Wun-gyi'h Mahá Thi'ha-thu'ra then, leaving a strong garrison in Theinni, advanced against the Chinese army under Myeng-koun-ye'. The other Wun-gyi'h, Mahá Ts'i'-thu', who had posted himself on Loüngá-byen-gyi'h, 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 Thoän-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 Wun-gyi'h 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 Wun-gyi'h, 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 Theinni had arrived in his rear, deemed it prudent to fall back with the whole of his 30 divisions of 10,000 men each. The Wun-gyi'h 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 Theinni, and on arriving at Maing:yoän and Maing:ya'n, took post on the top of a hill. The Wun-gyi'h Mahá Ts'i'-thu' in the pursuit of the Chinese met the other Wun-gyi'h Mahá Thi'ha-thu'ra advancing with his force, at Naung-bó to the westward of Ló-shyó. The two armies united and marched towards the Chinese general at Maing:yoän and Maing:ya'n, but as soon as he heard of their approach, he fled into China. The two Wun-gyi'h'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 Thinzú-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 Yuan-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'-th'ha-thu', to Mō-gaung, by the route to the westward of the Eráwadi.

Three days after, another force amounting to 52,000 men under the Wún-gyih Mahá Th'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 Tsó:buáh and Kyóden:yázá, by the road to the eastward of the Eráwadi.

The three Chinese generals, on reaching Yógi mountain to the north of the Lizó, detached 10,000 horse and 100,000 foot under the Kyen-ngan officer, Tsheng-ta'-yi'n, to advance by the Mō:gaung road, and cutting timber and planks in the most convenient spots, brought them to the bank of the Eráwadi, and left the general Ló-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-toán, and leaving 100,000 foot and 10,000 horse to defend them under Yuan-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-toán towards the land side. 500 boats also, as soon as they were built in the upper part of the Eráwadi, were brought down and placed with 50,000 men under Yi-tá-yi'n, the governor of Thú-kyeng, so as to invest Kaung-toán on the river face. Kaung-toán was repeatedly attacked by the Chinese by land and water, but its governor, Bula Mén: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 Eráwadi, 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-gyi'h Mahá Thi'ha-thu'ra, who was advancing with the water force from Ava, heard that the Chinese were closely besieging Kaung-toán, he ordered Tsá'n-lha-gyi'h, DHAMMATÁ, BINÁ 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-toán a supply of ammunition and provisions. These four officers attacked the Chinese boats in front of Kaung-toán, and after defeating and driving them off, and capturing many, succeeded in relieving Kaung-toán. Tsá'n-lha-gyi'h then stockaded himself with 5,000 men in the rear of the Chinese besieging force, on a spot to the south of Kaung-toán, and north of the mouth of the Tsín-gan or Tsín-khan river, whilst DHAMMATÁ and BINÁ 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 Eráwádi, opposite to that on which Kaung-toán stands. The Chinese water force returned to its former position in front of Kaung-toán, and 40 or 50,000 Chinese made an attack on Tsá'n-lha-gyi'h's stockade, but being unable to carry it took post round it.

The Wún-gyi'h being joined at Tagaung and Malti 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-gyi'h himself then advanced with his boats, and on arriving near Kaung-toán, took post near the island opposite that place, towards the western bank of the Eráwádi. He then ordered 1,500 horse and 15,000 foot, under the Shye-weng-mhú* and Teingyá:men:gaung, to cross over and land on the eastern side of the Eráwádi, and, marching round the rear of Móya 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 Mó:gaung under the Amyauk-wún, after placing Mó: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 Tšeng-tä-lö-ye', which had been detached towards Mó-gaung, had halted on the east bank of the Eráwdi, near Naung-tå-lö 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 Eráwdi.

The Shye-weng-dô-mhú, having crossed the Eráwdi 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 Maung: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:mei, having put that town in a state of defence and placed in it a strong garrison with its Tsò:buáh, was advancing towards Kaung-toin 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 Yö-tá-yr'n, the governor of Lhyin-yr'n, to meet the Let-wé-weng-mhú, and another force of the same strength under Kó-tá-yr'n, to meet the Shye-weng-mhú.

As the Let-wé-weng-mhú was advancing from Mó:mei and had crossed to the northward of the Tšin-khan river, he fell in with 5,000 Chinese horse which were preceding the Chinese general Yö-tá-yr'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 Tšin-khan river.

The Shye-weng-mhú also fell in with the Chinese force sent against him at a spot beyond the Nún-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 Nún-ma-bné 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-toün 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:nøngy-bala, to the west by seven regiments under the Let-wé-weng-mhú, and to the north by six regiments under the Lán-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-toün 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-toün; whilst the Shye-weng-mhú with ten regiments took post on the bank of the Lén-ban-gya river, opposite to Mó:yi village, and eight miles distant from Kaung-toün.

The Wún-gyiñ then sent eight divisions of his fleet under the M̱ek-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-toun*. This attack succeeded; but the Burmese having returned to the Wûn-gyîh 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 Wûn-gyîh’s army then opened a communication with the garrison of *Kaung-toun*, and the Wûn-gyîh sent 10 regiments under *Men:ye'-zrea-gyo* to cross the *Erûwadî* below *Kaung-toun* to the eastward, and post themselves along the *Tsîn-khan* river to the south east of that town, so as to communicate with *Naung-byît*, where the Lêt-wê-weng-mhû was stockaded. The Wûn-gyîh also sent ten regiments under *Men:ye'-yân-naung* to cross the *Erûwadî* above *Kaung-toun*, and to place themselves along the *Len-ban-gya* river to the north of that town, so as to communicate with *Moyû*, where the Shye-weng-mhû was posted. The Wûn-gyîh 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 *Erûwadî*, 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 *Yvon-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 Tsò:buáhs of Theinní, Bó-mó, Mó:gaung, and Kyâing:yoûn having come and invited us. We will deliver up the Tsò: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 Wín-gyûn 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, Lâ-thá, Mó:dá, Tsandá, Kuing:mâh, 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, Lâ-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:myûn and Kyeng-thi. (Kyang-sî?)

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 *Erəwədī* 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'-myā:yen*, king of *Pegu*, only came as far as those towns of *Hō-thā, Lā-thā, &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-yē' and Akoun-yē',* (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 *Hō-thā, Lā-thā, &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-thuong, 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-gyih 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-gyih, to beg of him to fix the day on which certain officers of the two armies should meet and discuss the matter. The Wún-gyih 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-toán. 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-ma há-thura. The Burmese demanded, that the Tsó:buáhs of Theinni, Bu-mó, and Mó:gaung should be immediately made over to them. The Chinese said, that these Tsó: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-toán. 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-toūn, 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-toūn. 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-toūn. 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 Wûn-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 Wûn-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:buâh of which, they heard, had been fortifying himself again. In January, 1770, therefore, the Burmese army crossed to the westward of the Erâwâdi at Kaung-tó'un, and marched to Manipur, and although the Tsô:buâh 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:buâh 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 Hê'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 Wûn-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 Myît-ngay, which joins the Erâwâdi near the north-east angle of the city of Ava; and two other Wûn-gyihs 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'-koun'-ye' and Akoun-ye', returned and reported to the emperor of China, that having made peace with
1837.] Some account of the Wars between Burmah and China. 149

the Burmese at Kaung-toän upon these conditions; namely, that the Tsō:buāhs of Theinni, Ba-mō and Mō:gaung, subjects of the king of Ava, should be surrendered at Theinni; 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-bō and Kyin:men:ti'hu'a, had much distinguished themselves. The emperor of China was greatly pleased and desired to promote those officers; but two of the imperial kinsmen, Ha-ša-yn and Tshi'n-ta-ya-yn, with two Tartar nobles, the governors of Atsī:kyain and Maing:thōn, submitted that they should first be allowed to go down to Mō:myin and see how far the statements of the Kue-chow-bō were founded in truth. These four individuals accordingly came down to Mō:myin and sent a letter to the Burmese governor of Kaung-toăn, 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-bō to go down himself and see how the matter could be settled.

The Kue-chow-bō came down to Mō:wan with upwards of 1,000 soldiers, and sent a very civil letter to the governor of Kaung-toăn, 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 Atsī:kyain and Maing:thōn, by order of Ha-ša-yn and Tshi'n-ta-ya-yn. The governor of Kaung-toăn immediately complied with this request; and on the Kue-chow-bō perusing the letter, which had been sent to Kaung-toăn, 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 Ha-ša-yn and Tshi'n-ta-ya-yn, with the two Tartar nobles who had written the letter, to be sent up to Pekin in irons. Ha-ša-yn 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-mō, Kaung-toăn, 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 Tuckey'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 Hyalaena, merely from the strong analogy which the substance of the shell bore to that of Hyalea, 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-triangulæ hastiformi, faciebus utrisque transverse sulcatis, superiori triradiatâ, radiis convexis, approximatis ad marginem superiorem provectum undulas tres formantibus; facie inferiore medio convexâ, abbreviatâ; marginibus lateralisibus lœvibus unisulcatis, sub-bicarinatis.

Long. 0.65, Lat. 0.5 poll.

Habitat in Oceano Indico Australi, non procul ab insulis Amster-
dam et Sancti Pauli dictis.

I took the shell on the night of the 28th November, 1834, in S. lat. 36° 30', and E. long. 75° 30', in company with *Janthina exigua* and another small flat spired species, *Cleodora, Hyalea*, a small *Cepha-
lodote* 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 *Hyalea* 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 Colvyn'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 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 Nāhan just before I left Dādāpur. 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

Note on the Hotspring of Lohand Khad.

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 Didúpur and east of Núhan, 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 Khalûr and Hanâr territories. Lohand Khad forms the boundary between these two States, and flows into the Satlaj near Kiralpûr 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 Khalûr râja 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.]
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 comprises 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 Gulistan, supposed to have been copied for the emperor Aurangzeb at Bijipur, 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 Bridgewater Treatise, Geology and Mineralogy, Vols. I. and II.


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 Hindustani.


1 ditto, ditto, ditto, ditto, ditto, in Hindustani.

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.
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 Hughli College, intimated that he was desirous of forming a museum in connection with the Hughli 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.

<table>
<thead>
<tr>
<th>Co.'s Rs</th>
<th>1 Gold coin of Mahendra Gupta</th>
<th>Dekkany gold hoons</th>
<th>Modern gold coins, chiefly Nipalese</th>
<th>Indo-Scythic coins, including some rudely executed base gold coins</th>
<th>Grecian, Arsakian and Sassanid coins</th>
<th>Musalmán and Nipalese silver coins</th>
<th>Musalamán pice, all exceedingly common, except a Mahmud</th>
<th>Dekkany pice—mostly modern and wanting inscriptions—nearly worthless</th>
<th>Small silver coins, punch marks and Varâha series, all bad</th>
<th>Chinese and Japanese coins</th>
<th>Continental silver coins</th>
<th>Roman coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>30</td>
<td>60</td>
<td>25</td>
<td>50</td>
<td>50</td>
<td>30</td>
<td>11</td>
<td>5</td>
<td>25</td>
<td>25</td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>

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 statis-tical 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 obliga-

tion. 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-

1837.] Proceedings of the Asiatic Society. 167

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, show, 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.,

Calcutta, 23rd February, 1837.

Physical.

A very large stuffed specimen of the Ornithorhynchus 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.

John Bell.
Fossil Shells of the Chari hills in Cutch.
Proceedings of the Asiatic Society.

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 Bhoj, the same shelly conglomerate, containing a variety of bivalves, 11, 15 and 16; pecten 16 and 17 (arca?) 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 Techia; 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.
    Pseauh island; sandstone and coarse pebbly conglomerate, yellow limestone and gypsum, as before.
    Nairra; a basaltic grit.
    Tralow, six miles N. W. of Bhoj; 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).

Jerañar; 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.]
<table>
<thead>
<tr>
<th>Day of the Month</th>
<th>Old Stand.</th>
<th>New Stand.</th>
<th>Hair at 10 A.M.</th>
<th>Calculated Humidity</th>
<th>Hair at 4 P.M.</th>
<th>Calculated Humidity</th>
<th>Temperature of water at 10 A.M.</th>
<th>Wind</th>
<th>Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30.06</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>2</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>3</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>4</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>5</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>6</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>7</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>8</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>9</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>10</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>11</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>12</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>13</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>14</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>15</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>16</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>17</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
<tr>
<td>18</td>
<td>30.14</td>
<td>30.14</td>
<td>59.9°</td>
<td>1.6°</td>
<td>59.9°</td>
<td>1.6°</td>
<td>29.896</td>
<td>80.9</td>
<td>1.6°</td>
</tr>
</tbody>
</table>

Mean, 30.14, 74.0, 7.2, 7.3, 59.9, 1.6. 29.919, 81.9, 14.3, 14.6, 60.1, 43, 43, 71.5, 73.0, 1.00.

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. De Schlegel 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 jinns, (both believers and accursed,) gholis, 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 plagiairy by
anachronisms, an expression in the story of the fisherman and the
jinn in the Macan MS. may be cited, not inopportunely, 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 Vicrama-
ditya; 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 anachro-
nous. 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 prin-
cipal 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 solu-
tion 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 sorties 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

*اذ اعشت لم انصح وإن سو فلعلذو
ذوى البصم من بعد ي بكل لسان
نصحت فلم افلح و خا نوا فافلحو
وا ركين نصحت لدا ر هؤ 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 ufreed, 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 por-
tion 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,
them head will speak with you, and give you answers to every ques-
tion 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 ummeers 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 flow-
er 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 throw 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 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. Dr. 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 Mithan-kot by the river Satlaj, on his Mission to Lahor and Bahawulpur 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 banias; 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 ghát 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 Fatteh Singh Alawalla. We remained there on the 9th in expectation of the arrival of a party of Mahá-rája Ranjit 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, Batolpur, Machiwara 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 nulas,
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 Beas; 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
circuits 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, Máchiwâra and Fâbor; the two first lie in the route from Jágaâdi on the Jumna to Amritsir, and a considerable traffic passes by them. There may be sixteen boats at Râhon and eight at Máchiwâra. The ghât at Fâbor has upwards of fourteen, and is also much frequented, lying in the direct route from Ambîla through Lodiana to Amritsir or Lahûr. 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 Mâlk 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 jhari 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 today, 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 Rajús, who claim descent from Rás. Hospál and Jagpál. Their ancestors were converted to Islamism some five centuries ago by Hazrat Sháh Kátal Chísimo, one of the descendants of Hazrat Sheik Farid, the famous saint of Pák Patan. His relics are deposited somewhere between the villages of Talwári and Sheik Chísimo 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 Rajput 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 Mandot 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 Jagrión, the portion of this extensive territory which still remained in the possession of Rai Ahmad's family was subjected to that conqueror, and Jagrión 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. Jagrán, the Dár-ul amal, is about 10 miles inland from Bhoundri.

On the 11th we left Bhoundri. 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 Khat 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 Bhamil and Sálampur, when the river again doubled round a point, and the deep channel brought us under the village of Sidkuan 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 jal kawé, 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 ghat 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 Ranjít 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 Sheffipura, 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 Shah’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 Lahor. It was taken from the descendants of Rai Ahmad Munj (after they had been driven from Mamdot by the Pathán family of Kusur) by Ranjít 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 Tariwila, 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 Miśne and Rerá 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 Punidín where the river is again broken by shoals and sand-banks. The next reach brought us near Fattehpur, from whence, leaving Jhánídn 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 Dharam-kot belong to Mahá-rajá Ranjít Singh, who has a small detachment of cavalry there and a fort; those in the Fattegharh district are held by Sher Singh Bandeich, a thanadar under the Mahá-rajá, 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 jāghirdár. 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 Fattegharh district, now held by Sher Singh Bandeich as thanadar. The lands are khálisa (or rent-free). Fattegharh and the neighbouring country formerly belonged to Tara Singh Ghaiáb 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 "Ghaiáb" (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 Andrisa, 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 Lahor 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 Harí Singh, the same person who had held it under Tárá Singh Ghaíba. At a subsequent period Harí 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 Fitteh Singh Alawalla, Sirdar Chot Singh of Kot Kapara, and Qutub-u'-dín Khá'n Kasária, the Pathán chief, whose family are now in possession of Mándót. It was not thought expedient to comply with their wishes, and they were directed to return to their allegiance to the Khálśa Jí. Sirdar Harí Singh dying soon after, the territory of Fattehgarh was taken possession of by the Lahór chief, and has since continued to be khálśa land.

On the 14th we left Maháraj-vála. The river pursues a very winding course from this place till it passes between Mundhiála on the right and Wála Kúlí Ráon on the left hand; from thence it runs in a straight direction past Asappura Tibbi and Pipal on the right, and Malha Jungh Lúlu-vála and Tibbi Kusainá-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 Pipal we came in sight of the right bank of the Beāh or Beās, 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 Beās and Satlaj we passed a small river on our right, near the village of Andrisa. 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 Belāspur at a place called Ghar Shankar, and in its course through the Doāb Bist Jalindar, passes between Phagwāra and Jalindar; from thence southward to Dakhī kā Sarāi, and south-west to Nakodir. From Nakodir its direction is west to near Sultānpur, when it turns to the south and enters the Satlaj below Andrisa. 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 Beās joins the Satlaj about two kos below Andrisa. 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 Pipal, 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 ghāt of Hari-ke, carrying with it the water of the Beās. The large branch to the left runs under a high bank past the village of Bhidan-wāla. The ghāt at Hari-ke is near three miles below the present junction of the two rivers. The village itself and chhāoni are on the top of the high bank at a distance of a mile and a half across the sand from the ghāt. 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 Bhidan-wāla 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 ghāt. 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 ghát generally occupied from fifteen to twenty minutes.

Nearly the whole of the trade of *Affghánistán*, Kashmir and the Panjáb with Hindustán, and by Bombay and Calcutta with Europe, passes by this ghát. 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 *pogris*, manufactured in the *Doíb Bist Jalindar* at Ráhon, Phagwára and Hushiarpur, which are in greater demand in the upper part of Hindustán, pass also by this route.

I was unable to ascertain the average amount of daily collections at the ghát, 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 ghát munshi, shews the rate of collection on the left bank.

<table>
<thead>
<tr>
<th>Description of Articles</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain loaded with grain</td>
<td>0 5 0</td>
</tr>
<tr>
<td>Ditto ditto with salt</td>
<td>0 5 0</td>
</tr>
<tr>
<td>Ditto ditto with <em>gund shaker</em></td>
<td>0 7 6</td>
</tr>
<tr>
<td>Ditto ditto with <em>shakartari</em> and first kind of <em>kirana</em></td>
<td>3 0 0</td>
</tr>
<tr>
<td>Ditto ditto with cloth</td>
<td>4 11 0</td>
</tr>
<tr>
<td>A large tóri gárt, loaded with any description of articles, except grain</td>
<td>1 15 0</td>
</tr>
<tr>
<td>A gárt load of grain to merchants</td>
<td>1 5 9</td>
</tr>
<tr>
<td>Ditto to brahmins, to <em>faqirs</em> and <em>bhais</em></td>
<td>0 13 0</td>
</tr>
<tr>
<td>Ditto to a maund of coarse <em>kirana</em></td>
<td>0 1 9</td>
</tr>
<tr>
<td>Ditto to a maund of <em>pushmina</em></td>
<td>4 1 0</td>
</tr>
<tr>
<td>Ditto to a maund of opium and indigo</td>
<td>2 0 0</td>
</tr>
<tr>
<td>Ditto to a donkey load of grain</td>
<td>0 1 3</td>
</tr>
<tr>
<td>Ditto to a bullock or pony load of grain</td>
<td>0 1 9</td>
</tr>
<tr>
<td>Ditto to a gárt load of salt</td>
<td>1 13 0</td>
</tr>
</tbody>
</table>

At Jáné-gill, 12 miles below Hari-ke, the united streams of the Béas and Satlaj are called the Ghara, but known to the natives by the name Náí. Between Hari-ke and Firozpur are the gháts of Hamad-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 Khorásán and *Affghánistán* which enters the Panjáb at Dera Ismael Khán, crosses the Satlaj at these gháts. The roads by which the
trade passes from them and from Hari-ke are much infested by rob-
bers. 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 arrange-
ments 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 Feroz 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 Gujár 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 Ambala, and it was ultimately decided in her favor by a reference to the Shaster law.

The Kaggar river, from which Firoz Shah 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 Ambala 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 Bhatner frontier it went by the name of Sotre, and its direction through the desert to near Dilawen, where it was lost in the sands, may be traced by the forts of Suratgarh, Chehargarh, Phulra 1st, Phulra 2nd, Mohgarh, Marrath, Rukanpur, 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 Sukrì 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 swarthiness 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 ryuts, 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 1½ 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 ghāṭ of Bare-ke. Bare-ke is in the direct road from Firozpur through Kasur to Lahōr, 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 ghāṭ, 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 hardiness 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 chace. 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 ghát, 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 Futtuévála 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 11½ 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 Debalpur 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 Báwuni
of Sarhind fell into the possession of these adventurers, Sobhá Singh Kuahre, one of the three joint rulers of Lahore, overran the country and bestowed it in jaghir on one of his followers, Kapur Singh Thoga. This person repaired the fort and held undisputed possession for a long period; he extended his territory as far as the Bahawalpur and Khair 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 Kapur Singh, who continued in possession. At a subsequent period Rai Ahmed Munjh expelled Kapur Singh from the country and established himself at Mallowed. 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 zamindars, fearing a return of their old enemies the Sikhs, sent a deputation to wait on Nizám-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.

Nizám-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 Nizám-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 Lahore, 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 Satlíj, 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 jógír 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 baníahs 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 gélan, nakhud, chola, kangani, munj, barrera, masson and jo-chana, which are reaped in the spring, or during April and May. The garden vegetables of that season
are benghan, kire, chulai såg, turkakril, tarbuze, korbuz, khurja chaka. Tobacco is also grown in small quantities. In the spring and as late as June are sown nai shaker or sugar-cane, máki, júar, músh, mung, moth, kanjad or til, bújra, pambrzár; and the vegetables are turnips, carrots, spinach, sohi, gandana or leek, gandalon ká såg, karam kí såg, 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 ghát 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 11½ 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 ghát, at which there were two boats.

On the 16th at Ladhu-ke, estimated distance by the river 7½ 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 Jaggeré, estimated distance 15½ 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 zamindars 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 ghát 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 Jaggeré we found Nawáb Ghulám Qádir Khán, the mehmán-dár 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, baiiah-looking person, whose manners, if not highly polished, were frank and
Lodiana to Mithankot by the Satlaj river.

189

unaffected. He was richly dressed in cloth of *khimkâb*, with a handsome *lungi* 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 Nawâb spoke a very intelligible Hindustâni, but the language of his followers was quite foreign to us. It differs from Hindustâni, 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 Panjâbî of the hawling Sikhs. We were better pleased with the boatmen of the Bahdwalpur 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 Bahdwalpur 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 7½ kos. On starting from Assap-wîla we were greeted with the novel and pleasing sound of a sailor’s cheer from the crews of the Bahdwalpur 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 “Bham, 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-wâla (which begins from Rana-watta) and entered that of Gurjiana or Fatehgarh about four kos before we arrived at Bunga Jawân-ke.

The country from Rana-watta to Gurjiana was formerly taken possession of by Laina Singh, one of the joint rulers of Lahor. Mahâ-rajâ Ranjit Singh subsequently took it from Chet Singh, the son of Laina Singh. It was afterwards held by Bhai Lâl Singh, and taken from him by Qutub-u'-din Khân, who annexed it to the Mândot territory. About three years ago, Bahâwul Khân, called barâ Bahâwul Khân, in distinction to the present Khân, conquered it from Qutub-u'-din Khân, since which time it has remained annexed to the Bahâwalpur 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-wâla, 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 Musâferan-wâla, about two kos before we arrived off Bachian-wâla.

A few bricks of an enormous size were picked up at a village on the way down, (Bharâm-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 Bahâwalpur. 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 Pâkpatan, 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 Sheik Farid-u'-Din, to which circumstance it owes its present name of Pákpatan, 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 Amír Timour in his invasion of Hindustán, 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 Pákpatan is the old bed of the Beús, 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 Humadpur Dar Behli, fifteen kos above Neh.

To the south of Pákpatan 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 Pûkpatan 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 Shâkarganj* in the town of Pûkpatan. 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 burkhd, 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 maqbarâ, 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 door-way are considered saved from the fines of perdition. The door-way 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 door-way, 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 chapâti. 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 Panjâb which has reference to this story.

The ancestors of Shekh Farid-u’-din first came to Multân in the

* See some account of the same saint by Munshi Mohun La’î 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, (Shaha'b-u'-din.) When Hazrat Jala'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 Múltán, and afterwards spent many years in travel. At Múltán he became celebrated as a Sáheb Karúmat, 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 Sháhar-ghanj. Hazrat Shekh Farid-u'-din Shákarganj 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, Sikru, 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 Níer-u'-din) the birth of his son Jehángrí. In the early attempt of the Sikhs to lay waste the country between Múltán and Lahór, one of the descendants of Shekh Farid-u'-din at Pákpatan 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 Pákpatan 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 Pákpatan; besides which, they have a fourth share in four small villages in the neighborhood.

On the 27th to Tóba Sádít, in the district of Musá-firan-wálu, 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 Shíh Farid, and entered the Húsílpur 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 8½ 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 Ránu-watti near the Mamdot and Baháwalpur frontier the signs of cultivation gradually disappear; and near Pákpatan 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 Húsílpur 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 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 Pákpatan 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. AtLOADI-KE, below Mamdot they are succeeded by the Wattu Karral Chishti and other branches of the Jat tribes, descendants of the Rajput shepherds, who formerly inhabited the country on the Ravi between Multan and Lahor. These people still lead a wandering pastoral life, seldom building anything but temporary sheds, and may fairly challenge the name applied to them of "khâna badâsh." 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 hardines 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 sâlahang, 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 sâlahang 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 twelves 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 encourage-
ment 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 inter-
vention 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 11½ 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 10½ 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 Sarfaraz 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 Mir Bakhshi, 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 Baha'wal Khán's terri-
Lodiana to Mithankot by the Satlaj river.

197 tory on that side. It once boasted a very strong fort, but from the time this territory was first threatened by the Siehks it became the policy of the Bahá'wálpur 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 Bahá'wál Khán. Small káfílas occasionally arrive here from Hánsí 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 páká 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 Baháwál 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 rāja.

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 jarīdā-tor, and only becoming a shikāri 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 Āfghānistān 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 shikaris have this intimate knowledge of the desert, is proverbial:—"they know it better than the scholar his book, or the Hāfiz his Korān;" 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 Nawāb's preserves and jungles near the river, do not apply to the desert, where the shikaris 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 kāfir Sikhs, if we would allow him to cross the river." The Khān, 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 Khān, they called him simple Baháwal Khán or Khán, 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 darbári 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 fíes which accompanied it. The battalion mustered about three hundred firelocks; besides these, there were two small pieces of artillery with a few guldánás dressed in red pagríś, brown vests, and blue cossack pájjámas. 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 Göth Nur Muhammad; estimated distance by the river 8½ kos. The Khairpur district extended for two-thirds of the way, when we entered that of Göth 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 Göth Qáim Ráís, twelves miles beyond, and the other moves alternately from Gurjiána to Múbárákpur, but resides chiefly at the latter place. In harvest time, muháris or muháris 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 anything 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 “trímai” 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 Múbárakpur, 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 Darpur. 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 Báká, 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 4½ kos. The river narrowed extremely during the two last days' journey. The banks have become very low and the current sluggish, running about 1½ 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 Cabul. 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 Márwar 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 Gházi Khán, and is connected with the Jews of Bokhára and Kaub 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 Kaírpur, 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 gusāin who enjoys some consideration with the Nawāb, 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 Nawāb and the other great men of his court, but this they owe to the indolence and ignorance of their masters, which quite unfit them for the tiresome details of business.

On the 25th we again started in our boats from the Bindra-wāla ghāt at Bahāwalpur to proceed to the junction of the five rivers of the Panjāb with the Indus at Mithankot.

We arrived sometime after nightfall at Nahur-wālī; estimated distance from Bahāwalpur 11½ 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 1½ 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 Jāt origin, mixed with a few Dāudpūtras and Baloches; they are not generally addicted to predatory habits, but the dismemberment of the Khān'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-wālī we came to a heavy jhau jungle on the left bank, one of the Nawāb'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 Nawāb. 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 musáhíbs (courtiers) partake of the meal with him, and inferior fare is distributed to the whole of his attendants. Even down to the säises 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 horsemen 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 kuna 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 chabutrá, 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 chabutrá 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 Makhanbelá, the ghát 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 Ghóra 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 Ghóra. The Nawáb when residing at Ahmadpur or Diláwar sends to this ghát for a weekly supply for his household, which is conveyed on hackeries in large brass vessels.

The breadth of the Panjnad 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 Bokhárian 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, Rája Sháh, from the apparently harmless austerity of their lives. Among the number of these devotees was Shekh Syed JáláL, who was gifted with the power of performing miracles, by which many were convinced of the truth of his doctrines.

Rája Sháh was one of the first of his converts, and giving up all worldly affairs, he made over his territorial possessions to the Pir 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 Bokhárian. Among these was a chief of the tribe of zemindárs called LalúS, who inhabited the country in the neighborhood. On the conversion of their chief the LalúS followed his example, and on his death built a sepulchre to his memory, round which they formed habitations; hence the Uch of LalúS, the Uch of the Moghuls, and the Uch of the Jumals, were also named by the Pir after two of his favorite disciples, who died of the austerities which they practised, and were buried there.
We visited the tomb of the Pir Sheik Syed Jalal Bokhari. 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 Afghanistan and the Derajat by passing down the Indus, frequently come thus far out of their way from Mithankot to visit the shrine of Sheik Syed Jalal, and implore his intercession for the safety of their journey. A descendant of this Pir 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 nazims of Multan, and since then by the Daudputra 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 Bhokhari 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 tops of date trees. Hazrat Sheik Muhammad Ghos Jila'ni', round whose shrine this town was built, and after whom it was named, was descended from Hazrat Sheik Abdul Qadir Jila'ni' Baghda'di', and came to Uch about the year A. D. 1394. The Daudputras have continued to be his murids and the murids of his successors from the time of their first leaving Shikarpur.

This Pir's family had considerable assignments of lands in the vicinity of Uch before the arrival in the country of the Daudputras, and up to the time of the 2nd Baha'wal Khan their territory and wealth had continued increasing, and Makkum Gang Buksh, who was then the Pir Murchid, was second only in influence to the Khan, 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 Makkum Gang Baksh, headed a revolt of the Daudputra tribes against the second Baha'wal Khan's in 1799, and releasing Bahawal Khan's son, Mubarak Khan, from confinement, set him in opposition to his father. The Khan besieged him in the town of Uch, destroyed the fort, and laid the town in ruins, and obliged the Pir with his son to flee to the territory of the Amirs of Sind. The lands belonging to the Pir's family were on that occasion forfeited to the state, and have never been restored. A few years since a grandson of this Pir returned from the Sind country to take up his abode at Uch, and six or eight wells have been allowed by the present Khan for his subsistence.
On the 2nd March to opposite Núrwlá; 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 over-flowed, 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 Panjnad 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 qáisids, messengers with letters, were formerly in the habit of leaving Multán or Derá Gházi 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 Gházi Khán and Shikápur, 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 Panjnad 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 Panjúb 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 Shikápur.
### Journal of a voyage from Lodiana to Bahudwalpur by the rivers Satlaj and Ghara

#### Villages on the left bank.

<table>
<thead>
<tr>
<th>Length of Stages and date</th>
<th>Names of Villages</th>
<th>Apart. Inland</th>
<th>Caste.</th>
<th>Jurisdiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 9th</td>
<td>Lodiana.</td>
<td>1 ½</td>
<td>M. R.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Rajoâpurâ.</td>
<td>1 ½</td>
<td>R. S.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Haibuwâl.</td>
<td>1 ½</td>
<td>J. R.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Baranalâra.</td>
<td>1 ½</td>
<td>F. S. A.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Malâkpur.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Salemâpur.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Ghanspûr.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Horâbar.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Wallipurâ.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Walliâwalâ.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Talvândi.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Aliwâl.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Bhumârû.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Bhumîrû.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Chishtî.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Bhamâl.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Sidhuânan.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Shabbîpûrâ.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Abbpûrû.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Malsîn.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Harbûwâl.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Bâllû-ke.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Baghî-ke.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Bâllû-ke. (bârîî).</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Ghuruâ.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Burj.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Burj Bârâ.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Sânghûwâlâ.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Sadârêwâlâ.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Bhumîrû.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Sânghûwâlâ.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Gugg.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Hujra.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>A Ghât.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Sadhpûr.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Mâdîpûrû.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td></td>
<td>Pûrijon.</td>
<td>1 ½</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
</tbody>
</table>

**Villages on the right bank.**

- Kanmân Jât, 1 Rânî, ditto.
- Kanmeenând, 1 ½ ditto, ditto.
- Bhagîan, 1 ½ ditto, ditto.
- Thammâwâlâ, 1 ½ ditto, ditto.
- Amir Shâb, 1 ½ Sâyâd, ditto.
- Qasîmâlâ, 1 ½ Gûjâr, ditto.
- Rampûrâ, 1 ½ ditto, ditto.
- Kanjârâwâ, 1 ½ Rânî, ditto.
- Abdulpur, 1 ½ ditto, ditto.
- Bajûr, 1 ½ ditto, ditto.
- Salepûr, 1 ½ Rânî, ditto.
- Sâmûnâ, 1 ½ ditto, ditto.
- Tûhîrûp, 1 ½ ditto, ditto.
- Râmî-kê, 1 ½ ditto, ditto.

<table>
<thead>
<tr>
<th>Length of Stages and date</th>
<th>Names of Villages</th>
<th>Apart.</th>
<th>Distance</th>
<th>Caste.</th>
<th>Jurisdiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Inland</td>
<td>Kos.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pattú</td>
<td>4</td>
<td>. .</td>
<td>Ját,</td>
<td>. .</td>
</tr>
<tr>
<td></td>
<td>Taalwandi</td>
<td>4</td>
<td>. .</td>
<td>ditto</td>
<td>. .</td>
</tr>
<tr>
<td></td>
<td>Bern</td>
<td>1</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Punrán</td>
<td>13</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Jargúpúra</td>
<td>13</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Kamálpúrā</td>
<td>13</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Kákári</td>
<td>13</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S. Wastí Vehre,</td>
<td>2</td>
<td>. .</td>
<td>Ját,</td>
<td>. .</td>
</tr>
<tr>
<td></td>
<td>Jhind,</td>
<td>2</td>
<td>. .</td>
<td>Ját,</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Mandí</td>
<td>2</td>
<td>. .</td>
<td>Ját Dia-</td>
<td>. .</td>
</tr>
<tr>
<td></td>
<td>Mandhiándi</td>
<td>2</td>
<td>. .</td>
<td>Ját,</td>
<td>. .</td>
</tr>
<tr>
<td></td>
<td>Uasfúra,</td>
<td>2</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Tibbí</td>
<td>2</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Pippal</td>
<td>2</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Nakki</td>
<td>2</td>
<td>. .</td>
<td>Ját,</td>
<td>. .</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Villages on the left bank.**

<table>
<thead>
<tr>
<th>Length of Stages and date</th>
<th>Names of Villages</th>
<th>Apart.</th>
<th>Distance</th>
<th>Caste.</th>
<th>Jurisdiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Inland</td>
<td>Kos.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rákšewálá</td>
<td>13</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Singhí-ke</td>
<td>1</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Jhind</td>
<td>1</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Bhédá wálá</td>
<td>1</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Khúsá Golám</td>
<td>1.25</td>
<td>. .</td>
<td>Dogre</td>
<td>. .</td>
</tr>
<tr>
<td></td>
<td>Hexuínwálá</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Báré-ke</td>
<td>1.25</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Kilcha</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>S. Wasti ke</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Kande ke</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Villages on the right bank.**

<table>
<thead>
<tr>
<th>Length of Stages and date</th>
<th>Names of Villages</th>
<th>Apart.</th>
<th>Distance</th>
<th>Caste.</th>
<th>Jurisdiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Inland</td>
<td>Kos.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mattar Ba bul-ke</td>
<td>1.25</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Madu-ke</td>
<td>1.25</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Baje-ke</td>
<td>1.25</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Mahitam</td>
<td>1.25</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Baje-ke 2nd</td>
<td>1.25</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Dullá Mohan-ke</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
</tbody>
</table>

**Villages on the right bank.**

<table>
<thead>
<tr>
<th>Length of Stages and date</th>
<th>Names of Villages</th>
<th>Apart.</th>
<th>Distance</th>
<th>Caste.</th>
<th>Jurisdiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Inland</td>
<td>Kos.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Andresá</td>
<td>1</td>
<td>. .</td>
<td>Ját,</td>
<td>. .</td>
</tr>
<tr>
<td></td>
<td>Singhí-ke</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Chambá</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Kambóh</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Kirrían</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Harrí-ke Pat-</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Tallí</td>
<td>1</td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Gandhár</td>
<td></td>
<td>. .</td>
<td>.</td>
<td>.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of Stages</th>
<th>Names of Villages</th>
<th>Apart</th>
<th>Distance</th>
<th>Kos.</th>
<th>Caste.</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tojke-ke,</td>
<td>4½</td>
<td>Dogre</td>
<td>Mandot</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rukka backal-ke</td>
<td>4½</td>
<td>Bodelá</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9½ K.</td>
<td>Shek backal-ke</td>
<td>4½</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rulla Keire-ke</td>
<td>4½</td>
<td>Dogre</td>
<td>Batalá</td>
<td>ditto</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rehma</td>
<td>1</td>
<td>Batalá</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mohamad-ke</td>
<td>1</td>
<td>Batalá</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dulle-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Middha-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pire-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dhandhi-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shahbaz-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baghe-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Luddu-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lanna-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keah-ke</td>
<td>1</td>
<td>Batalá</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laka Botala-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bahaka Dhimur-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16th</td>
<td>Bahaka Malik-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bahaka Sakh-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lado-ke</td>
<td>1</td>
<td>Watalú</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bahaka Lash-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bodle-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bahaka Kalandar-ke</td>
<td>1</td>
<td>ditto</td>
<td>K. B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rana Waltu-ke</td>
<td>1</td>
<td>Watalú</td>
<td>A.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Villages on the left bank.**

<table>
<thead>
<tr>
<th>Length of Stages</th>
<th>Names of Villages</th>
<th>Apart</th>
<th>Distance</th>
<th>Kos.</th>
<th>Caste.</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gagan-ke</td>
<td>2</td>
<td>Joyía</td>
<td>A.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suhbán-ke</td>
<td>2</td>
<td>Watalú</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mohamad-ke</td>
<td>2</td>
<td>Watalú</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kandar-ke</td>
<td>3</td>
<td>Karral</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asafvalá</td>
<td>3</td>
<td>Chis, D. U.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jayveer</td>
<td>3</td>
<td>Watalú</td>
<td>A.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pahulwan-ke</td>
<td>1</td>
<td>ditto</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lado-ke</td>
<td>1</td>
<td>Watalú</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Madi-ke</td>
<td>1</td>
<td>Watalú</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bahaka Botala-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bahaka Lash-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17th</td>
<td>Bodle-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bahaka Kalandar-ke</td>
<td>1</td>
<td>ditto</td>
<td>K. B.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rana Waltu-ke</td>
<td>1</td>
<td>Watalú</td>
<td>A.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Villages on the right bank.**

<table>
<thead>
<tr>
<th>Length of Stages</th>
<th>Names of Villages</th>
<th>Apart</th>
<th>Distance</th>
<th>Kos.</th>
<th>Caste.</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bahbul-ke</td>
<td>1</td>
<td>Dogre</td>
<td>M. K.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mohmann-ke</td>
<td>1</td>
<td>ditto</td>
<td>D. U.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Khugg-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jhuggian-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Panj Girain-ke</td>
<td>1</td>
<td>Dogre</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lakk-ke</td>
<td>1</td>
<td>Faqir</td>
<td>K.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ajejwalla-ke</td>
<td>1</td>
<td>Mokul</td>
<td>Ját,</td>
<td>ditto</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bhalil-ke</td>
<td>1</td>
<td>Dogre</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sarwan-ke</td>
<td>1</td>
<td>Hambá</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Khaan-ke</td>
<td>2</td>
<td>Hambá</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Khandan-ke</td>
<td>2½</td>
<td>Hambá</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Khana-ke</td>
<td>2½</td>
<td>Hambá</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Piri-ke</td>
<td>1</td>
<td>ditto</td>
<td>ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nur Mohammad-ke</td>
<td>1</td>
<td>Rupal</td>
<td>Dogre</td>
<td>ditto</td>
<td></td>
</tr>
</tbody>
</table>

Villages on the right bank.

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Length of Stages and date</th>
<th>Apant.</th>
<th>Inland</th>
<th>Caste.</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wásti Az-</td>
<td>29th</td>
<td>1</td>
<td>Wattó</td>
<td>C.</td>
<td>ditto</td>
</tr>
<tr>
<td>mat-ke,</td>
<td></td>
<td>2</td>
<td>Bodde</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Walli Sháh,</td>
<td>31st</td>
<td>1</td>
<td>Téji Ját</td>
<td>M.</td>
<td>ditto</td>
</tr>
<tr>
<td>Mahár,</td>
<td>32nd</td>
<td>1</td>
<td>Mahar,</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Thakkar,</td>
<td>51st</td>
<td>2</td>
<td>Wattú</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Thakkár 2nd,</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Wásti Ban-</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>de-ke,</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Kilke,</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Wásti Khajú-</td>
<td></td>
<td>21st</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>ke,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wásti Dari-</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>L. W. H.</td>
<td>ditto</td>
</tr>
<tr>
<td>ke,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durraj-ke,</td>
<td></td>
<td>3</td>
<td>Karral</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Jlie-ke,</td>
<td></td>
<td>3</td>
<td>Bodde</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Zinde-ke,</td>
<td></td>
<td>2</td>
<td>Karral</td>
<td>L. ke.</td>
<td>ditto</td>
</tr>
<tr>
<td>Mauni-ke,</td>
<td></td>
<td>3</td>
<td>Wattú</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Malbú ke,</td>
<td></td>
<td>3</td>
<td>ditto.</td>
<td>Haveli</td>
<td>ditto</td>
</tr>
<tr>
<td>Knie-ke,</td>
<td></td>
<td>1</td>
<td>ditto.</td>
<td>P. P.</td>
<td>ditto</td>
</tr>
<tr>
<td>Mali-ke,</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Mali-ke 2nd,</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Chakkú-ke,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Ahnú-ke,</td>
<td></td>
<td>3</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Mahmú-ke,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>K. K.</td>
<td>ditto</td>
</tr>
<tr>
<td>Malkani,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>K. K.</td>
<td>ditto</td>
</tr>
<tr>
<td>Pach-biraham-ka,</td>
<td></td>
<td>21st</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
</tbody>
</table>

Villages on the left bank.

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Length of Stages and date</th>
<th>Apant.</th>
<th>Inland</th>
<th>Caste.</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Húsín Sháh,</td>
<td>14th</td>
<td>1</td>
<td>Sayad,</td>
<td>M.</td>
<td>ditto</td>
</tr>
<tr>
<td>Jolle-ke,</td>
<td></td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Bábádur-ke,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Chave-ke,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gúzar,</td>
<td></td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Tobah,</td>
<td></td>
<td>4</td>
<td>Sayad,</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Bhauara,</td>
<td></td>
<td>1</td>
<td>Udheré,</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Jhindu,</td>
<td></td>
<td>4</td>
<td>do. Wat</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Kahán,</td>
<td></td>
<td>4</td>
<td>do. Wat</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Jháhán Kán,</td>
<td></td>
<td>4</td>
<td>Abneri,</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Sher Mahámad,</td>
<td></td>
<td>4</td>
<td>Udheri,</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Sháh ud din,</td>
<td></td>
<td>4</td>
<td>Bodla,</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Tugierí,</td>
<td></td>
<td>12</td>
<td>Udheré,</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Kot Qám,</td>
<td></td>
<td>4</td>
<td>do. Wat</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Kán,</td>
<td></td>
<td>4</td>
<td>Lungah,</td>
<td>Q. ke.</td>
<td>ditto</td>
</tr>
<tr>
<td>Mari Babal-ke,</td>
<td></td>
<td>1</td>
<td>Karral</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Bunga Jánu-ka,</td>
<td></td>
<td>4</td>
<td>Pathán</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Bunga Rami-ka,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Masta-ke,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
</tbody>
</table>

Villas on the right bank.

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Length of Stages and date</th>
<th>Apant.</th>
<th>Inland</th>
<th>Caste.</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pír Sikandár,</td>
<td>29th</td>
<td>1</td>
<td>Chishti,</td>
<td>Q. ke.</td>
<td>ditto</td>
</tr>
<tr>
<td>Akú-ke,</td>
<td></td>
<td>4</td>
<td>Sullieré,</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Níhm-ke,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Bahádúr-ke,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Húsnín-ke,</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Bálíl-ke,</td>
<td></td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Mulki,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Jóhad-ke,</td>
<td></td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Muslie,</td>
<td></td>
<td>4</td>
<td>do. Mus-</td>
<td>li,</td>
<td>ditto</td>
</tr>
<tr>
<td>Fattána,</td>
<td></td>
<td>1</td>
<td>Ditto.</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Jíddí-ke,</td>
<td></td>
<td>2</td>
<td>Jíddí.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
</tbody>
</table>
| Vazíd Sháh,       |                           | 1      | Kvuggí, | ditto.
| Dúllá,            |                           | 1      | Katín, | Jháda. |

Villas on the left bank.

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Length of Stages and date</th>
<th>Apant.</th>
<th>Inland</th>
<th>Caste.</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wásti Maul-</td>
<td>30th</td>
<td>1</td>
<td>Rain,</td>
<td>Jhádd</td>
<td>ditto</td>
</tr>
<tr>
<td>vi-ke,</td>
<td></td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Bungá Jiwan,</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Wásti Jiwan,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Kál Sháh,</td>
<td></td>
<td>2</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Nór Sháh,</td>
<td></td>
<td>6</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Wásti Umar,</td>
<td></td>
<td>6</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Bélóch-ke,</td>
<td></td>
<td>4</td>
<td>ditto.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Kórí Bhatá,</td>
<td></td>
<td>1</td>
<td>Bhatá,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Jásfár Sháh,</td>
<td></td>
<td>3</td>
<td>Sayad,</td>
<td>S. F.</td>
<td>ditto</td>
</tr>
<tr>
<td>Sháhar Suk-,</td>
<td></td>
<td>2</td>
<td>Luckou-</td>
<td>ri,</td>
<td>ditto</td>
</tr>
<tr>
<td>Kán,</td>
<td></td>
<td>4</td>
<td>Q. ke.</td>
<td>ditto.</td>
<td>ditto</td>
</tr>
<tr>
<td>Mari Babal-ke,</td>
<td></td>
<td>1</td>
<td>Sial,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Bunga Jánu-ka,</td>
<td></td>
<td>4</td>
<td>Núní,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Bunga Rami-ka,</td>
<td></td>
<td>4</td>
<td>Núní,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Masta-ke,</td>
<td></td>
<td>4</td>
<td>Núní,</td>
<td>ditto.</td>
<td></td>
</tr>
</tbody>
</table>

### Journal of a voyage from March

<table>
<thead>
<tr>
<th>Length of Stages and date</th>
<th>Names of Villages</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>64 kos.</td>
<td>Mehrabpur,</td>
<td>1</td>
<td>Luchveri, H.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kallar-wah,</td>
<td>3</td>
<td>ditto, ditto.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boland Shāh,</td>
<td>1</td>
<td>Bodle, ditto.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shāh Hattie,</td>
<td>1</td>
<td>Dāūdpo-tra, ditto.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kore Shāh,</td>
<td>1</td>
<td>Sayad, ditto.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Palra,</td>
<td>2</td>
<td>Dāūdpo-tra, ditto.</td>
<td></td>
</tr>
<tr>
<td>114 kos.</td>
<td>Khāi,</td>
<td>3</td>
<td>Ghazi Khana ru, ditto</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Badbire,</td>
<td>1</td>
<td>ditto, ditto</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ghafūrā,</td>
<td>1</td>
<td>Daulțāná, ditto.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bhadourn,</td>
<td>1</td>
<td>ditto, ditto</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Khairpur,</td>
<td>2</td>
<td>Dāūdpo-tra, ditto.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chotta,</td>
<td>1</td>
<td>Mixed, ditto</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nūrpur,</td>
<td>1</td>
<td>ditto, ditto</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tušeri,</td>
<td>1</td>
<td>ditto, ditto</td>
<td></td>
</tr>
</tbody>
</table>

**Villages on the left bank.**

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khokar,</td>
<td>1</td>
<td>22</td>
<td>Khokar, B-ke.</td>
</tr>
<tr>
<td>Wāsti Rahim Shāh</td>
<td>1</td>
<td>1</td>
<td>Sayad, ditto</td>
</tr>
<tr>
<td>Salderi,</td>
<td>1</td>
<td>12</td>
<td>Salderi, ditto</td>
</tr>
<tr>
<td>Lakṣa Salderi,</td>
<td>1</td>
<td>2</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Kora Bḥāt-nā</td>
<td>1</td>
<td>3</td>
<td>Bḥūtnā, ditto</td>
</tr>
<tr>
<td>Wāsti Hākan-ke</td>
<td>1</td>
<td>4</td>
<td>Karral, ditto</td>
</tr>
<tr>
<td>Mārā Khān Beloch</td>
<td>1</td>
<td>1</td>
<td>Beloch, ditto</td>
</tr>
<tr>
<td>Umar Gūrja,</td>
<td>1</td>
<td>1</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Tewānā,</td>
<td>1</td>
<td>2</td>
<td>Lakvir, ditto</td>
</tr>
<tr>
<td>Gohar,</td>
<td>1</td>
<td>2</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Lāldeh,</td>
<td>1</td>
<td>3</td>
<td>Jāt, ditto</td>
</tr>
<tr>
<td>Fodar,</td>
<td>1</td>
<td>3</td>
<td>Rain, ditto</td>
</tr>
<tr>
<td>Arrain,</td>
<td>1</td>
<td>3</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Lāldeh,</td>
<td>1</td>
<td>3</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Badura,</td>
<td>1</td>
<td>2</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Shāda,</td>
<td>1</td>
<td>2</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Bahar Karm Allā Shāh</td>
<td>1</td>
<td>3</td>
<td>Kūkari, ditto</td>
</tr>
<tr>
<td>Kalē Shāh,</td>
<td>1</td>
<td>4</td>
<td>Sayad, ditto</td>
</tr>
<tr>
<td>Hassan</td>
<td>1</td>
<td>5</td>
<td>Wasseir, ditto</td>
</tr>
<tr>
<td>Moze Wasseir</td>
<td>1</td>
<td>6</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Dhalluan,</td>
<td>1</td>
<td>7</td>
<td>Bhubbi, ditto</td>
</tr>
<tr>
<td>2nd Wasseir,</td>
<td>1</td>
<td>8</td>
<td>Wasseir, ditto</td>
</tr>
<tr>
<td>Khāṅgarh,</td>
<td>1</td>
<td>9</td>
<td>Bhubbi, I. S.</td>
</tr>
<tr>
<td>Khāṅpur,</td>
<td>1</td>
<td>10</td>
<td>Rain, ditto, Malsian</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sirdārpur,</td>
<td>1</td>
<td>2</td>
<td>Joyce, Tufuri</td>
</tr>
<tr>
<td>Joyce,</td>
<td>1</td>
<td>2</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Lāl-ke Jok,</td>
<td>1</td>
<td>3</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Jok dūsra,</td>
<td>1</td>
<td>3</td>
<td>Dāūdpo-tra, ditto</td>
</tr>
<tr>
<td>Sherpur,</td>
<td>1</td>
<td>3</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Ghans Joya,</td>
<td>1</td>
<td>4</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Jamāl Joya,</td>
<td>1</td>
<td>4</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Kūkari,</td>
<td>1</td>
<td>4</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Mutali,</td>
<td>1</td>
<td>4</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Pipalli,</td>
<td>1</td>
<td>4</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Sher Mad Ahmad Khān</td>
<td>1</td>
<td>5</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>2nd Mattali,</td>
<td>1</td>
<td>5</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Durpur,</td>
<td>1</td>
<td>5</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Wāstī Mowl-vi-ke,</td>
<td>1</td>
<td>6</td>
<td>Mixed, ditto</td>
</tr>
<tr>
<td>Wāgāc,</td>
<td>1</td>
<td>6</td>
<td>Wagi, ditto</td>
</tr>
<tr>
<td>Gamu walur,</td>
<td>1</td>
<td>6</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Goth Bahū-dār,</td>
<td>1</td>
<td>6</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Kālā Ahul,</td>
<td>1</td>
<td>6</td>
<td>Andu, ditto</td>
</tr>
<tr>
<td>Mithi de Goth,</td>
<td>1</td>
<td>6</td>
<td>Sayad, ditto</td>
</tr>
<tr>
<td>Gouhan,</td>
<td>1</td>
<td>6</td>
<td>Beloch, ditto</td>
</tr>
<tr>
<td>Goth Morād Khān,</td>
<td>1</td>
<td>6</td>
<td>Dāūdpo-tra, G.N.M.</td>
</tr>
<tr>
<td>Goth Ali yār Khān,</td>
<td>1</td>
<td>6</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Bhundī,</td>
<td>1</td>
<td>6</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Dera Putton-ka,</td>
<td>1</td>
<td>6</td>
<td>Beloch, ditto</td>
</tr>
<tr>
<td>Goth Nūr Mahamad,</td>
<td>1</td>
<td>6</td>
<td>Dāūdpo-tra,</td>
</tr>
</tbody>
</table>

**Villages on the right bank.**

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pir Imām Din,</td>
<td>1</td>
<td>Sayāds, Malsian</td>
<td></td>
</tr>
<tr>
<td>Malik Wā-hun,</td>
<td>2</td>
<td>2</td>
<td>Wasseir, ditto</td>
</tr>
<tr>
<td>Azīmpur,</td>
<td>2</td>
<td>1</td>
<td>Beloch, ditto</td>
</tr>
<tr>
<td>Ahmadpur,</td>
<td>4</td>
<td>1</td>
<td>Of Belochori-gin, ditto</td>
</tr>
<tr>
<td>Qāzi Mahamad,</td>
<td>1</td>
<td>1</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Morādpur,</td>
<td>1</td>
<td>1</td>
<td>Mixed, ditto</td>
</tr>
<tr>
<td>Ghauspur,</td>
<td>1</td>
<td>1</td>
<td>ditto, ditto</td>
</tr>
<tr>
<td>Fattehpur,</td>
<td>1</td>
<td>1</td>
<td>ditto, ditto</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Apart. Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kādirpur,</td>
<td>3 4 8th.</td>
<td>Mixed tribes and Jāt, Malsían.</td>
<td></td>
</tr>
<tr>
<td>Chela Wāhung</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Kutabpur,</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Bahālur,</td>
<td>1 1½ Wage,</td>
<td>K.</td>
<td></td>
</tr>
<tr>
<td>Wāsti Mirūdi,</td>
<td>1 1½ Mohar,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Šīhāb Abū Zālim,</td>
<td>1 1½ Usra,</td>
<td>Jāt, ditto.</td>
<td></td>
</tr>
<tr>
<td>Dera Lallede,</td>
<td>1 1½ Beloch,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Wāsti Basil</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Dost Maha-</td>
<td>1 1½ Dāudpota-</td>
<td>tra, ditto.</td>
<td></td>
</tr>
<tr>
<td>Moze Vazir Beloch</td>
<td>1 1½ Beloch,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Moze Alla yār,</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
</tbody>
</table>

**Villages on the left bank.**

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Apart. Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dera Backa,</td>
<td>4 4 8th.</td>
<td>Beloch, D. B.</td>
<td></td>
</tr>
<tr>
<td>Dera Gūl di,</td>
<td>1 1½ ditto,</td>
<td>B.</td>
<td></td>
</tr>
<tr>
<td>Biłigani,</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Mir Qāsim,</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Shāh,</td>
<td>1 1½ Karwar,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Mūjāl,</td>
<td>1 1½ Majal,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Kāsrā,</td>
<td>1 1½ Karśa,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Aḥsām,</td>
<td>1 1½ Aḥsam,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Gīdpura,</td>
<td>1 1½ Joyce,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Rattānu,</td>
<td>1 1½ Dāudpota-</td>
<td>tra, ditto.</td>
<td></td>
</tr>
<tr>
<td>Bākarpur,</td>
<td>1 1½ Chauṇn B.</td>
<td>ditto.</td>
<td></td>
</tr>
</tbody>
</table>

**Villages on the right bank.**

<table>
<thead>
<tr>
<th>Names of Villages</th>
<th>Apart. Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moze Dera Delāwar</td>
<td>1 1½ Beloch,</td>
<td>Kehore.</td>
<td></td>
</tr>
<tr>
<td>Wīgha Mal,</td>
<td>1 1½ Wīgh Mal.</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Gūl Mulhana,</td>
<td>1 1½ Mulhāni ditto,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahālur,</td>
<td>1 1½ Wīgh,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Sūkār,</td>
<td>1 1½ Seekār,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Kūl,</td>
<td>1 1½ Kāl,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Phul,</td>
<td>1 1½ Phul,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Jāns,</td>
<td>1 1½ Waggān,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Ahur Wahun,</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Kolti Murād,</td>
<td>1 1½ Beloch,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Wea,</td>
<td>1 1½ Chattie,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Gūlām Mahamad,</td>
<td>1 1½ Chawān,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Moze Kuttabū,</td>
<td>1 1½ Daulānā,</td>
<td>kehore.</td>
<td></td>
</tr>
<tr>
<td>Aḥsām,</td>
<td>1 1½ Aḥsam,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Hasilwālā,</td>
<td>1 1½ Kansa,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Nierwāhān,</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Dodānā,</td>
<td>1 1½ Oojāre,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Wāsti Be-loch-ke,</td>
<td>1 1½ Beloch,</td>
<td>S.</td>
<td></td>
</tr>
<tr>
<td>Jhok Tuka,</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
<tr>
<td>Stikri,</td>
<td>2 2 Chan-</td>
<td>nur, ditto.</td>
<td></td>
</tr>
<tr>
<td>Guze Lahun- wāla,</td>
<td>1 1½ ditto,</td>
<td>ditto.</td>
<td></td>
</tr>
</tbody>
</table>

**From Bahāwalpur to Mithankot by the Rivers Gharra, Panjnad and Indus.**

**Villages on the left bank.**

<table>
<thead>
<tr>
<th>Feb. Goth Bajin</th>
<th>3 4 8th.</th>
<th>Beloch, B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th Kīn-ke,</td>
<td>3 4 8th.</td>
<td>Beloch, B.</td>
</tr>
<tr>
<td>Goth Mulla Ghanni</td>
<td>3 4 8th.</td>
<td>Dāudpota- tra Gussani, ditto.</td>
</tr>
<tr>
<td>Jawarwālī,</td>
<td>4 4 8th.</td>
<td>Jā: Chun- nar, L.</td>
</tr>
<tr>
<td>Khanawālī,</td>
<td>4 4 8th.</td>
<td>ditto, ditto.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of Stages of</th>
<th>Names of</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>inland.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sammá Satta</td>
<td>1</td>
<td>1/2</td>
<td>Ját,</td>
<td>S. M.</td>
</tr>
<tr>
<td>Wásti Muhabbat-ke</td>
<td>1</td>
<td>1</td>
<td>Gurwan</td>
<td>Ját, ditto.</td>
</tr>
<tr>
<td>Bhaddí</td>
<td>1</td>
<td>1</td>
<td>Uttera</td>
<td>Ját, ditto.</td>
</tr>
<tr>
<td>Eesan</td>
<td>1</td>
<td>1/2</td>
<td>Mutha</td>
<td>Ját, ditto.</td>
</tr>
<tr>
<td>Aman Sháh</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Naharwálí</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Kot Dadá</td>
<td>1</td>
<td>2</td>
<td>Ját,</td>
<td>K. D.</td>
</tr>
<tr>
<td>Gallu</td>
<td>1/2</td>
<td>1</td>
<td>Gallu</td>
<td>ditto.</td>
</tr>
<tr>
<td>Muhabbatpur</td>
<td>1</td>
<td>1/2</td>
<td>Joyce</td>
<td>Ját, ditto.</td>
</tr>
<tr>
<td>Abdülapur</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Guzr Banh</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Khokar</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Bhammá</td>
<td>1</td>
<td>1/2</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Mallikwálí</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Mallik Síkanar</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Gallá</td>
<td>1</td>
<td>2</td>
<td>Gallá</td>
<td>Ját, ditto.</td>
</tr>
<tr>
<td>Pipí kanjan-ke</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Alliwáhun</td>
<td>1</td>
<td>1/2</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Phagwára</td>
<td>1</td>
<td>1/2</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Uthwálí</td>
<td>1</td>
<td>1/2</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Kabbul</td>
<td>1</td>
<td>1/2</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
</tbody>
</table>

**Villages on the right bank.**

<table>
<thead>
<tr>
<th>Miani</th>
<th>1/2</th>
<th>Ját</th>
<th>Tului</th>
<th>A. W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wásti Abád-ke</td>
<td>1</td>
<td>Ját</td>
<td>Chun</td>
<td>Ját</td>
</tr>
<tr>
<td>Kikrí</td>
<td>1/2</td>
<td>Ját</td>
<td>Koliar</td>
<td>ditto.</td>
</tr>
<tr>
<td>Wásti Tseke</td>
<td>1/2</td>
<td>Ját</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Do. Ghólam Mahamad</td>
<td>1/2</td>
<td>Kollar</td>
<td>wáh</td>
<td>Pucknáwar</td>
</tr>
<tr>
<td>Badhi</td>
<td>1/2</td>
<td>Kollar</td>
<td>Ját</td>
<td>ditto.</td>
</tr>
<tr>
<td>Baghowálí</td>
<td>1/2</td>
<td>Kollar</td>
<td>Ját</td>
<td>ditto.</td>
</tr>
<tr>
<td>Battá Kotla</td>
<td>1/2</td>
<td>Kollar</td>
<td>Ját</td>
<td>ditto.</td>
</tr>
<tr>
<td>Sodra</td>
<td>1/2</td>
<td>Kollar</td>
<td>Ját</td>
<td>ditto.</td>
</tr>
<tr>
<td>Hyatpur</td>
<td>1/2</td>
<td>Kollar</td>
<td>Ját</td>
<td>ditto.</td>
</tr>
<tr>
<td>Wásti Bijrana de</td>
<td>1/2</td>
<td>Uttera</td>
<td>Ját</td>
<td>Ját, Kotla</td>
</tr>
<tr>
<td>Yaruka chack</td>
<td>1/2</td>
<td>Uttera</td>
<td>Ját,</td>
<td>Kotla.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of Stages of</th>
<th>Names of</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>inland.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Othwal</td>
<td>1</td>
<td>1/2</td>
<td>Ját,</td>
<td>Sárru</td>
</tr>
<tr>
<td>Motthí</td>
<td>1</td>
<td>1</td>
<td>Ját,</td>
<td>Sárru, ditto.</td>
</tr>
<tr>
<td>Kotla Chákar</td>
<td>1/2</td>
<td>1</td>
<td>Mothá</td>
<td>Ját, ditto.</td>
</tr>
<tr>
<td>MozaSultan</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Góth Qádibbakhsh</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Kotla Sháh</td>
<td>1/2</td>
<td>1</td>
<td>Ját,</td>
<td>Káníun</td>
</tr>
<tr>
<td>Rotul</td>
<td>1</td>
<td>1/2</td>
<td>Ját,</td>
<td>ditto.</td>
</tr>
<tr>
<td>Kikkarwálí</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Wásti Sherké</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Wásti Husain-ke</td>
<td>1/2</td>
<td>1</td>
<td>Júbúl</td>
<td>ditto.</td>
</tr>
<tr>
<td>Batton</td>
<td>1/2</td>
<td>1</td>
<td>Khínévon</td>
<td>ditto.</td>
</tr>
<tr>
<td>Jhitthewálí</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Murun</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Jívná</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Patháná</td>
<td>1/2</td>
<td>1</td>
<td>ditto.</td>
<td>ditto.</td>
</tr>
<tr>
<td>Wásti Bhalíke</td>
<td>1/2</td>
<td>1</td>
<td>Ghallú</td>
<td>ditto.</td>
</tr>
</tbody>
</table>

**Villages on the left bank.**

| Kanúwalí         | 1/2      | Ghallú| Ját,  | A.        |
|                  |          |       |       | ditto,    |
| Ghallú           | 1/2      | ditto. | Ját,  | ditto,    |
| Behlí Wahál-ke  | 1/2      | ditto. | Ját,  | ditto,    |
| Jundwaddá        | 1/2      | ditto. | Ját,  | ditto,    |
| Wástishakar      | 1/2      | ditto. | Ját,  | ditto,    |
| Khán             | 1/2      | ditto. | Ját,  | ditto,    |
| Ismailpur        | 1/2      | ditto. | Ját,  | ditto,    |
| Wásti Mahamad    | 1/2      | ditto. | Ját,  | ditto,    |
| Dáupótra         | 1/2      | ditto. | Ját,  | ditto,    |
| Goth Kheir       | 1/2      | ditto. | Ját,  | ditto,    |
| Khán             | 1/2      | ditto. | Ját,  | ditto,    |
| Goth A'lam       | 1/2      | ditto. | Ját,  | ditto,    |
| Khán-ke          | 1/2      | ditto. | Ját,  | ditto,    |
| Jhängrá         | 1/2      | ditto. | Ját,  | ditto,    |
| Kíssanwálí       | 1/2      | ditto. | Ját,  | ditto,    |
| Kissansví        | 1/2      | ditto. | Ját,  | ditto,    |
| Moza Dahan       | 1/2      | ditto. | Ját,  | ditto,    |
| Mirpur           | 1/2      | ditto. | Ját,  | ditto,    |
| Kirree           | 1/2      | ditto. | Ját,  | ditto,    |
| Jaméwálí         | 1/2      | ditto. | Ját,  | ditto,    |
| Kot Imám         | 1/2      | ditto. | Ját,  | ditto,    |
| Din              | 1/2      | ditto. | Ját,  | ditto,    |
| Moza Bakar       | 1/2      | ditto. | Ját,  | ditto,    |
| Bakra            | 1/2      | ditto. | Ját,  | ditto,    |
| Jíndwá             | 1/2      | ditto. | Ját,  | ditto,    |
| Chúñhan          | 1/2      | ditto. | Ját,  | ditto,    |
| Raáulpur         | 1/2      | ditto. | Ját,  | ditto,    |
| Guzr Makhanbela  | 1/2      | ditto. | Ját,  | ditto,    |

### Lodiana to Mithankot by Sallaj river.

#### Villages on the right bank.

<table>
<thead>
<tr>
<th>Village</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jumma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghantu</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gagdušalá</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahšuéni</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lal Jabul</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vani</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharīwáli</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bakhuwali</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jabi</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moza</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puckawar</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duggar</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skirance</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miri</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaddá Jhulan</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheir Khán</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noraja</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muná Jabeil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haveli</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindún</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pabban</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shīrāi</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benth Masa</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dhammur</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chun Jan</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monglı</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azmūth</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bāli</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Villages on the left bank.

<table>
<thead>
<tr>
<th>Village</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moza Lál</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahnáud</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Khán</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wásti Durg</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Večheer</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mīnni</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jhullan</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Núrwa Šá</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Names of Villages.

<table>
<thead>
<tr>
<th>Village</th>
<th>Distance</th>
<th>Caste</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moza Hassú</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massú</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahnád</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Khán</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sáwanwálí</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sītpār</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jhullan</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Khángar</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moza Bhattar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Klānpùr</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kot Alla Yār</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahnád</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moza Pannú</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iĥobah</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wásti Nán</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wásti Sone-</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mud Lash-</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kari</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dohar</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dakhá</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lang</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrattar</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wásti Yaran-</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dost Mahnád</td>
<td>1 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kamán Khán</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shambir</td>
<td>2 1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nót Mithán</td>
<td>3 1/2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 decipher 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 Amaravati," a town in the Berar 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 Amaravati 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 Dipaladinna, (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 "mujiké"... and the same combi-
FACSIMILE of AN INSCRIPTION on the East side of the S. Gateway of DIPALDINNA at AMRAWUTTY.
nation there recognized as "Mahâräja"... drew Captain Cunning-
ham's attention while copying the penultimate line of the present
inscription. No doubt the whole of this class of cave and chaitya in-
scriptions 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, Amarâvatî. In Wilson's catalogue
of the Mackenzie MSS. vol. ii. page xxvii. we find notice of a "report
of the progress of Anand Râo (one of the Colonel's travelling collec-
tors) on his journey in the Dharanikota, Amarâvatî, and Bender dis-
tricts in the Telugu country for the year 1817." This would, doubt-
less, 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 Mahâbalipur and other places to the westward; the
essential portion of each letter also assimilates very closely to the
alphabets of the Chattisgarh and Seoni 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 Devanâgarî 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 un-
dergone 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
Facsimiles of Ancient Inscriptions.

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 pundits.

Transcript of the Amarāvati Inscription.

1 ... ye nārya uṭṭhī vṛttvita ca...
2 ... rēṣa va māṭkādhreya va śrījāveta
3 ... māṁśīraśnavo piśvaraśnavāt bhavanās
4 karṣeṇāḥ ca ṛṭaṁ viṇyāsārṇaṁśyādvede bhīte...
5 rājja kāmāyatīmanṭreṇ nṛś的效果 ṛṣṭvāvibhū...
6 nāyaka prati dāriṣṭaḥ nābalaśyaṁ sāṅgāya dān

* It was Ma'dhora’y who aided Captain Troyer in the Allahabad inscription, J. A. S. vol. ii.
Facsimiles of Ancient Inscriptions.

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, धर्मः:—the word दुःखे, friend, in line 14, is written Surhhad with a double $k$, and the $r$ superposed:—The anuswara is often replaced by the $स$ at length: the $स$ is a compound letter formed by suffixing $श$ to $स$; and the $च$ is in like manner formed by the union of the $क$ and the $च$, 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 Amardvati was subject to their hated opponents, the followers of the Buddhist creed.

Modified Transcript by the Rev. W. Yates.

(Translation.

(Two words omitted here as belonging to something before).

By the virtuous man who relieves the guest and the brāhmaṇ, 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
2
3
4
5
6
7
8
9
Comparison of the Amaravati character with other alphabets

<table>
<thead>
<tr>
<th></th>
<th>Allahabad</th>
<th>Krishna</th>
<th>Canarese modern</th>
<th>Telugu modern</th>
</tr>
</thead>
<tbody>
<tr>
<td>k</td>
<td>क</td>
<td>क</td>
<td>क</td>
<td>क</td>
</tr>
<tr>
<td>kh</td>
<td>ख</td>
<td>ख</td>
<td>ख</td>
<td>ख</td>
</tr>
<tr>
<td>g</td>
<td>ग</td>
<td>ग</td>
<td>ग</td>
<td>ग</td>
</tr>
<tr>
<td>gh</td>
<td>ग्घ</td>
<td>ग्घ</td>
<td>ग्घ</td>
<td>ग्घ</td>
</tr>
<tr>
<td>ng</td>
<td>न्ग</td>
<td>न्ग</td>
<td>न्ग</td>
<td>न्ग</td>
</tr>
<tr>
<td>ch</td>
<td>च</td>
<td>च</td>
<td>च</td>
<td>च</td>
</tr>
<tr>
<td>chh</td>
<td>छ</td>
<td>छ</td>
<td>छ</td>
<td>छ</td>
</tr>
<tr>
<td>j</td>
<td>ज</td>
<td>ज</td>
<td>ज</td>
<td>ज</td>
</tr>
<tr>
<td>jh</td>
<td>झ</td>
<td>झ</td>
<td>झ</td>
<td>झ</td>
</tr>
<tr>
<td>ny</td>
<td>न्य</td>
<td>न्य</td>
<td>न्य</td>
<td>न्य</td>
</tr>
<tr>
<td>t</td>
<td>त</td>
<td>त</td>
<td>त</td>
<td>त</td>
</tr>
<tr>
<td>th</td>
<td>थ</td>
<td>थ</td>
<td>थ</td>
<td>थ</td>
</tr>
<tr>
<td>d</td>
<td>द</td>
<td>द</td>
<td>द</td>
<td>द</td>
</tr>
<tr>
<td>dh</td>
<td>ध</td>
<td>ध</td>
<td>ध</td>
<td>ध</td>
</tr>
<tr>
<td>n</td>
<td>न</td>
<td>न</td>
<td>न</td>
<td>न</td>
</tr>
<tr>
<td>p</td>
<td>प</td>
<td>प</td>
<td>प</td>
<td>प</td>
</tr>
<tr>
<td>ph</td>
<td>फ़</td>
<td>फ़</td>
<td>फ़</td>
<td>फ़</td>
</tr>
<tr>
<td>b</td>
<td>ब</td>
<td>ब</td>
<td>ब</td>
<td>ब</td>
</tr>
<tr>
<td>bh</td>
<td>भ</td>
<td>भ</td>
<td>भ</td>
<td>भ</td>
</tr>
<tr>
<td>m</td>
<td>म</td>
<td>म</td>
<td>म</td>
<td>म</td>
</tr>
</tbody>
</table>

Initial and medial vowels:

- a अ
- á ए
- i ई
- í ऎ
- u उ
- í ऊ
e 
- kā क
- ke क
kī क
kū क
kā क
ekā क
ej 

Journ. As. Soc. Vol. VI. Pt. XIII.
of murderers of husbands, murderers of fathers, and murderers of friends, and of those who have committed great sins against the gods and brâhmans. 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 osa 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. Gaveus), 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 Ydk (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
(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 Yāk 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.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of the head from the tip of the nose to the summit of the crista,</td>
<td>1 11.3</td>
<td>2 0.0</td>
<td>2 0.0</td>
</tr>
<tr>
<td>Breadth of the occipital ridge between the roots of the horns,</td>
<td>0 10.5</td>
<td>7.5</td>
<td>5.0</td>
</tr>
<tr>
<td>—— across the forehead at the greatest projection of the orbits,</td>
<td>10.0</td>
<td>8.2</td>
<td>10.5</td>
</tr>
<tr>
<td>—— at the narrowest part of the forehead,</td>
<td>8.6</td>
<td>6.4</td>
<td>6.2</td>
</tr>
<tr>
<td>Depth of the occipital plane, from the great foramen to the top of the crista,</td>
<td>9.0</td>
<td>4.2</td>
<td>6.0</td>
</tr>
<tr>
<td>—— of the superior maxilla from its junction with the nose of the alveolar edge of the molar tooth,</td>
<td>5.7</td>
<td>5.5</td>
<td>7.0</td>
</tr>
<tr>
<td>Breadth of the nasal fossa,</td>
<td>3.7</td>
<td>2.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Height of do. from the palatine bone,</td>
<td>3.5</td>
<td>3.0</td>
<td>3.3</td>
</tr>
<tr>
<td>Length of the horn at its greatest curvature,</td>
<td>2 0.3</td>
<td>10.7</td>
<td>?</td>
</tr>
<tr>
<td>Circumference at its base,</td>
<td>1 4.2</td>
<td>7.1</td>
<td>?</td>
</tr>
</tbody>
</table>


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 Roughsedge, 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 Roughedge 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 Urna. 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 vertebrae, 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 Roughsedge." 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 Roughsedge; 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.
Memorandum on the Gaur and Gayal. [March,

wicke's, is not the Gaur, be of more value than the positive assertion of Major Roughsedge 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 Bûtân. 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. Philomen 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 cruel of all others of that country be the wild bulls of the forest, greater than our common field bulls, most swift, of colour breded, their eyes grey or bleuish" (colore fuluos oculis ceruleis); "their hair growing contrary; their mouth wide and reaching to the ears: their horns 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 Linnean 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.


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 linedate 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 Sylviidae with the Certhiidae. 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 Meliphagidae, 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 provi-sional—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 exclu-sively 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 ceca, 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 6½ by 8¼ inches, and ¾ oz., bill ¾ inch, tarsus ¼, central toe ½, hind toe ⅛.


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 under-tail 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 $\frac{1}{2}$, 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 acuminate, and furnished with only one salient process on each side the tip of the upper mandible of the bill. Size $5\frac{1}{2}$ by $7\frac{1}{2}$ inches, and less than $\frac{3}{8}$ 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.

<table>
<thead>
<tr>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip bill to tip tail,</td>
</tr>
<tr>
<td>Bill, length of,</td>
</tr>
<tr>
<td>--- basal height of,</td>
</tr>
<tr>
<td>--- ditto breadth of,</td>
</tr>
<tr>
<td>Tail,</td>
</tr>
<tr>
<td>Expanse of wings,</td>
</tr>
<tr>
<td>Tarsus,</td>
</tr>
<tr>
<td>Central toe,</td>
</tr>
<tr>
<td>And nail,</td>
</tr>
<tr>
<td>Hind toe,</td>
</tr>
<tr>
<td>And nail,</td>
</tr>
<tr>
<td>Weight,  oz.</td>
</tr>
</tbody>
</table>

*Emendata in preceding ornithological papers.*


[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 Elephantoideas*—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, Magar, several fragments of jaws, teeth, and buckler plates.
* Tortoises*—Emys, Trionyx, Testudo, numerous fragments.

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$\frac{1}{4}$ 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$\frac{1}{4}$ 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 Janna were also found under the kankar clays of the Dodb, 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.

actual size.

Bos Gaurus of Hardwicke
Original in As. Soc. Mus.

Scale 1 inch to a foot.

Fossil Quadrumanous Canine.
the situation of the two is similar enough. The calcareous infiltration which has consolidated the sand and gravel of the Sewalk 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 siliferous 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.
Proceedings of the Asiatic Society. [March,

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 Isanuropolis 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. Watten, 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.


The Indian Medical Journal, and Scientific Review—by Dr. Corby, W. Griffith, Esq., Chief Surgeon of the Madras Medical Establishment.

Meteorological Registers to March—by the Surveyor General.

Museum of Antiquities.

The Honorable F. Shore presented two pieces of sculpture brought from the Goud 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 kalass 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 Multra, 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 Calcut 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 Gírnar, (Gívnagar,) 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. Jaccot of Paris.

These most valuable copies, occupying eight folios of 8 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 24th character seems capable of being deciphered 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 Kannéri 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 Náishadhã 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 Ben-gali by Greccechunder, 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 Marot'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 Mháirwáír, 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 Jesalmer.

The only work of which they could learn was entitled "Boudh mat Jain marg grantha," of which the Raja 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 Mishmi 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 Maldive 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 Nawab Tuhawur Jung.

A stuffed specimen of the common Pelican, (Pelecanus Onocrotalus,) presented by Dr. F. P. Strong.

A specimen of the head, vertebrae and caudal fin of a large species of hammer-headed Shark, (Zygoena —— ?) presented by Robert Rose, Esq. This specimen is 9½ feet in length. It was found ashore in a bay at Birkul 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 Grunnien,) 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 Kuts.

Extract of a letter from Lieut. Colin MacKenzie (Malacca) was read, apprising the Secretary of his having at last succeeded in obtaining a tipper 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 Quadrumania, 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 Hardwar (Hari-duvāra.)

[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 Karnāl, a specimen of rock which has surprised me beyond measure. It is a slab
Proceedings of the Asiatic Society.

of sandstone 14 inches long by 5½ 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 Hoshangabaad and Jalalpur.

A letter from Mr. W. Dawe announced the dispatch of a fresh selection of fossils (including a lower jaw of the Sivalitherium) 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 Bollephon was received from Mr. W. H. Benson.

The following Meteorological notes were communicated by Major Davidson, Engrs. from Lucknow. 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. Timmins, 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 Jämun 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 electrice?) 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 unctionus, 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. Burt, 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. Burt'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 Bauleh, 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 dhyeplah, 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 1½ 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 sewage 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 Namrup 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. 8 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 sulphurous 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 Namrup river, which emit considerable quantities of that oil, but which have hitherto been unknown to Europeans, and apparently almost unused by the neighbouring 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 Jorhat, or up Karvan 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 Namrup 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.

<table>
<thead>
<tr>
<th></th>
<th>Fibrous Lignite</th>
<th>Compact Coal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volatile matter, including water</td>
<td>48.9</td>
<td>39.9</td>
</tr>
<tr>
<td>Carbon or coal,</td>
<td>47.7</td>
<td>58.1</td>
</tr>
<tr>
<td>Ash, red ochreous,</td>
<td>3.4</td>
<td>grey earthy</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Specific gravity,</td>
<td>1.312</td>
<td>1.244</td>
</tr>
</tbody>
</table>

In forwarding Lieut. Bigge's specimens, Captain Jenkins notices the discovery of another site of coal in the Dyang, 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.
Meteorological Register, kept at the Assay Office, Calcutta, for the Month of March, 1837.

| Day of the Month | Old Standard Barometer at 29.29 | New Standard Barometer | Thermometer at 39° | Thermometer at 60° | Thermometer at 80° | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Hygrometer | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidity | Dew-point | Hygrometer | Centesimal | Calculated Humidi
d \\

<table>
<thead>
<tr>
<th>Rain</th>
<th>Wind</th>
<th>Weather</th>
</tr>
</thead>
</table>
JOURNAL
OF
THE ASIATIC SOCIETY.

No. 64.—April, 1837.


[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 Irawadi river had proved the absence of communication between it and the great Tsampo 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 Irawadi still remained closed against them, and every attempt to enter either, from Assam or Manipur, was defeated by the jealous vigilance of the Burmese authorities.

It is generally known that the course of the lower portion of the Irawadi 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 Irawadi 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 Irawadi 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 Yunnan have been successfully investigated—the position of the very remarkable valley of Húkong has been determined—the Pyen-dween 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 Bísá 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 Patkóí 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 Bísá, 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 Mogun, 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 choki 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 young-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 kyok-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 proportionate 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 Shúelí 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 Thengyichú 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 Kyok Tsein, or Serpentine mines near the sources of the Urú 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 pipal, simal 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 Thidadophya, 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 gurú 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 Irawadi immediately opposite the modern choki 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 Manipúris, 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 Irawádi, 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-young, 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 Kyatpen, 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-myö 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 Mū river: he found it a well-beaten track and great thoroughfare, by which the inhabitants of the country as far west as Wantha Myû, 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 Kadûs, a race of people of a different origin from the Burmans, 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 Irawadi 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 Irawadi were still further north, and had not yet been reached. The first of any importance noticed is, the Shue li 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 Irawadi. Neither branch can be of any magnitude, for Captain Hannay remarks that at the point of junction with the Irawadi, the breadth of the Shuél 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 yia, 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 Irawadi, 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 no-made custom, which appears to be very general in the upper part of the Irawadi, would form an exaggerated estimate of the population of the towns and villages in which they are thus temporarily congregat-ed. "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 Kyundoun. Captain Hannay mentions a Kyoung or monastery recently erected by the Myothagi 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 plentv." 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 Wegyi, 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 Irawadi, which could be safely assumed as the basis of a calculation sufficiently accurate for such a purpose.

At Kyouk-gyi, which the party reached on the 17th, they had fairly entered the remarkable curve in the Irawadi 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 Burmans and Shâns. 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-gyi, 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 Myûwûn of Mogoun; 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-gyi, 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 Myá to Balet, a distance of three miles, the houses appeared to extend in an uninterupted line, and Kywún 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-duen, 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-duen 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 Kountown, where they barter their rice and cotton for salt and gn repee, (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 *Irawadi* 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 *Irawadi* 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 *Irawadi*, 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 *Irawadi*, 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 *Irawadi* 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 Rangun 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 trousers, after being accustomed to the harsh features and party-colored dress of the Burmans. The people I saw were Chinese from the province of Yunnan, 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 Myáwún 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 Munmo, is situated. To the latter place the Chinese take their merchandise from modern Bamo by water, and then proceed overland to the choki 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 Klafroth, (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, guapee, 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, Sambungya 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 Sheinmaga above Ava, and from Manbú, which is situated two marches west of Kutha. 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 Yunnan-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-yia 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 Kyouk-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 Irawadi, 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 Irawadi river up to this point had been unmarked by difficulties of any magnitude, and, with the exception of the passes through the Kyouk-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° 56' 53". Here they were to quit the Irawadi, 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 Shan 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 Lap-læ 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 Manipuris 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 Namyeen or Namyang, and the Mogaung or Numkong 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 Namyeen khyoung, which comes from the district of Monyeen 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 Thoogye 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, Kakliyens 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' Asiat. 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 prose rather than jadé 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 won to allow him to proceed with even a small party, he was constrained to limit his further researches to the Hukong 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 Tsaubas 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-win'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 Shuédoung-gyi 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 Hükong valley, may be described generally as passing between defiles, bounded by the inferior spurs of the Shuédoung-gyi 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 Nunsing 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 strewed 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 sél, 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 Walobhüm, and finally encamped on the left bank of the Edikhyoung, about three furlongs distant from Meinkhwon or Mungkhüm, 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 Hûkong 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 Shuédoung-gyi 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 Nuntunae or Khyendwen, which flows from the Shuédoung-gyi 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 Shuédoung range were under cultivation, and the population is said to extend across to the banks of the Irawadi, 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 Meinkhwan, which has a Shân 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 Kapdóp and the Namkwín: 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 Nembhyé 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 Hukong 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 2½ 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 merchandise 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, 2½ yards long, 18 rupees each; good cotton handkerchiefs, 4 rupees a pair; and coarse ones, 2½ 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 dhá (or short sword) and spear. The women wear neat jackets of dark coarse cotton cloth, and their tha-mines 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.
Captain Hannay’s Route

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 Hukong, 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 Shuédoung-gyi hills on the west, and the name of Situng 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 Hukong and the countries around, the principal appear to be, one leading across the Shuédoung-gyi range to the eastern Singphos; a second, called the Lye-gnep-bhüm road, winds round the base of the mountain of that name, and leads in sixteen days to Mánglang, the capital of the Khanti country, which was visited by Captain Wilcox.

The most important, however, with reference to trade, lies in a south-east direction from the Hukong valley, from which the district of Kahyo-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 Khunungs, 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 Hukong by the name of Mungfan*, and the Khantis have no communication with it but through the Khunungs.

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 Ningthi 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-gyi, 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 Pére Regis 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-lù-fù, between the rivers Kincha-kyang and Vu-lyanho. 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 Shan 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 Wengkeng-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 Hukong 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 journeys 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 brâhman 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 Bîsu 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 râja's name and ancestry which ought to afford a better clue.

This king appears in the 15th verse as Anîyanka 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 Bhum 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 brâhman, 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 râja 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-Nâgari 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 *kusamánjali*, 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 र of रूप, at the end of the fourth line of the lithograph. It bears a strong resemblance to the corresponding letter of the *Amaravati* 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-Nágari.*

नमः श्रवाय | विचुथिपुरुषभाषलोचनशिक्षवालागलब्धामतव
ख्यात्:सप्तश्चिरजीविता; प्रविधिश्रे:श्री: श्रविव द्वयति। यके राजरक्षकात:-
क्षत रात् चासाधिक पञ्चार्यक: सास्खः: सास्खः चासाधिकः सामजाताबिसुरसरितुगाहिस्यितः:
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 As. Soc. Museum.

Dimensions, 2 ft. by 4.
Facsimiles of Ancient Inscriptions.
Facsimiles of Ancient Inscriptions.

April, 19...
Facsimiles of Ancient Inscriptions.
Facsimiles of Ancient Inscriptions.

284

[April,

ยาน จยานิ | เม: พุทธสุข ราชพิษณุ์ ทิติยานิยนิยมิย วัคคีคณ์ยนิย

�ิ่งกิริยสิ นิย์ณ วิชัย: ๒ ๗ |

ขลธขุณ พระบรมราชูปสิริยาภิญย ปลายจิ้น สมบัติฉัญธารินิย |}
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 Rāhu had become many, took refuge in the fortress of Gange amidst the wood of Shiva’s thick hair: may that moon preserve you.

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.

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.

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.

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.

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.

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.

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.

“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' of LAKSHMI, and who was also called ANANTHA-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 Kali-yuga or iron age, and becoming old, anointed to the kingly office, his younger brother ANIYANSHA-BHIMA, at whose feet other kings bowed.

15. This ANIYANSHA-BHIMA 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 lover of Bali; the beloved friend of the herdsmen; the never-failing one in all his undertakings; the Vishwakseva by whom the deluged world was raised; and the real Vishwambhara 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 Mandukini, where united with the breast of the Kailasa and Himalaya mountains, then where is Shiva, ascending to the top of the Chandrasikhara 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 Varani†: 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 Kama'adeva‡.

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 Kama'adeva 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.
† Varani 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 brähman cities. Sacrifices too and bridges were conspicuous in all directions.

31. By him was given with pleasure to the preserving brähmans, for residence, a city of Brahma, one nearly equal of Vishaspati, 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 brähmans, 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, Gangâ, and the supporter of Himalaya, 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 Dhayala-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 decipher it. The repetition of the word Sri left little doubt of its language being
Indo-Sassanian Coins
Indo-Sassanian Coins.
Specimens of 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

\textbf{श्रीवसुदेवादिकासरस्वते क्षेत्रहरुतारस्वते}

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 \textit{श्रीवसुदेवा} \textit{Sri Vasudeva}, either denoting the god \textit{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 Top “of a Parthian dynasty unknown to history,”) and the genuine series of \textit{Persia} proper.

Sassanian coins, of the type common to \textit{Persia}, are never found at Beghram, according to Masson, although they are brought for sale in abundance to the bazar of Cdbul. 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 \textit{posopo}. One of this group, supposed by Mr. Masson to bear the \textit{Bamian} 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 \textit{Bamian} 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 Beghran, 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 Kúání 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 Hystapas, for it is very evident 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 Seístán 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 Mahmúd of Ghizí (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 Yuçna, 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 Gujerati translator of the Yuçna, Nāriosingha, renders the word کی 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’a present, determiner si les Kaianiens ou les rois dont le nom est procede 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 ete joint au nom de chacun de ces rois, uniquement pour indiquer la splendure de leur puissance, ou bien si le chef de cette dynastie a passe pour descendre du soleil, et s’il a laissé ce titre à ses successeurs, comme cela a eu lieu dans l’Inde pour les Suryavansa. Je ne veux pas ajouter une hypothese etymologique aux traditions fabuleuses dont les Parsees ont melé l’histoire de ces rois; mais il serait interessant de retrouver la forme Zende du nom du premier des Kaianiens, de Kobad داکباد, nom dans lequel on decouvrait peut-être le mot kavi (nom. kavé et kava), soleil. Si Kobad pouvait signifier “le soleil” ou “fils du soleil,” la question que nous posions tout à l’heure serait résolue, et les autres Kaianiens n’auraient reçu le titre de kavi (ké) que parce que la tradition les regardait comme issus d’un fils du soleil. Je remarquerais encore, sans attacher tantotfois 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’Antarvedi. Hamilton dans l’in dex 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 cöte un

* Gen. Hindus, page 77, on trouve dans le Rik et dans le Yadjourvéd, un roi nommé Cavasha, (Colebrooke, As. Res. VIII. 399;) et ce qui peut faire penser
Specimens of Indo-Sassanian Coins. [April,

described as 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 न. 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 Rájput series of December, 1835.
It seems to link this curious outline group with the full-faced Sassa-
nians 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 rajas at one end of the series,
evidently reach at the other to the bráhmanical rulers of the Panjáb,
and probably Cábúl. 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 buf-
falo, 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 Nāgarī numerals, thus: $\text{ṣ} 1 4 \cdot २ \infty २$. None of the pure Pehlevi is to be seen on either face, but on the shoulder in the corner is something like a Nāgarī स, 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. Swinney'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 cornuco. pia:—just above can be discerned two small Sanskrit letters ष _MISC_ prati or pratâ ... 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 ꞌ० becomes a ꞌ०; 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 Manikya 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 Nāgarī 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 Sri Va... It may be श्रीवृद्धिरंग.. लक्ष.

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 Brāhmanical faith among people using the same language; and now we are obtaining equally strong testimony of the engrazing 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 Agnīcūla or fire-worshipping races, whence were derived some of the principal families of the Rājpūts.—Indeed, some have imagined the whole of the Surya-vansīs, or sun-descended, to have been of Mithraic origin, and the Indu-vansīs 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 चौ दानिवरांच स्रिमान अति वरोहा,) having directly emanated from a Sassanian source. I say another, because the Saurashtra coins, and the Chauka-dūkas 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 Mārwār principalities. Colonel Ton thus describes the observances sacred to this luminary at Udayapura (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 Rāma 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 changi, 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 kirnüa, in allusion to its shape like a ray (carna†) of the orb." Many other quotations from the same author might be adduced in proof of the strong Mithraic tinge of Hinduism in modern Rājputana: and, in fact, the Muhammadan historians tell us that the fire-worship in Gujarat was only finally uprooted in the time of Ala-u'din’s incursions into the Dekhan.

* Annals of Rajasthan, 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 asserted 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 च (resembling the Gaur or Bengáli form) and in front of the mouth the letter ष which is most probably a ष 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 Nagári letter ष m; 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 श्रीच or श्रीष्र Sri 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 श्रीट . . . শ্রী Did . . . 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 न s : then in front of the nose the usual শ্রী, and below it the द 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 শ্রীশ্রী . . Sri Vigra (ha); on others শ্রীশ্রী . . Sri Yo, and শ্রীশ্রী . . Sri 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 नार, 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, च्रांक चु it may possibly be intended for च्रांक महराजा 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 विदिमग्घ Vidi sagu or Videsagu are bounded by the marginal dots, and must therefore be complete, however unintelligible. Were there room for a final च we might conjecturally read विदेशगुप्त Vidēṣagupta, "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 रु, or perhaps रु 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 पल—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. Tregear of Juānpūr 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. Tregear, there are three varia-
Specimens of Ceylon Coins.

On 20 and the coin below it; चतुर्भुज मितसा Satya mitasa. On the fine coins figs. 21, 22; स्वर्ण मितसा Saya mitasa. And on Nos. 19, 23, 24 and 25; विज्ञान मितसा 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 Mithroic origin, I feel strongly inclined to read the word मित्रस्यa, 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. Tregear 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 Mandi or Raipûr 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 Nāgāri letters क्र भीम Sri 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 क्र . . . सचाराज Sri . . . Mahârája; 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-Nâgarî, 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-
ing the reading Sri Mayatra 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 Dipaldinna) 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 Kalinga Wijaya bahu, surnamed Sahas 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 र but open like इ. 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 इ struck me as resembling in the squareness of its form, र the Ceylonese letter I had before mistaken for इ. 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 श्रीमलम्पि L. mat Sahas 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 सधा दुःशा सदन Maya pada 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
specimens, kindly transmitted the coins themselves, allowing me to retain the duplicates. Mr. Tornour 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 raja 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 dhoti falls between his legs, which being taken for a tail, has led some to call him Hanuman, 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 झंकबर श्री लकेश्वर on the side of the seated raja.

This name I presume to be the minister Lokaiswara of Mr. Tornour'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 Lilavati1 in A. D. 1215, and reigned for a year. The Ceylon ministers seem partial to the name: one is called Lankanath.

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 वाह्र स्री विजया बाहु. (Marsden makes the last word गदा, 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 doubtlessly interpreted Sri Rama nath by Mr. Wilson. From many examples, however, it is clearly श्री पराक्रमबाहु Sri Parâkrama bâhu. The first of this name was crowned at Pollonnaruwe, 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. *Sri Parākrama bāhu* fills the field of the reverse.

Fig. 5. This coin, one of the new acquisitions, has the name राजकीयाष्टोष्ण *Sri Rāja Lilāvati*, 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 *Sri 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. राजकीयाशिवाय *Sri 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 राजवानिक राजा *Sri Bhawānaka bāhu*, who seized the throne on his brother’s assassination by a minister in A. D. 1303. In his reign the Pandian general, Ariya Chakrvartti 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 Amaravati, 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 (म) ज राजा *Sri Gaja Rājā*, (A. D. 1127,) but the म is hardly allowable.

There are many small coins (10 and 11) from the same place, reading like it the same indefinite title राज राजा, 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. Lizark’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 Nāgārī letters निक, as if of Vira bahu, 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… rāya 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 Amārvati 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 चिवी .. कच in the Nāgārī 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 ½ 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.

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\(\frac{3}{4}\) years. There are some, but faint, traces of scarcities intermediate to these. We must remember that 18\(\frac{3}{4}\) 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 every where 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.

Head of a Snake killed at Cuttack. *I. killei*

**COLUBER MYSTERIZANS**

Abdominal plates 185

Caudal 280.

2nd Fossil Bone from Fort Dearing, 367 ft.
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 \( \frac{1}{10} \)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.
On the Revolution of the Seasons.

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,
On the Climate of Darjiling. [April,

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-Himalayan 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 Bengali constitutions, more accessible than the far western hills of Simla and Masuri, or the eastern station of Chirra Punji.

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

<table>
<thead>
<tr>
<th>Altitude</th>
<th>Corrected heights of the Barometer at 8½ A. M.</th>
<th>Calcutta.</th>
<th>Titalya.</th>
<th>deduced.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean temperature of air 75°, ........................</td>
<td>29.894</td>
<td>29.626</td>
<td>ft. 255.7</td>
</tr>
<tr>
<td></td>
<td>At 4½ P. M., ditto, 84.5, ........................</td>
<td>29.815</td>
<td>29.514</td>
<td>293.5</td>
</tr>
<tr>
<td></td>
<td>Average altitude of Titalya, ft. 275.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For Darjiling the data are more numerous:

<table>
<thead>
<tr>
<th>Calcutta.</th>
<th>Darjiling.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 1836, obs. 9 A. M.</td>
<td>30.098</td>
</tr>
<tr>
<td>Ditto, 5 P. M.</td>
<td>29.989</td>
</tr>
<tr>
<td>Jan. 1837, obs. 9 A. M.</td>
<td>30.073</td>
</tr>
<tr>
<td>Ditto, 5 P. M.</td>
<td>29.970</td>
</tr>
</tbody>
</table>

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 Titalya, for the month of October, 1836.

<table>
<thead>
<tr>
<th>Barometer A.</th>
<th>Thermometer in the Air</th>
<th>Regtg. Ther.</th>
<th>Rain.</th>
<th>Wind.</th>
<th>App. of Sky</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.M.</td>
<td>P.M.</td>
<td>A.M.</td>
<td>P.M.</td>
<td>Min. Max.</td>
<td>Inches</td>
</tr>
<tr>
<td>1</td>
<td>29.506</td>
<td>.463</td>
<td>1</td>
<td>.5</td>
<td>73</td>
</tr>
<tr>
<td>2</td>
<td>.592</td>
<td>.541</td>
<td>72.5</td>
<td>.5</td>
<td>81.5</td>
</tr>
<tr>
<td>3</td>
<td>.572</td>
<td>.533</td>
<td>71</td>
<td>.5</td>
<td>82.5</td>
</tr>
<tr>
<td>4</td>
<td>.672</td>
<td>.583</td>
<td>75</td>
<td>2.5</td>
<td>85.5</td>
</tr>
<tr>
<td>5</td>
<td>.712</td>
<td>.630</td>
<td>75</td>
<td>4.5</td>
<td>83</td>
</tr>
<tr>
<td>6</td>
<td>.740</td>
<td>.664</td>
<td>73.5</td>
<td>3.5</td>
<td>85</td>
</tr>
<tr>
<td>7</td>
<td>.776</td>
<td>.673</td>
<td>76.5</td>
<td>6.5</td>
<td>87</td>
</tr>
<tr>
<td>8</td>
<td>.767</td>
<td>.615</td>
<td>75.5</td>
<td>6.5</td>
<td>87</td>
</tr>
<tr>
<td>9</td>
<td>.727</td>
<td>.659</td>
<td>76</td>
<td>4.5</td>
<td>88</td>
</tr>
<tr>
<td>10</td>
<td>.754</td>
<td>.672</td>
<td>75</td>
<td>5.</td>
<td>87.5</td>
</tr>
<tr>
<td>11</td>
<td>.766</td>
<td>.695</td>
<td>76</td>
<td>5.5</td>
<td>88</td>
</tr>
<tr>
<td>12</td>
<td>.763</td>
<td>.648</td>
<td>76</td>
<td>4.5</td>
<td>86.5</td>
</tr>
<tr>
<td>13</td>
<td>.742</td>
<td>.684</td>
<td>77</td>
<td>4.</td>
<td>85.5</td>
</tr>
<tr>
<td>14</td>
<td>.738</td>
<td>.662</td>
<td>75.5</td>
<td>3.</td>
<td>84.5</td>
</tr>
<tr>
<td>15</td>
<td>.690</td>
<td>.653</td>
<td>67.5</td>
<td>2.5</td>
<td>82.5</td>
</tr>
<tr>
<td>16</td>
<td>.723</td>
<td>.660</td>
<td>68.5</td>
<td>3.</td>
<td>73</td>
</tr>
<tr>
<td>17</td>
<td>.792</td>
<td>.713</td>
<td>70</td>
<td>3.</td>
<td>82</td>
</tr>
<tr>
<td>18</td>
<td>.805</td>
<td>.722</td>
<td>70</td>
<td>3.5</td>
<td>82.5</td>
</tr>
<tr>
<td>19</td>
<td>.802</td>
<td>.727</td>
<td>69</td>
<td>5.</td>
<td>82.5</td>
</tr>
<tr>
<td>20</td>
<td>.826</td>
<td>.762</td>
<td>70.5</td>
<td>3.5</td>
<td>82.5</td>
</tr>
<tr>
<td>21</td>
<td>.837</td>
<td>.782</td>
<td>71</td>
<td>4.5</td>
<td>82</td>
</tr>
<tr>
<td>22</td>
<td>.883</td>
<td>.770</td>
<td>70</td>
<td>4.</td>
<td>81</td>
</tr>
<tr>
<td>23</td>
<td>.820</td>
<td>.727</td>
<td>70</td>
<td>4.</td>
<td>82.5</td>
</tr>
<tr>
<td>24</td>
<td>.797</td>
<td>.694</td>
<td>72</td>
<td>6.5</td>
<td>89.5</td>
</tr>
<tr>
<td>25</td>
<td>.820</td>
<td>.740</td>
<td>71.5</td>
<td>4.5</td>
<td>81</td>
</tr>
<tr>
<td>26</td>
<td>.808</td>
<td>.713</td>
<td>70.5</td>
<td>4.</td>
<td>81.5</td>
</tr>
<tr>
<td>27</td>
<td>.783</td>
<td>.700</td>
<td>70.5</td>
<td>4.5</td>
<td>83.5</td>
</tr>
<tr>
<td>28</td>
<td>.780</td>
<td>.690</td>
<td>70.5</td>
<td>4.5</td>
<td>84</td>
</tr>
<tr>
<td>29</td>
<td>.752</td>
<td>.664</td>
<td>72</td>
<td>4.</td>
<td>84</td>
</tr>
<tr>
<td>30</td>
<td>.768</td>
<td>.682</td>
<td>73.5</td>
<td>4.5</td>
<td>82.5</td>
</tr>
<tr>
<td>31</td>
<td>.778</td>
<td>.666</td>
<td>71.5</td>
<td>4.</td>
<td>77</td>
</tr>
</tbody>
</table>

**Means,** 29.750 .670 72.4 4.2 83.1 11.8 66.4 83.9
### Meteorological Register for the month of November, 1836, kept at Titalya and elsewhere.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$8\frac{1}{2}$</td>
<td>$4\frac{1}{2}$ A. M. P. M.</td>
<td>$8\frac{1}{2}$</td>
<td>$4\frac{1}{2}$ A. M. P. M.</td>
<td>Depression of the moistened bulb.</td>
</tr>
<tr>
<td>Titalya,</td>
<td>29.742</td>
<td>29.644</td>
<td>70</td>
<td>79.5</td>
<td>3</td>
</tr>
<tr>
<td>Ditto,</td>
<td>3.640</td>
<td>520</td>
<td>70.5</td>
<td>80.5</td>
<td>4</td>
</tr>
<tr>
<td>Ditto,</td>
<td>3.616</td>
<td>544</td>
<td>67</td>
<td>78</td>
<td>3</td>
</tr>
<tr>
<td>Ditto,</td>
<td>4.737</td>
<td>686</td>
<td>63.5</td>
<td>80.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>5.804</td>
<td>749</td>
<td>69</td>
<td>80.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>5.820</td>
<td>690</td>
<td>69</td>
<td>81</td>
<td>5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>7.760</td>
<td>692</td>
<td>68</td>
<td>81</td>
<td>5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>8.827</td>
<td>748</td>
<td>68.5</td>
<td>79</td>
<td>5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>9.846</td>
<td>754</td>
<td>69</td>
<td>79.5</td>
<td>6</td>
</tr>
<tr>
<td>Ditto,</td>
<td>10.771</td>
<td>700</td>
<td>67</td>
<td>80</td>
<td>5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>11.793</td>
<td></td>
<td>66</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Rane Daghah,</td>
<td>12.720</td>
<td></td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teprah Munni,</td>
<td>13.596</td>
<td>28.960</td>
<td>64</td>
<td>69.5</td>
<td>6</td>
</tr>
<tr>
<td>Ditto,</td>
<td>14.660</td>
<td>940</td>
<td>66</td>
<td>71</td>
<td>5.5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>15.827</td>
<td></td>
<td>63</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Dimali Golah,</td>
<td>16.231</td>
<td>146</td>
<td>61</td>
<td>66.5</td>
<td>4</td>
</tr>
<tr>
<td>Ditto,</td>
<td>17.204</td>
<td>128</td>
<td>60</td>
<td>69</td>
<td>5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>18.229</td>
<td>155</td>
<td>60</td>
<td>66</td>
<td>4</td>
</tr>
<tr>
<td>Ditto,</td>
<td>19.226</td>
<td>141</td>
<td>60</td>
<td>68</td>
<td>5.5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>20.200</td>
<td></td>
<td>58</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Samdung,</td>
<td>21.272</td>
<td>169</td>
<td>57</td>
<td>62</td>
<td>2</td>
</tr>
<tr>
<td>Ditto,</td>
<td>22.155</td>
<td>109</td>
<td>58</td>
<td>63</td>
<td>3</td>
</tr>
<tr>
<td>Ditto,</td>
<td>23.160</td>
<td>053</td>
<td>57</td>
<td>64</td>
<td>2.5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>24.150</td>
<td>073</td>
<td>57</td>
<td>64</td>
<td>3</td>
</tr>
<tr>
<td>Ditto,</td>
<td>25.135</td>
<td></td>
<td>54</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Tikie Bong,</td>
<td>26.24000</td>
<td>23.960</td>
<td>45</td>
<td>54</td>
<td>10</td>
</tr>
<tr>
<td>Ditto,</td>
<td>27.073</td>
<td>24.054</td>
<td>46</td>
<td>55</td>
<td>6.5</td>
</tr>
<tr>
<td>Ditto,</td>
<td>28.137</td>
<td>094</td>
<td>46</td>
<td>54.5</td>
<td>7</td>
</tr>
<tr>
<td>Ditto,</td>
<td>29.140</td>
<td>079</td>
<td>47</td>
<td>52</td>
<td>4</td>
</tr>
<tr>
<td>Ditto,</td>
<td>30.126</td>
<td>071</td>
<td>49</td>
<td>50.5</td>
<td>5.5</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------</td>
<td>-----------------------------</td>
<td>--------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>9 A.M.</td>
<td>5 P.M.</td>
<td>9 A.M.</td>
<td>5 P.M.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------</td>
<td>-----------------------------</td>
<td>--------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>1 23.356 23.299 47 46.5 6 6.5 38 51 Rain. .. N. E. S. E. Fragts. cumuli. Nimbl. 200.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 34.8 30.8 43 43 5 5 36 48 ditto .. N. W. N. W. Overcast. Overcast. 199.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 39.2 35.9 44 44 6 5 34 48 ditto .. N. F. ditto. 199.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 43.9 39.1 42.1 43 4.5 35 47.5 Sw. E. N. ditto. Cumul. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 45.3 43.0 43 47 8 9 33 50 .. E. N. W. Clear. Clear. 200.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 48.3 44.0 44 50 9 8.5 34 54 .. N. E. Bright all day. 200.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 47.5 42.3 46 51 7 9 35 54.5 N. Calm. ditto. 200.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 43.4 39.8 44 51 11 9 36 53 W. S. W. Clear. Few cirri. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 40.3 35.8 45 50 8 11 35.5 53 Calm. W. ditto. Cirri. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 37.3 33.3 43 49.5 7.5 10 35 51.5 N. W. Clear all day. 199.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 39.3 33.2 42.5 45.5 5 7.5 35.5 51.6 N. E. N. W. Few light cumuli. Few cumuli. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 38.8 31.7 45 50.5 8 6.5 36.5 56.5 W. N. E. Cirri. Cirri. 199.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 37.1 32.0 42.5 46 5 6 36.5 51.5 W. W. Overcast, cloudy all day. Overcast. 199.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 40.0 31.4 45.5 51 9 10 32.5 54 N. W. Clear all day. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 38.6 29.6 46 50 8 9 33 53 N. Calm. ditto. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 39.2 34.1 46 52 9.5 12 34 55 W. W. N. W. ditto. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 394 37.0 47 52 10 9 35 54.5 N. E. Calm. ditto. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 392 31.2 52 51 9 9 35 54 S. S. W. Clear, a few clouds at noon. Clear. 199.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 335 30.3 45.5 48 5.5 7 36.5 53.5 W. E. S. W. Overcast, cloudy all day. Overcast. 199.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 341 28.9 45 46 6 5.5 35 40.5 W. S. W. S. W. Overcast. 199.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 326 25.4 44 49 7 7.5 33 52 Calm. W. S. W. W. W. W. S. W. Cumuli. Cumul. 200.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 330 27.0 45 45 5 4 33.5 48.5 N. N. E. N. W. Overcast. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 342 27.4 41 42 4 4 35 50 N. W. S. W. Clear all day. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 343 28.8 43 46 5 5 34 49 N. W. S. W. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 386 32.4 44 48 5 8.5 33.5 49.5 N. N. E. S. W. Fragts. cum. do, 4 day. Few cum. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 412 35.6 41 45.5 6 7 34 50 W. S. W. W. Clear. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27 480 41.2 41 48 5.5 7 34 51 N. E. Calm. Clear all day. 200.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 485 32.0 51 49 18 9 38.5 55 N. S. W. Bright all day. 200.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29 331 228 46 43 8 5.5 34 50.5 S. S. W. Clear. Overcast. 200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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. 189. Dew-point of Hygrometer 29°. Min. Temp. during the night... 38.5 Ice above ½ an inch thick in the morning. Hoar frost and ice every morning, excepting 15th, 20th, 21st, 22nd, and 24th.
### Meteorological Register kept at Darjiling, for the month of January, 1837.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23.333</td>
<td>23.272</td>
<td>43</td>
<td>42.5</td>
<td>5</td>
<td>34</td>
<td>50.5</td>
<td></td>
<td></td>
<td>Calm. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>2</td>
<td>2.333</td>
<td>23.272</td>
<td>43</td>
<td>42.5</td>
<td>5</td>
<td>34</td>
<td>46.5</td>
<td></td>
<td></td>
<td>ditto Calm.</td>
<td>199.8</td>
</tr>
<tr>
<td>3</td>
<td>3.140</td>
<td>29.25</td>
<td>40.5</td>
<td>45</td>
<td>7</td>
<td>32.5</td>
<td>49.5</td>
<td></td>
<td></td>
<td>N. W.</td>
<td>199.8</td>
</tr>
<tr>
<td>4</td>
<td>4.000</td>
<td>30.08</td>
<td>52</td>
<td>51</td>
<td>16</td>
<td>36</td>
<td>54</td>
<td></td>
<td></td>
<td>Calm. Calm.</td>
<td>200.0</td>
</tr>
<tr>
<td>5</td>
<td>4.341</td>
<td>24.10</td>
<td>55</td>
<td>55</td>
<td>16</td>
<td>39</td>
<td>56</td>
<td></td>
<td></td>
<td>N. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>6</td>
<td>5.341</td>
<td>26.58</td>
<td>45.5</td>
<td>9</td>
<td>5</td>
<td>34</td>
<td>51</td>
<td></td>
<td></td>
<td>N. S. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>7</td>
<td>5.365</td>
<td>33.00</td>
<td>44</td>
<td>6</td>
<td>6</td>
<td>33</td>
<td>48</td>
<td></td>
<td></td>
<td>Calm. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>8</td>
<td>5.430</td>
<td>36.56</td>
<td>44.5</td>
<td>7</td>
<td>5</td>
<td>33</td>
<td>51</td>
<td></td>
<td></td>
<td>N. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>9</td>
<td>5.404</td>
<td>33.56</td>
<td>47</td>
<td>3</td>
<td>5</td>
<td>34</td>
<td>50.5</td>
<td></td>
<td></td>
<td>Calm. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>10</td>
<td>5.380</td>
<td>26.85</td>
<td>37.5</td>
<td>*</td>
<td>5.5*</td>
<td>31</td>
<td>37.5</td>
<td></td>
<td></td>
<td>Snow. W.N.W.E. N. E.</td>
<td>200.0</td>
</tr>
<tr>
<td>11</td>
<td>5.380</td>
<td>32.22</td>
<td>39</td>
<td>5</td>
<td>2</td>
<td>29</td>
<td>45</td>
<td></td>
<td></td>
<td>N. E. Calm.</td>
<td>199.8</td>
</tr>
<tr>
<td>12</td>
<td>5.390</td>
<td>35.00</td>
<td>43</td>
<td>4</td>
<td>3</td>
<td>31</td>
<td>45</td>
<td></td>
<td></td>
<td>S.S.E. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>13</td>
<td>5.404</td>
<td>31.66</td>
<td>38</td>
<td>3</td>
<td>3</td>
<td>31</td>
<td>45</td>
<td></td>
<td></td>
<td>Clear.</td>
<td>200.0</td>
</tr>
<tr>
<td>14</td>
<td>5.413</td>
<td>31.31</td>
<td>39</td>
<td>2</td>
<td>2</td>
<td>31</td>
<td>41</td>
<td></td>
<td></td>
<td>N. W. S. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>15</td>
<td>5.413</td>
<td>34.41</td>
<td>41</td>
<td>2.5</td>
<td>2</td>
<td>30</td>
<td>43</td>
<td></td>
<td></td>
<td>N. E. N. E.</td>
<td>200.0</td>
</tr>
<tr>
<td>16</td>
<td>5.419</td>
<td>37.22</td>
<td>40</td>
<td>2.5</td>
<td>2</td>
<td>30</td>
<td>47.5</td>
<td></td>
<td></td>
<td>S. W. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>17</td>
<td>5.391</td>
<td>30.84</td>
<td>42</td>
<td>4</td>
<td>3</td>
<td>31</td>
<td>47.5</td>
<td></td>
<td></td>
<td>S. W. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>18</td>
<td>5.413</td>
<td>34.82</td>
<td>46</td>
<td>6</td>
<td>5</td>
<td>31</td>
<td>50.5</td>
<td></td>
<td></td>
<td>N. E. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>19</td>
<td>5.391</td>
<td>26.38</td>
<td>40.5</td>
<td>4.5</td>
<td>5</td>
<td>31</td>
<td>47.5</td>
<td></td>
<td></td>
<td>Calm. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>20</td>
<td>5.284</td>
<td>18.11</td>
<td>42.5</td>
<td>2.5</td>
<td>1</td>
<td>31</td>
<td>42.5</td>
<td></td>
<td></td>
<td>Calm. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>21</td>
<td>5.284</td>
<td>22.22</td>
<td>42</td>
<td>3</td>
<td>3</td>
<td>31</td>
<td>45</td>
<td></td>
<td></td>
<td>S. S.E. N. W.</td>
<td>199.8</td>
</tr>
<tr>
<td>22</td>
<td>5.280</td>
<td>19.40</td>
<td>44</td>
<td>2</td>
<td>2</td>
<td>31</td>
<td>46</td>
<td></td>
<td></td>
<td>Calm. W.</td>
<td>199.8</td>
</tr>
<tr>
<td>23</td>
<td>5.273</td>
<td>22.22</td>
<td>45</td>
<td>2.5</td>
<td>2</td>
<td>31</td>
<td>45</td>
<td></td>
<td></td>
<td>W. Calm.</td>
<td>200.0</td>
</tr>
<tr>
<td>24</td>
<td>5.267</td>
<td>20.44</td>
<td>42.5</td>
<td>2</td>
<td>2</td>
<td>31</td>
<td>45</td>
<td></td>
<td></td>
<td>Overcast misty.</td>
<td>200.0</td>
</tr>
<tr>
<td>25</td>
<td>5.273</td>
<td>20.44</td>
<td>46</td>
<td>2</td>
<td>2</td>
<td>31</td>
<td>45</td>
<td></td>
<td></td>
<td>N. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>26</td>
<td>5.268</td>
<td>20.58</td>
<td>44</td>
<td>3.5</td>
<td>5</td>
<td>36</td>
<td>49</td>
<td>.06</td>
<td>Hall.</td>
<td>SW. sqs. W. sqs.</td>
<td>200.0</td>
</tr>
<tr>
<td>27</td>
<td>5.326</td>
<td>18.04</td>
<td>40</td>
<td>3</td>
<td>3</td>
<td>31</td>
<td>41</td>
<td>.09</td>
<td></td>
<td>N. W.</td>
<td>199.5</td>
</tr>
<tr>
<td>28</td>
<td>5.232</td>
<td>19.02</td>
<td>40.5</td>
<td>2</td>
<td>3</td>
<td>31</td>
<td>44</td>
<td>.05</td>
<td></td>
<td>N. Calm.</td>
<td>199.5</td>
</tr>
<tr>
<td>29</td>
<td>5.370</td>
<td>20.00</td>
<td>40</td>
<td>2</td>
<td>3</td>
<td>30</td>
<td>47.5</td>
<td></td>
<td></td>
<td>Rain.</td>
<td>200.0</td>
</tr>
<tr>
<td>30</td>
<td>5.355</td>
<td>27.00</td>
<td>45</td>
<td>3</td>
<td>3</td>
<td>33</td>
<td>48</td>
<td></td>
<td></td>
<td>Calm. W.</td>
<td>200.0</td>
</tr>
<tr>
<td>31</td>
<td>5.305</td>
<td>24.14</td>
<td>40</td>
<td>2.5</td>
<td>1.5</td>
<td>32</td>
<td>42</td>
<td></td>
<td></td>
<td>N. E. Calm.</td>
<td>200.0</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 A.M.</td>
<td>5 P.M.</td>
<td>9 A.M.</td>
<td>5 P.M.</td>
<td>Min.</td>
<td>Max. Inches</td>
<td></td>
</tr>
<tr>
<td>23.344</td>
<td>23.284</td>
<td>43</td>
<td>42</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2.324</td>
<td>2.279</td>
<td>43.5</td>
<td>42.5</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3.394</td>
<td>3.332</td>
<td>42.5</td>
<td>45.5</td>
<td>3</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>4.387</td>
<td>4.327</td>
<td>49.5</td>
<td>50.5</td>
<td>3</td>
<td>6</td>
<td>34</td>
</tr>
<tr>
<td>5.362</td>
<td>5.237</td>
<td>47.5</td>
<td>47</td>
<td>3</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>6.318</td>
<td>6.239</td>
<td>42</td>
<td>45</td>
<td>2</td>
<td>2</td>
<td>34</td>
</tr>
<tr>
<td>7.364</td>
<td>7.318</td>
<td>47</td>
<td>49</td>
<td>4</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>8.416</td>
<td>8.350</td>
<td>43</td>
<td>49</td>
<td>3</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>9.366</td>
<td>9.253</td>
<td>45.5</td>
<td>45.5</td>
<td>3.5</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>10.354</td>
<td>10.250</td>
<td>45</td>
<td>43.5</td>
<td>2.5</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td>11.280</td>
<td>11.191</td>
<td>47</td>
<td>44</td>
<td>4</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>12.181</td>
<td>12.124</td>
<td>42</td>
<td>41.5</td>
<td>1</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>13.187</td>
<td>13.157</td>
<td>37</td>
<td>42</td>
<td>1.5</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td>14.255</td>
<td>14.177</td>
<td>34</td>
<td>36</td>
<td>2</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>15.293</td>
<td>15.252</td>
<td>36</td>
<td>37</td>
<td>4.5</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>16.272</td>
<td>16.213</td>
<td>35</td>
<td>37</td>
<td>2</td>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>17.348</td>
<td>17.327</td>
<td>38</td>
<td>42.5</td>
<td>2</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>18.376</td>
<td>18.320</td>
<td>41</td>
<td>40</td>
<td>2</td>
<td>3</td>
<td>33</td>
</tr>
<tr>
<td>19.350</td>
<td>19.328</td>
<td>43</td>
<td>50</td>
<td>2</td>
<td>3</td>
<td>33</td>
</tr>
<tr>
<td>20.369</td>
<td>20.353</td>
<td>45.5</td>
<td>51</td>
<td>1.5</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>21.442</td>
<td>21.411</td>
<td>46</td>
<td>52</td>
<td>2</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>22.450</td>
<td>22.391</td>
<td>45.5</td>
<td>51</td>
<td>1.5</td>
<td>4</td>
<td>38</td>
</tr>
<tr>
<td>23.396</td>
<td>23.315</td>
<td>52</td>
<td>51</td>
<td>6</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>24.368</td>
<td>24.296</td>
<td>47</td>
<td>46</td>
<td>2</td>
<td>2</td>
<td>38</td>
</tr>
<tr>
<td>25.277</td>
<td>25.194</td>
<td>45.5</td>
<td>48</td>
<td>2.5</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>26.227</td>
<td>26.179</td>
<td>44.5</td>
<td>46</td>
<td>3.5</td>
<td>2</td>
<td>38</td>
</tr>
<tr>
<td>27.276</td>
<td>27.237</td>
<td>46.5</td>
<td>51</td>
<td>1.5</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>28.346</td>
<td>28.294</td>
<td>46</td>
<td>49</td>
<td>1.5</td>
<td>3</td>
<td>38</td>
</tr>
<tr>
<td>23.335</td>
<td>23.274</td>
<td>43.5</td>
<td>45.5</td>
<td>2.9</td>
<td>3.1</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.52</td>
</tr>
</tbody>
</table>

Frost on the 2nd, 4th, 5th, 6th, 7th, 8th, 9th, 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.
On the Climate of Darjiling

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Morn. Even.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Morning.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Evening.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>By Ther. No. 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>By J. P.'s.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>23.432</td>
<td>23.342</td>
<td>54</td>
<td>49</td>
<td>51</td>
<td>45</td>
<td>48 44</td>
</tr>
<tr>
<td>2</td>
<td>.380</td>
<td>268</td>
<td>55</td>
<td>47.5</td>
<td>55</td>
<td>45</td>
<td>40 56</td>
</tr>
<tr>
<td>3</td>
<td>.312</td>
<td>254</td>
<td>56</td>
<td>44</td>
<td>56</td>
<td>56</td>
<td>43 48</td>
</tr>
<tr>
<td>4</td>
<td>.376</td>
<td>275</td>
<td>52</td>
<td>46.5</td>
<td>53.5</td>
<td>48</td>
<td>39 55</td>
</tr>
<tr>
<td>5</td>
<td>.376</td>
<td>315</td>
<td>53</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>47 49</td>
</tr>
<tr>
<td>6</td>
<td>.375</td>
<td>320</td>
<td>52</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>47 49</td>
</tr>
<tr>
<td>7</td>
<td>.384</td>
<td>312</td>
<td>53</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>47 49</td>
</tr>
<tr>
<td>8</td>
<td>.417</td>
<td>350</td>
<td>58</td>
<td>51</td>
<td>56</td>
<td>50</td>
<td>42 59</td>
</tr>
<tr>
<td>9</td>
<td>.439</td>
<td>380</td>
<td>53</td>
<td>50</td>
<td>53</td>
<td>50</td>
<td>43 56</td>
</tr>
<tr>
<td>10</td>
<td>.412</td>
<td>290</td>
<td>55</td>
<td>50</td>
<td>55</td>
<td>50</td>
<td>45 58</td>
</tr>
<tr>
<td>11</td>
<td>.332</td>
<td>256</td>
<td>58</td>
<td>44</td>
<td>55</td>
<td>55</td>
<td>43 59</td>
</tr>
<tr>
<td>12</td>
<td>.388</td>
<td>337</td>
<td>57</td>
<td>46</td>
<td>55</td>
<td>47</td>
<td>41 53</td>
</tr>
<tr>
<td>13</td>
<td>.287</td>
<td>150</td>
<td>54</td>
<td>47</td>
<td>50</td>
<td>50</td>
<td>41 54</td>
</tr>
<tr>
<td>14</td>
<td>.215</td>
<td>167</td>
<td>53</td>
<td>46</td>
<td>54</td>
<td>54</td>
<td>37 54</td>
</tr>
<tr>
<td>15</td>
<td>.367</td>
<td>246</td>
<td>54</td>
<td>47</td>
<td>53</td>
<td>47</td>
<td>40 55</td>
</tr>
<tr>
<td>16</td>
<td>.400</td>
<td>310</td>
<td>55</td>
<td>48</td>
<td>55</td>
<td>55</td>
<td>43 59</td>
</tr>
<tr>
<td>17</td>
<td>.396</td>
<td>283</td>
<td>54</td>
<td>45</td>
<td>56</td>
<td>56</td>
<td>43 57</td>
</tr>
<tr>
<td>18</td>
<td>.360</td>
<td>246</td>
<td>56.5</td>
<td>52</td>
<td>52</td>
<td>48</td>
<td>43 57</td>
</tr>
<tr>
<td>19</td>
<td>.270</td>
<td>162</td>
<td>56.5</td>
<td>51.5</td>
<td>53.5</td>
<td>58</td>
<td>45 55</td>
</tr>
<tr>
<td>20</td>
<td>.272</td>
<td>223</td>
<td>59</td>
<td>50</td>
<td>60</td>
<td>51</td>
<td>63 50</td>
</tr>
<tr>
<td>21</td>
<td>.379</td>
<td>319</td>
<td>58</td>
<td>51</td>
<td>56</td>
<td>51</td>
<td>45 51</td>
</tr>
<tr>
<td>22</td>
<td>.396</td>
<td>326</td>
<td>54</td>
<td>50</td>
<td>54</td>
<td>54</td>
<td>47 58</td>
</tr>
<tr>
<td>23</td>
<td>.373</td>
<td>300</td>
<td>53</td>
<td>51</td>
<td>56</td>
<td>56</td>
<td>47 57</td>
</tr>
<tr>
<td>24</td>
<td>.364</td>
<td>314</td>
<td>56</td>
<td>52</td>
<td>58</td>
<td>54</td>
<td>48 55</td>
</tr>
<tr>
<td>25</td>
<td>.373</td>
<td>358</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>48 56</td>
</tr>
<tr>
<td>26</td>
<td>.233</td>
<td>158</td>
<td>65</td>
<td>55</td>
<td>65</td>
<td>55</td>
<td>49 66</td>
</tr>
<tr>
<td>27</td>
<td>.191</td>
<td>0.61</td>
<td>49.5</td>
<td>61</td>
<td>55.5</td>
<td>65</td>
<td>48 64</td>
</tr>
<tr>
<td>28</td>
<td>.237</td>
<td>179</td>
<td>62</td>
<td>49</td>
<td>59</td>
<td>59</td>
<td>47 62</td>
</tr>
<tr>
<td>29</td>
<td>.310</td>
<td>221</td>
<td>58.5</td>
<td>47</td>
<td>59</td>
<td>59</td>
<td>45 61</td>
</tr>
</tbody>
</table>

Mns 23.348  23.263  56  48.9  55.7  48.7  43.1  58.4  47.3  47.2  0.10

* 13th, 49° but immediately vanished. 2nd observation gave the results as stated in the column.
† 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 subconornous 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 Cephalapoda.

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'Shaughnessy, 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 Cochin-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 intende{d for on London has
been immediately disposed of. Capt. Troyer's French translation of the Raja
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 Ware-
house-keeper, and passing the bill for their package, Rs. 17.

The Secretary reported the death of Behadur, the pensioned furush 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.
Proceedings of the Asiatic Society, [April, 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.


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 Cyclopaedia, Literary Men, I. 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 Khandgiri, 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 Bovaneswar and Khandgiri, 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 Khandgiri 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 Poorer road, and near Piplee at the N. W. corner of the famous tank named Koula-gung: it is called 'Asvastama.' 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 scarps 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 26, and a fourth of 94 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 Khandgiri, 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 brâhman, 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 Raja of Orissa, who founded Bhûbaneswar temple. The Meeting resolved unanimously, that the slabs should be restored, and that Lieutnant Kittoe had their warmest thanks for the suggestion.

Read a letter from Lieutenant Sale, Engineers, dated Allshabad, 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 raja by name Parma'lik. The resident brâhmanes 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 râja in the Satya yuga from a loathsome cutaneous disorder."

The Secretary exhibited Mr. Vincent Tregear'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 Vieramâditya 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 Balaâditya, 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 Asiatic Society's Transactions. 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.

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Magnets</th>
</tr>
</thead>
</table>
| 1813       | Mean of Maj. Hodgson's obs. in N. West. Provinces | 0 41 East.
| 1821       | March, observations at Benares, by J. Prinsep | 0 53 do. |
| 1822       | April, ditto, ditto, ditto, ditto | 1 1 do. |
| 1823       | March, ditto, ditto, ditto | 1 27 do. |
| 1827       | November, at Calcutta, by Captain Fabre, Surveyor General | 2 33 54 do. |
| 1828       | February, ditto, ditto, ditto | 2 28 36 do. |
| 1829       | June, ditto, ditto, ditto | 2 41 16 do. |
| 1837       | 14th April, at Diamond Harbour, La Bonite, 4 needles | 3 37 East. |
Inclination, or dip.

1827, November, at Calcutta, by M. Blossville, .................. 26 32 38 N.
1822, February, ditto, by J. Prinsep, .................. 26 42 ? N.
1837, April, at Diamond Harbour, 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 Topir, 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 mysterizans?) 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. Caunter) of one found near the Sevalik 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:—

Extreme length of the reptile, .................. 4 11
Circumference of the thickest part of body, .................. 0 2
Ditto of the neck, .................. 0 1
Breadth of the widest part of the head, .................. 0 0
Length of ditto, .................. 0 1
Projection of the upper jaw or snout, .................. 0 0
Length from snout to the vent, .................. 3 2
Ditto vent to end of the tail, .................. 1 9
Abdominal plates or scales, .................. 185
Subcaudal to extremity of tail, .................. 250

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 Mahánaddi, 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 Hindooe, 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 Mahánaddi, 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 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 ½ 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.
Proceedings of the Asiatic Society.

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 Royse remarks, that all the trees on which the silk-worms feed 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, ferrugined, 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 Raptorees, one on a new species of Scolopacidae, 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 Siwalik and the Awa 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. 1.68.

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 aetus of a species of ovi-viviparous shark preserved in spirits, by the Hon'ble Colonei Morison, in the name of Mr. W. Ewin, Branch Pilot.

To the factus of the shark the yolk bag is still attached by the funis. Colonei 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 larva, 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 larvae 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 image 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 larvae in the interior of the tree. The general direction of the passages made by the larvae is perpendicular; while that of the exit of the imago is horizontal—the shortest way in fact to the sir.

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 Emu.

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.
<table>
<thead>
<tr>
<th>Day of the Month</th>
<th>Observations at 10 A.M.</th>
<th>Calculated Humidity</th>
<th>Observations at 4 P.M.</th>
<th>Calculated Humidity</th>
<th>Register Thermometer extremes</th>
<th>Wind</th>
<th>Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Barometer at 29°.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rain</td>
<td>Morning</td>
</tr>
<tr>
<td>1</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>4</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>6</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>8</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>10</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>11</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>12</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>13</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>14</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>15</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>16</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>17</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>18</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>19</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>20</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>21</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>22</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>23</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>24</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>25</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>26</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>27</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>28</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>29</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>30</td>
<td>30,761</td>
<td>85.7</td>
<td>15.5, 15.1, 15.8</td>
<td>96</td>
<td>40</td>
<td>33</td>
<td>40</td>
</tr>
</tbody>
</table>

Mean, 30,761.578, 87.4, 10.5, 10.6, 86.5, 96.0 58 56 61 29,630, 15.1, 19.4, 20.4, 61.7, 64 35 39 39 73.6, 116.6, 0.9 South west. unusually hot and dry.

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 of a visit to the Mishmee hills in Assam. By Wm. Griffith, M.D. Madras Medical Establishment.

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 Brahmaputra, or Lohit, to the mouth of the Karam Pânee, 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 Chonpûra the rapids of the Brahmapûtra 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*, *udal†*, 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 Râja 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 Kamptees 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-künd, which, from Captain Wilcox’s description, I imagined to be the usual route to the interior. Brahma-künd 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 Dai 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 künd, 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 künd, 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 künd 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 künd 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 kând, 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 Sadiyd 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 Pânee 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 Lei Pânee, 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 Thunathaya 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 Khosha'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 Khosha's I proceeded to Pkimsong's, whose village is at a much higher elevation than any of the others: but Pkimsong was unfortunately absent. This was the extreme point to which I was enabled
Journal of a visit to

May,

328
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, Roiling, 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 de-
lay that would take place before I met Captain Hannay, a longer so-
journ 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 con-
siderable 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 Dai Pance 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.—Pirmsong 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 künd. 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 Composite, Urticaceae, Balsaminaceae, Cyathandiacae, Acanthaceae, Gramineae 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 Ranunculaceae, including that valuable drug the Mishnee-Tee, and the celebrated poison Bee. Fumareaceae, Violaces, Camelliaceae, Humamelidaceae, including the Bucklandia and Sedgwickia, Gentianaceae, Vaccinaceae, Campanulaceae, Thymalee, Juglandaceae, Cupuliferae. The most unique plants is a new genus of Rafflesiaee, 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, Taaen 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 Taaens, 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 Tapun. 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 Ghahoom: 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 dhoti,—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:

<table>
<thead>
<tr>
<th>Village</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jingsha</td>
<td>50</td>
</tr>
<tr>
<td>Tapan</td>
<td>80</td>
</tr>
<tr>
<td>Deeling and Yeu</td>
<td>80</td>
</tr>
<tr>
<td>Ghalooms</td>
<td>80</td>
</tr>
<tr>
<td>Khasha</td>
<td>100</td>
</tr>
<tr>
<td>Primsong</td>
<td>70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>460</strong></td>
</tr>
</tbody>
</table>

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 Khashus. 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 marantaceous 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 buffa-
lo; 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 _bobasa_*, _goomdan_† or Indian
corn, _khonee_‡ and two or three still inferior grains. The villages
situated at low elevations produce excellent yams and _aloos_ of seve-
ral 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

* _Elenine caracana._ † _Tea woya._ ‡ _Davaea 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 Singphios 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 Panee, 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 gertheeana 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 Raja 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 Rajas 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 shown 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 Himalayas, 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 Meyho chief, from whom the chief opposition is to be apprehended, being located along the Lohit to the westward of the junction of the Ghaloom Panama. 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 Karau to the east, thence diverging to the south along the now nearly dry bed of the Kampiee. 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 Panee. 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 Sadiya, 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 dhoaos. 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 ahoor 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 Sadiya. 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 Chykwas 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 Feungree, 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 Dhompoan, a large Singpho village, half way between the Naga village, and Rapoo, Rusoo; and, lastly, Rupádoó. 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, forf acility 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 of persons 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.

<table>
<thead>
<tr>
<th>Page 14.</th>
<th>Age 23, 1st year. 2nd. 3rd. 4th. 5th. 6th. 7th. 8th. 9th. 10th. &amp;c.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>1 1 1 1 1</td>
</tr>
<tr>
<td>B.</td>
<td>1 1 1 1 1</td>
</tr>
<tr>
<td>C.</td>
<td>1 1 1 1 mar. 1</td>
</tr>
<tr>
<td>D.</td>
<td>1 1 1 1 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E.</td>
<td>1 1 1 1 1</td>
</tr>
<tr>
<td>F.</td>
<td>1 1 1 1 1</td>
</tr>
<tr>
<td>G.</td>
<td>1 1 1 1 1</td>
</tr>
<tr>
<td>H.</td>
<td>1 1 1 1 1</td>
</tr>
</tbody>
</table>

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.
Estimate of Life in the Civil Service.

Estimate

343
doubt
in
ters.
be
each
similar
consideration.
age
or
of
are
Researches
of

cident
likewise

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.

2 y 2
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.

<table>
<thead>
<tr>
<th>Nominations</th>
<th>Deaths</th>
<th></th>
<th>Retirements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>In or after</td>
<td>Before</td>
<td>In or after</td>
</tr>
<tr>
<td></td>
<td>20th year.</td>
<td>20th year.</td>
<td>20th year.</td>
<td>20th year.</td>
</tr>
<tr>
<td>1790 19</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>1792 18</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>1794 26</td>
<td>12</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>1798 32</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>10</td>
</tr>
</tbody>
</table>
| 95           | 33     | 51     | 15          | 44     | 29

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 supersede 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.

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of Servants</th>
<th>Deaths</th>
<th>Total deaths in 5 years</th>
<th>Percentage rate of deaths in 10,000</th>
<th>Retirements actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>196</td>
<td>19</td>
<td>90</td>
<td>199</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>296</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>345</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>57</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>73</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>101</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>129</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>154</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>183</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>212</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>247</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>276</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>312</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>342</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>370</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>191</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>228</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>260</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>300</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>341</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>382</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>420</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>456</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>497</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>543</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>584</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>616</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>642</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Percentage rate of deaths in 10,000 is calculated from the actual casualties upon the nominations made to the Bengal Civil Service from 1790 to 1836.
III.—A Grammar of the Sindhi 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 Musulman; 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;—enlivened 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 Shikarpur and Multan." 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 Sindhi 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 Sindhis to Bombay, where for the last 20 or 30 years at least 10,000 persons, the greater part of the population of Tatta, have become domiciled, speaking and writing their own tongue.

The Sindhi language is spoken "through the whole province of Sindh, and is said to be understood as far north as the territories of
BAHA’WAL KHAN, the Derajat, and Multan; it prevails westward in Cutch-Gandava, Shal, Mastung and Pishin; 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, Sind 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 Sind and Marwar merchant of the present day. They have their branch kothis 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 hoondee circulation—the monopoly of banking business throughout the country. “The adventurous nations of Shikarpur and Multan 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 Astrakhan, through Baluchistan and Seistan, as well as at Hirat, and Bokhara: 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 Shikarpur or Multan (add Bombay, Calcutta, or Benares) might from them obtain bills of exchange on Russia, Persia, Khorasan, and Central Asia.”

The neighbouring province of Gujar is equally celebrated for its early commercial enterprise. 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 Gujarati 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 Gujar, 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 Potala, 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 (Mahi 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. Csóma Kööös extracts the following particulars regarding it from the Tibetan authorities.

"Potala or Potalaka (Tib. བོད་ལྕགས་ རྒྱ་མཚན, 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 Ixwákù 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 Kosula 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, བོད་ལྕགས, because Chen-kzek (제나라) the patron of the Tibetans, the spiritual son of Amitabha, is said to have resided at Potala in ancient India, and to have visited Tibet from that place*."

The Sindhian origin of the Rajput 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 Brijbhád or pure Hindi 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 Hindi, 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 knowlege 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.

* Csóma's MSS. See the Observations of M. Burnouf in the preceding number, page 291.
† Or rather, none at all in the Hindi; for thá the thí belong to the Hindustání or Urdu.
Conjugation of the Sindhi auxiliary verbs, to be.

**Infinitive.** *Ho-wan* (Sanskrit root यु)  
*T hi-yan* (S. यृ, or ब्रि?)

<table>
<thead>
<tr>
<th>Indicative</th>
<th>1st Present</th>
<th>2nd Present</th>
<th>1st Imperfect</th>
<th>2nd Imperfect</th>
<th>Perfect</th>
<th>Preterperfect</th>
<th>Pluperfect</th>
<th>Future</th>
<th>Subjunctive</th>
<th>Present</th>
<th>Perfect</th>
<th>Future</th>
<th>Imperative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>Ahiyan</em></td>
<td><em>I am.</em></td>
<td><em>Ahiyan</em></td>
<td><em>Hundos</em></td>
<td><em>Thiyos</em></td>
<td><em>Thiyen</em></td>
<td><em>Thiyen</em></td>
<td><em>Hundos</em></td>
<td><em>Hundos</em></td>
<td><em>Thiyos</em></td>
<td><em>Thiyan</em></td>
<td><em>Ho-tun</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Caret</td>
<td></td>
<td>Caret</td>
<td></td>
<td>Caret</td>
<td></td>
<td>Caret</td>
<td></td>
<td></td>
<td>Caret</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. <em>Tun</em></td>
<td><em>I am.</em></td>
<td>2. <em>Tun</em></td>
<td>2. <em>Hunden</em></td>
<td><em>Thiyen</em></td>
<td><em>Thiyo</em></td>
<td><em>Thiyo</em></td>
<td><em>Hunden</em></td>
<td><em>Hunden</em></td>
<td><em>Thiyen</em></td>
<td><em>Thiyo</em></td>
<td><em>Thiyo</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Ahine</em></td>
<td></td>
<td><em>Ahine</em></td>
<td></td>
<td><em>Thiyen</em></td>
<td><em>Thiyo</em></td>
<td><em>Thiyo</em></td>
<td></td>
<td></td>
<td><em>Thiyen</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Caret</td>
<td></td>
<td>Caret</td>
<td></td>
<td>Caret</td>
<td></td>
<td></td>
<td>Caret</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. <em>Huin</em></td>
<td><em>I am.</em></td>
<td>3. <em>Huin</em></td>
<td>3. <em>Hundo</em></td>
<td><em>Thiyo</em></td>
<td><em>Thiyen</em></td>
<td><em>Thiyo</em></td>
<td><em>Hundo</em></td>
<td><em>Hundo</em></td>
<td><em>Thiyo</em></td>
<td><em>Thiyo</em></td>
<td><em>Thiyo</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Ahiyan</em></td>
<td></td>
<td><em>Ahiyan</em></td>
<td></td>
<td><em>Thiyo</em></td>
<td><em>Thiyen</em></td>
<td><em>Thiyo</em></td>
<td></td>
<td></td>
<td><em>Thiyo</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Caret</td>
<td></td>
<td>Caret</td>
<td></td>
<td>Caret</td>
<td></td>
<td>Caret</td>
<td></td>
<td></td>
<td>Caret</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Participle present.** *Hundar,*  
Being.  
*T hi-dar*  
Thiyal

**Past.**  
*Hundar,*  
Having been.  
Thi, Thaï, Thi kare
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 awon, tun, and their plurals asi, taiwa, ap-
proach nearly to the Sanskrit aham, twam; asmān, yusmān (obj.) : but
for the third personal pronouns, as in Hindī, the demonstratives he
and hu (H. yih and whu) are employed, in lieu of the Sanskrit seh, si,
tat ; and in bhawa, sing. शः, तः ; plur. ते, तिन. In the declensions of nouns
we miss the ka-ke-ki to which Timur’s soldiery professed such an abhor-
rence, but it is merely softened into jo-jé-já. Of these, however, we
find traces in the Hindi pronominal inflexions mujhé, tujhé, which seem
be identical with mun-jo and to-jo of the Sindhi. This affix may be
the adjectival or possessive यः या of the Sanskrit : and analogies of both
might be pointed out in Greek, as in the nearly synonymous βασιλεία
and βασιλίς-κα. One example of declension will suffice:—

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom. Acc. Voc. मूर्द्ध, a man, oh man.</td>
<td>मूर्द्ध, men, oh men.</td>
</tr>
<tr>
<td>Gen. मूर्द्धजो-जे-ज।</td>
<td>मूर्द्धजो, &amp;c.</td>
</tr>
<tr>
<td>Dat. मूर्द्धक्षे.</td>
<td>मूर्द्धक्षे.</td>
</tr>
<tr>
<td>Abl. मूर्द्धक्षन।</td>
<td>मूर्द्धक्षन।</td>
</tr>
</tbody>
</table>

When the nominative ends in the vowel o the plural is in ô; the
feminine takes un in the pural, as zâl a woman, zâluan.

We do not quarrel with the author for romanizing his grammar, as it
is principally intended for European students; but we are inclined to
civil at the employment of the Persian alphabet in conjunction with the
Roman rather than the Nágari, which would certainly conform with
more facility to the palatials, dentals, and aspirates of the Indian
family: चूर्णी विषन खाँ expresses more elegantly as well as more
precisely, Buchhrí billí khon (from a bad cat) than بچه‌ی بی‌پوک.

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 charac-
ter. The extensive vocabulary attached to the grammar may there-
fore perhaps prove of use in deepening these ancient relics; though
more might be expected from a scrutiny of the language of the
soi-disant descendants of the Kāśyapī in the Kohistán. We recom-
mend M. Masson to collect vocabularies from these people and from
the Siánpóshes.

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 1½ (⅓ths) 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 Máltání letters, although strikingly similar in form to the common numerals, were all deducible from the elements of the ordinary Deva-Nágari symbols, and that they are, in fact, but one step removed from the Márwári and Mehajání 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-Nágari 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 mátrás 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 Máltání alphabets,

pronounced, Puja salámáti howen ghání Bhai Tek Chand, (with vowels) generally forms the opening (mutato nomine) of every mehájan'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 Ték Chand." The continuation is as follows:

pronounced, chha ba ra náth rāé th gajān khātri pha dhuá†.

* The meaning of the specimen of hoondee 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-
Marwari Alphabet, with and without mālārāi

Sindhi or Khudawadi Alphabet:

Multāni or Sarāi Alphabet.

Counsersign of a Sindhi hundi.
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. Chabranath Rai sounds like a name or title.

The Marwari alphabet contains two poetical lines almost as unintelligible as those of Sindh. As written by our informant a gomasha 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 Hindi and the Sanskrit dictionaries, we have restored what seems to be the right reading of the text as follows:

Sri datta dhanako samaya bha'h maha'khaghatang
A'ti pada, 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) Sri datta masculine, a charitable man. dhanako to wealth, samaya is natural. (2) Khag, the sun, a deity, (Wilson's Dict.) might lead to the supposition that the couplet was invented while the people were sun-worshippers! ghatang, may it happen. (3) Dhyo from dha"na to break down, destroy. (4) Uchar for Uchar pronunciation, utterance. (5) Jhaya a corruption from jhatah intelligence, wisdom. (6) A'h mean synonymous with A'h jhap, instantaneously.

At the bottom of the same plate we have inserted the Sindhi alphabet as written by their gomashas in Calcutta; because some of the letters vary from the Bombay form; and both differ somewhat from a genuine Sindhi alphabet procured by Lieut. Leech at Mithyani 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 maltani alphabet. The letter dr is also expressed by dh which accounts for its absence in the memorial line.

Our author notices the curious custom of affixing certain numbers, 74½ or 74 1/2; and 71½ or 71 1/2 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 Nagari elements.
will remember the rather whimsical definition of the first of the two symbols by Col. Tod, from a traditionary record of the 74 1/2 maunds of zinârs taken from the necks of the slaughtered Râjpûts at Akbâr’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 Ṣ̄ Om, prefixed by the orthodox to all documents. In the inscriptions published in Plates VII. and XVII. this word is written 弭弭 which differs little from the Ṣ̄ above. The triune symbol is often represented by Dismiss alone, which with the proso- dial 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 Mülltânt 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 Barâhâ 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 abori- gines of our hills and plains, and whence and when came the infusions of foreign vocables which now predominate in Indian speech.

J. P.


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 Sewâlik 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 Râjâsthán: 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 Râjâsthán, 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 Quadruman a 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 Quadruman a in the Sewulik 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 drop 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 Pitheccus Rhesus, are as follow:—
Dimensions of the lower Jaw.

<table>
<thead>
<tr>
<th></th>
<th>Fossil Seuwilik Monkey</th>
<th>Semnopithecus Entellus</th>
<th>Ptilocercus Bleph</th>
<th>Ratio of the Semnopithecus fossil to the Entellus.</th>
</tr>
</thead>
<tbody>
<tr>
<td>inches</td>
<td>inches</td>
<td>inches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Extreme length from the anterior margin of the ramus to the middle incisors</td>
<td>3.6</td>
<td>2.85</td>
<td>2.5</td>
<td>4</td>
</tr>
<tr>
<td>2. Extreme length of jaw ; (calculated in the fossil)</td>
<td>5.3</td>
<td>4.</td>
<td>3.6</td>
<td>4</td>
</tr>
<tr>
<td>3. Height of jaw, under the 2nd molar measured to the margin of the alveolus</td>
<td>1.35</td>
<td>1.05</td>
<td>.85</td>
<td>4</td>
</tr>
<tr>
<td>4. Ditto at the rear molars</td>
<td>1.2</td>
<td>1.1</td>
<td>.95</td>
<td>4</td>
</tr>
<tr>
<td>5. Depth of symphisis</td>
<td>1.9</td>
<td>1.4</td>
<td>1.1</td>
<td>4</td>
</tr>
<tr>
<td>6. Space occupied by the molars</td>
<td>2.3</td>
<td>1.9</td>
<td>1.5</td>
<td>4</td>
</tr>
<tr>
<td>7. Interval between the 1st molars</td>
<td>.9</td>
<td>.75</td>
<td>.65</td>
<td>4</td>
</tr>
<tr>
<td>8. Antero posterior diameter of the canine</td>
<td>.5</td>
<td>.4</td>
<td>.3</td>
<td>4</td>
</tr>
<tr>
<td>9. Width of jaw behind the chin under the 2nd molar</td>
<td>1.15</td>
<td>1.05</td>
<td>.95</td>
<td>4</td>
</tr>
</tbody>
</table>

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 Quadruped 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 Sewilik fossil mammalia, makes it more probable that this monkey is an extinct one than otherwise. There is no doubt
of fossil Quadrumana in the Sewäliks.

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:

<table>
<thead>
<tr>
<th></th>
<th>Smaller fossil species</th>
<th>Larger fossil species</th>
<th>Semnopithecus Entellus</th>
<th>Pithicus rhesus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Length of space occupied by the four rear molars, inches</td>
<td>1.48</td>
<td>1.7</td>
<td>1.48</td>
<td>1.25</td>
</tr>
<tr>
<td>2. Height of jaw at the third molar, inches</td>
<td>.95</td>
<td>1.1</td>
<td>.9</td>
<td></td>
</tr>
</tbody>
</table>

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 Sewälik 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 *Sewālik* 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 *Sewālik* 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 *Sewālik* are identical, without even ranging into varieties, with the *Crocodilus 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 *Sewālik* have yielded—from its size carries the imagination back to the era of gigantic *Saurians*. We have leg bones derived from it, with corresponding fragments of the shell, larger than the bones in the Indian unicorn Rhinoceros!

There is, therefore, in the *Sewālik* 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 has been caused by the habitual abrassion 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 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 Sewdlik 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 Pachydermata; 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 7½

---

* Cuvier Ossemens 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.
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 Falconide and Strigidae will, I apprehend, be most ready to make allowance for any possible imperfections cleaving to these characters.


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, Tarai, and lesser hills. Not migratory; size rather large. Connects the most typical hawks with the most typical eagles. Digits and talons pre-eminently raptorial.

Falconide. Genus Baza, nob.

Bill as in lerax, 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, rimi-form, 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 Strigidae.
On some new Genera of Raptores. [May.

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 Cymindis, Harpagus, Ierax and Pernis†. Not known to Indian falconers. Station in Vigor's arrangement, at the head of the Falconina, between Harpagus and Ierax.

Strigidea, Aberrant group. Sw.

Disc and conch evanescent: ears simple. Sub-family of the eagle owls, or Aëtologiae, 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 Huhua, nob.

Bill equal to the head, basally straightened beyond the cere, suddenly hooked, very strong, festooned, with trenchant scarpt tomiae.

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, Huhua 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
On some new Genera of Raptores.


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 Aquilinae.

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, antear, 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 insectivor-ous.

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 *Aëtoglauca* or *aquiline* sub-family of that group. Of the *Falcoglaucina* 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 suitableness 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.
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 Falconidae and Strigidae, 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 examina-
tion, 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 associa-
tions 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 charac-
ters assigned to them in books, I shall indicate what I conceive to
be the diagnostics of some received genera.

Aquilineæ. Genus Pandion.

Bill and head compressed. Gape narrow. Bill moderate, extremely
rounded on the ridge, highly festooned; tomie 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, compres-
ed, 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.


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, Ichthyatus 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 Ichthyatus, then, be the type of Haliaetus—and no doubt it is—then Albipes is a separate type bearing the same relation to Aquila, as Ichthyatus 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* (*Halicetus 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 *Brahmani Cheel* of India (*Halicetus Pandicerianus*) with the fishing eagles, may be safely said to know as little of the structure, as of the habits of that paltry 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.

Strigidae.

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 *Raptore*, 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 *Raptors*, we shall find the dentation of the bill most developed, in one sense, among the lesser *insectivorous* genera, such as our *Baza Blanas*, as well as the *Brahmani Cheel*, may be cited to prove that a *festooned* bill does not, per se, imply noble habits.

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.


Instances. Scops Sunia, Scops Lettia†, Scops Pennata, nob. Nos. 64, 66, 721, respectively.

Aberrant group.

Disc and conch evanescent. Ears small and simple.

Noctua.


Instances. N. Cuculoïdes, Gould; N. Auribaris; 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 Strigidae 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 coelo, 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 couch and disc are not half the size that they are in Otus; the couch 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 Huhúia and Cultrunquis 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 Strigidae; since it is possessed in common by Otus, Bubo, Scops, Noctua, and Ninox. But the tenuity 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 insessorial character prevails almost over the Raptorial—just as it does in many of the little insectivorous Falcons—constitute our Ninox a signal type. Our Cultrunquis is equally conspicuous by its Pandionic feet and habits; and our Huhúia 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.

Strigidae.

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 egrettet. Ears scarce-
ly 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

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 im-
possible 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 (1½ 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, Hühua, 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.

<table>
<thead>
<tr>
<th>Species</th>
<th>Length of the bird.</th>
<th>Length of the tail.</th>
<th>Length of the tarsus.</th>
<th>Length of the bill.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strix,</td>
<td>14 1/2</td>
<td>5 1/2</td>
<td>3 1/4</td>
<td>1 3/4</td>
</tr>
<tr>
<td>Otus,</td>
<td>14 1/2</td>
<td>6</td>
<td>2</td>
<td>1 1/4</td>
</tr>
<tr>
<td>Urrua,</td>
<td>9 3/4</td>
<td>2 3/4</td>
<td>2 3/4</td>
<td>1 7/8</td>
</tr>
<tr>
<td>Bulaca,</td>
<td>22</td>
<td>1 1/4</td>
<td>1 1/4</td>
<td>3/4</td>
</tr>
<tr>
<td>Scops,</td>
<td>9 1/4</td>
<td>8</td>
<td>7/8</td>
<td>2 1/4</td>
</tr>
<tr>
<td>Noctua,</td>
<td>9 1/2</td>
<td>6 1/8</td>
<td>7/8</td>
<td>2 1/4</td>
</tr>
<tr>
<td>Ninox,</td>
<td>12</td>
<td>10 1/2</td>
<td>9/8</td>
<td>2 1/4</td>
</tr>
<tr>
<td>Hühua,</td>
<td>30</td>
<td>12</td>
<td>3 1/2</td>
<td>2 1/4</td>
</tr>
<tr>
<td>Cultrunguis,</td>
<td>21</td>
<td>9 3/4</td>
<td>3 1/2</td>
<td>2 1/4</td>
</tr>
</tbody>
</table>

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 graduated. 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 3/4, and the tail 9 1/4; the tarsus is 2 1/4, and the central toe 1 7/8.

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.

<table>
<thead>
<tr>
<th>No.</th>
<th>Face of Instrument E 2st.</th>
<th>A.</th>
<th>B.</th>
<th>No.</th>
<th>A.</th>
<th>B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>7° 26'</td>
<td>7° 28'</td>
<td>2</td>
<td>6° 16'</td>
<td>6° 14'</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>5 Inverted the axis,</td>
<td>7</td>
<td>24</td>
<td>7</td>
<td>17</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>7</td>
<td>30</td>
<td>7</td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Reversed the Poles.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>7</td>
<td>28</td>
<td>7</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>7</td>
<td>12</td>
<td>7</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>7</td>
<td>16</td>
<td>7</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>7</td>
<td>26</td>
<td>7</td>
<td>23</td>
<td>91</td>
</tr>
<tr>
<td>Mean,</td>
<td>7° 21' 6'' 7° 18' 37&quot;</td>
<td></td>
<td></td>
<td></td>
<td>6° 18' 37'' 6° 21' 30''</td>
<td></td>
</tr>
</tbody>
</table>

Needle marked No. 2.

<table>
<thead>
<tr>
<th>No.</th>
<th>Face of Instrument E 2st.</th>
<th>A.</th>
<th>B.</th>
<th>No.</th>
<th>A.</th>
<th>B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>7</td>
<td>31</td>
<td>7</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>7</td>
<td>31</td>
<td>7</td>
<td>42</td>
<td>4</td>
</tr>
<tr>
<td>5 Inverted the axis,</td>
<td>7</td>
<td>42</td>
<td>7</td>
<td>25</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>7</td>
<td>50</td>
<td>7</td>
<td>30</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Reversed the Poles.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>7</td>
<td>24</td>
<td>7</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>7</td>
<td>26</td>
<td>7</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>6</td>
<td>34</td>
<td>6</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>6</td>
<td>34</td>
<td>6</td>
<td>43</td>
<td>8</td>
</tr>
<tr>
<td>Mean,</td>
<td>7° 19' 0'' 7° 11' 45&quot;</td>
<td></td>
<td></td>
<td></td>
<td>6° 34' 45'' 6° 34' 45''</td>
<td></td>
</tr>
</tbody>
</table>

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° 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 × 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 magnetic 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.
Observations of the Magnetic

<table>
<thead>
<tr>
<th>Date</th>
<th>Arc.</th>
<th>Ther.</th>
<th>Vib.</th>
<th>Mean Time</th>
<th>Interv.</th>
<th>Mean Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>h. m.  s.</td>
<td>s.</td>
<td></td>
</tr>
<tr>
<td>April 30th. 20° 0 88.0</td>
<td>1</td>
<td>0</td>
<td>43</td>
<td>49.4</td>
<td>302.2</td>
<td>301.57</td>
</tr>
<tr>
<td>12 45</td>
<td>101</td>
<td></td>
<td>48</td>
<td>51.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 15</td>
<td>201</td>
<td></td>
<td>53</td>
<td>53.3</td>
<td>301.5</td>
<td></td>
</tr>
<tr>
<td>4 0</td>
<td>301</td>
<td></td>
<td>58</td>
<td>54.1</td>
<td>301.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>cor. for temp. 1.43</strong></td>
</tr>
<tr>
<td>Another set. 20 0 88.0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>49.0</td>
<td>302.2</td>
<td>301.60</td>
</tr>
<tr>
<td>12 45</td>
<td>101</td>
<td></td>
<td>6</td>
<td>51.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 15</td>
<td>201</td>
<td></td>
<td>11</td>
<td>52.6</td>
<td>301.4</td>
<td></td>
</tr>
<tr>
<td>4 15 87.8</td>
<td>301</td>
<td></td>
<td>16</td>
<td>53.8</td>
<td>301.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>cor. for temp. 1.43</strong></td>
</tr>
<tr>
<td>May 3rd. 20 0 87.0</td>
<td>1</td>
<td>0</td>
<td>45</td>
<td>37.7</td>
<td>302.5</td>
<td></td>
</tr>
<tr>
<td>12 45</td>
<td>101</td>
<td></td>
<td>50</td>
<td>40.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 30</td>
<td>201</td>
<td></td>
<td>55</td>
<td>42.1</td>
<td>301.9</td>
<td></td>
</tr>
<tr>
<td>5 0</td>
<td>301</td>
<td></td>
<td>1</td>
<td>43.6</td>
<td>301.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>cor. for temp. 1.38</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Arc.</th>
<th>Ther.</th>
<th>Vib.</th>
<th>Mean Time</th>
<th>Interv.</th>
<th>Mean Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>h. m.  s.</td>
<td>s.</td>
<td></td>
</tr>
<tr>
<td>April 26th. 20° 0' 85.2</td>
<td>1</td>
<td>3</td>
<td>43</td>
<td>6.1</td>
<td>311.0</td>
<td>310.70</td>
</tr>
<tr>
<td>12 30</td>
<td>101</td>
<td></td>
<td>48</td>
<td>17.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 0</td>
<td>201</td>
<td></td>
<td>53</td>
<td>27.5</td>
<td>310.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>cor. for temp. 1.31</strong></td>
</tr>
<tr>
<td>April 30th. 20 0 87.8</td>
<td>1</td>
<td>1</td>
<td>25</td>
<td>17.3</td>
<td>312.1</td>
<td>311.50</td>
</tr>
<tr>
<td>11 45</td>
<td>101</td>
<td></td>
<td>30</td>
<td>29.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 30</td>
<td>201</td>
<td></td>
<td>35</td>
<td>40.7</td>
<td>311.3</td>
<td></td>
</tr>
<tr>
<td>4 0 87.3</td>
<td>391</td>
<td></td>
<td>40</td>
<td>51.8</td>
<td>311.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>cor. for temp. 1.40</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>310.10</strong></td>
</tr>
</tbody>
</table>

or we have for the time of performing 100 vibrations at the temperature of 60° Fahrenheit at Madras.

<table>
<thead>
<tr>
<th>Needle 3, X</th>
<th>Needle 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>s.</td>
<td>s.</td>
</tr>
<tr>
<td>300.14</td>
<td>309.39</td>
</tr>
<tr>
<td>.17</td>
<td>.59</td>
</tr>
<tr>
<td>Mean, 300.30</td>
<td>Mean, 309.74</td>
</tr>
</tbody>
</table>

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 2,1738
Ditto ditto No. 3, 2,2245
With a view to compare theory with practice, we might now com-
pute the number of oscillations which No. 3 × ought to make at
Madras from the observed number in London; thus, assuming the
Dip for London to be 69° 10' N. the formula becomes
\[
\left\{ 3 + \sec^2(69° 10') \right\}^{1/2} = \frac{3 + \sec^2(6° 52' 30'\prime)}{\sqrt{344.87}} \;
\]
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 Tenerife) 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, where-
by 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 rājas 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 Mandīvee, Puragarh, Bhōj, and other ancient towns in Cutch, Cattywar, and Guzerat, the Saurastrene of the Greeks, which comprehended from the Sindh or Indus to Barugdza (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 Nāgarī.

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 Sindhi 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 Tregear legends of last month’s plate, ending in Mitasa, which I ventured to construe as the corrupted or Pāli mode of expressing the Sanskrit possessive case Mitrasya. A similar was perceived following or putra, which left little doubt that the word was for “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 ꞌ (“or ”) 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 no-wise explained but by supposing it the possessive case of rāj, or rājṛ: rājne, 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 , for Krītrimasya Krītrimasya, genitive of Krītrima; which is translated in Wilson’s dictionary “made, factitious, an adopted son (for Krītrima 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 rája, but to Krítiríma, as Rája mahá Krítiríma, 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 rája is stated to be the son of a rája; 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 rája 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 Rao's and Jans 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,

राजा क्रित्रिमस्य रुद्रासाहस्य खान्म सन्दर्पस्य

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 ख, 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 :

राजा क्रित्रिमस्य आगदमः राजा क्रित्रिमस्य रुद्रासाहस्य पुत्रस्य

Rajna kritrimasya Agadama, rajna kritrimasya Rudra Sáh putrasya.

‘Of the elected king Agadama, son of the elected king Rudra Sáh.’

The simple title, rája, 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:

राजा क्रित्रिमस्य वीरदमः राजसचा क्रित्रिमस्य दमासाहस्य पुत्रस्य

Rajneh kritrimasya Víra damneh, rajna mahá kritrimasya Dama Sáhasya putrasya.

‘Of the elected king Víradama, son of the great elected king Dama Sáh.’

In these examples we have the correct orthography of the genitives with one superfluous स्स attached to the penultimate Sáha,—which being connected with the word putrasya did not grammatically require the affix. Dama Sáh, 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 Sáh 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:

राजा सत्राक्षिमास्य दमासाहस्य राजा क्रित्रिमस्य वीरदमः पुत्रस्य

‘Of the great elected king Rudra Sáh, 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 rája.

Legend, No. 5. Two coins in the Steuart list—two in my cabinet, one in Captain Cunningham's:
Legends of the Saurashtra group

'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 raja.

Legend, No. 6. Three Steuart coins, one Prinsep (from Burnes' collection), and one in Dr. Swiney's cabinet:

'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 Sindhi, 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:

'Of the great 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:

'Of the great elected king Vijaya Sáh, son of the great elected king Dama Sáh.'

This raja 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:
Legends on the obverse.

5. ΝΟΥΧΑΙΝΟΜΑ

6. ΤΟΥ. ΠΟΙΝΑΘΙΟΝ

9. Θ. in another form.

3. ΑΛΛΙΟΝ

6. ΜΕΓΕΙΤΙ

7. ΘΕΒΑΙΑΝ

Central symbol of the Reverse.

Similarly between the Greek and Sanscrit Alphabets.
'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 च 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.)
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.
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 Puránas? 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 Sāsee Rāja'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 Mārwār, Bikaneer, &c.”

Colonel Pottinger states that the rājas 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 Schwan, 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 brahman 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 Rāja Sāsee, 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 Sāha (genitive, Sāhasa) 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 Ixswaku'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 Sāha or Sasee rájas, 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 Pattala. 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 Barugáza 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: σωμεσ ἀλλήλους ἑδικῶνων*.

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, "Βασιλέως ταί ἐν τοῖς Πάρθοιον—" "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 Afghans, 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 Afghans, this is a primary conquest of that nation, extending from the Indus to Guzerat, very similar to the invasions of Mahmu'd the Ghaznavide†." "If" (we may here continue) for Afghans in this passage, we substitute the Mithraic races of Seístán 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, Periplus of the Erythrean sea, II. 385. † Periplus, II. 583.
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, Visva, 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 Sáhš has been elevated to royalty in the present occupants of the throne of Nípal: 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 Népal 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 Palhavis, or Balhavis, or people of Pahl, Balha or Balcha, the Balika or Balíka of the Sanskrit, and the Bactria of the Greeks: whence were derived the Pehlevi dynasty and Pehlevi writing of Persia; and the Pahlavans 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 Balabhípura 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.

† चउ or सचूद्र Saha deva is however the name of the youngest of the five Pandava princes, and might be accepted by some etymologists as the original of a patronymic, Sáhu. चउ also signifies “increase, addition;” but सचू 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.
which M. Lassen translates:

Prasthali, Madri, Gandhári, 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 नामतःखेशा; Sed præstantiorem præbet lectionem Codex Parisiens; et Chasí hac non pertinent; a Pentapotamia enim sunt alieni. Basorum 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, Basátì et Sindhúsauvéria. Posteriores laudantur Rám. I, XII, 25. ed. Schl. et alio nomine appellati sunt Cundáaca (Hem. ch. IV. 26.) Prius nomen sæpius in Bháratea reperi, ex. c. in hoc versus, ex libro sexto descripto:

Gámbhāra: गांभीर्य प्रथ प्रातःस्वीया बशात्यः
Gandhári, Saddhales, orientales, montium incolae atque Basátes."

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 सैँ, 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 Sauvya-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.

Orientales servi sunt, meridionales turpes, Bāhici latrones, Surashtri prædatores.

Commentators have uniformly supposed Surashtra to denote the modern Surat, but this is an error: the name applies only to the Saurastréne 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 सूरत, 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
Sahs 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 numerously located in Guzerat and Surat, and can easily imagine, from their numbers and commercial enterprise, 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 jārajahs or chiefs of Cattwyar and Cutch. The name jārajah might, without any unwarrantable license, be deduced from sah-rāja, persianized to ja-rāja 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-rājahs 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 Assapurī† 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 mās or māh) 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 raja, 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:

"Εἰ γὰρ καὶ τὸν "Τίμαθιν (Τίμαθιν) δείδη θρίς ἐὼ καὶ μέχρι τοῦ Ισαμοῦ (Ἰσαμοῦ) πρὸ ἡλικίας ταῦτα γὰρ αὑτὸς, ταῦτα Δημήτριος Ἐνοῦθῆναι τοὺς Βακτρίους βασιλέως ὅμοιον δὲ Πασταληνην κατεχον, ἀλλὰ καὶ τῆς ἀλλῆς παραλίας τῆς Τεσσαρίδος καλομένην καὶ τὴν Σιγνέρτιδος 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 Τεσσαριωστον dicit? nempe nullam potuit, nisi quae ad Gangis fluminis ostia ubi et Σιγερτος 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 Trigerta त्रिगर्त in the province of Lahore. Manners places the former in Guzerat: "ad oram maritimam, quae hodie Guzerat, olim nomine Sanskrit गुजरात (Gurjāra) appellata est, τεσσαριωστον 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 τες, to the article του or της, the whole obscurity of the text disappears, and the βασιλεία της Σαριωστον καλαμάνη 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 graeco-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, Τ, &c.;—the Devanâgrî 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, ο, 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 Τ, present a striking conformity with the vowels ओ, ऐ, and the semivowels ए and ऐ of the oldest Sanskrit alphabets inverted. The vowel E is unconformable, and resembles more the short e of the Zend. The long H is a later introduction and appears to be merely the iteration of the short vowel I, as o is of O.

In the consonants, we find B, Γ, Δ, Z, 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 ब), ग, घ, च, छ, क, छ, म, न, त, थ, ध, न 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 B, Δ, Θ, Λ, Μ, Ν, Π, Ρ, Σ, Τ, require, like the vowels, to be viewed in an inverted position: the r, and Σ, remain unturned: the Z, and K require to be partially turned.—The Α and the N may be deemed a little far-fetched; the Β taken from the double v, and the Α from the aspirated θ 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 Pharmacopoeia 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 Mukhzn ool udweeyah by Moohummud Khosru Khan, 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 pharmacopist 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.

Oommegheelan, Acacia Arabica, commonly called Tuleh

The people of the desert name it Shuokeh-i-Misr (Egyptian thorn), and Shuokeh-i-Arabia (Arabian thorn). In Persian it is called Moogheelan; and in Hindee, Keekur and Bubool.

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 but tinged with red. The fruit, which is like a bean or bean pod, resembles Bagla and Khurnooch (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 (Egyptian Lupin), but flatter and of a red color. The bean is variously called Quruz, Sunt, Ghurub, and Usnat. The pressed juice is called Uqgia (Acacia). The gum of a red and yellow semi-transparent color is called Sumugh-
i-Urbee (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 be-
comes very white, and when chewed like the Ilk (gum resembling 
mastic), it discharges an odoriferous liquid and leaves an agreeable smell in the 
mouth.

The second kind, called Sulm by the Arabs, is less thorny, and some-
times has no thorn at all, and the branches are very profuse; the trunk is 
blackler than the first kind. The fruit, which is like a bean and called Quruz 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 
deobstruuent (opener of obstructions) and good for the stoppage of diarrhoea. If 
fused by way of embrocation it strengthens laxed 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 pre-
pared of equal parts of the bark, the leaves, the blossoms and the gum, and from 
½ 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 sea-
son 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 مارو (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 strengthen-
ing the gums لَبْنَة. A brush made of the thin sprigs is used for strengthen-
ing 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 abund-
ance 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 prime vise. 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 pulmo-
nalis; 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.

Aqaqia. A name given to the pressed juice of Quruz قرز and Quruz is the fruit of the Tuleh تلخ, from which the Gum Arabic is
obtained. This plant in Hindi is called Keekur كيكار, and the pressed
juice of the fruit Keekur ka rus كيكاركمس. By the Franks or Euro-
peans 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. It stops flow of blood from any part of the body نفِض الدم. It strengthens the stomach and the liver كبد, and prevents
the flow of humour (by the nose) arising from heat حابس نزوات حارة and
the dysentery آسیال. It is good, both internally and externally, in cases of
langour of the anus and of the womb. As ointment it allays inflammation of the ophthalmia, strengthens the sight, attenuates the humours, and removes redness. It is introduced in medicines for the cataract. If applied as ointment to inflammations arising from heat and a-^->, it attenuates and prevents the determination of the humours in that direction. It is good for the whitlow, for the cracking of the skin from cold, for the relaxation or weakness of the joints, and for the protrusion 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 and red rose, it prevents flow of perspiration, 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 MomeroghunICH (an ointment of thick consistence made of different ingredients and bee's wax), called in Arabic تذروطي, 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 weared or languid parts, it will strengthen and prevent the determination of the humours that way. Used as a clyster, it alleviates the excretion of the intestines سجح, and prevents flux with occasional issue of blood اختطاف الدم, and strengthens the intestines امعا. If used as an injection to the womb, it absorbs 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 ولما it is good for the protrusion of the pupil of the eye بلامدgieux حدقة, for inflammations arising from heat and erysipelas صرير باك باديس، or (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 ладон and oil of roses and sandalwood صدل same quantity as the Aaqia. Some say the best is the juice of the box-thorn رسمت, in Hindi called رسمت.

Aaqia 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 *Aqagia* is a compound of two essences, *Luteef* and *Kuseef* the finer and the grosser particles; the former is burning, sharp, acrid, and penetrating, and the latter earthy, costive, and obstructive. When *Aqagia* 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 Pharmacopoeia.

**Sunmugh or Sumgh,** Arabic; *Fougeemunoon,* 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 جمغ 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 جمانغ،برقن 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. *Jaleenoos* (*Galen*) says, hot in the 2nd degree.

**Medical properties.** It is viscous and demulcent الملييى. It is 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، مَرُةِ and excoriation of the lungs, or peripneumony تَرِحُ رُنَة and harshness or soreness of the throat نَعُوْسَتْ حُلْق، it clears the voice, and prevents the determination of morbid humour to the chest نَعْصَة. فَوَمُوْرِسِينَة، أَنْصِبُ بَيْنَا مَوْرِنَا. It stops diarrhoea. 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. 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. 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، and from all other
internal organs 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 into the eyes affected with the ophthalmia, Sulac cutaneous eruptions in the eye-lids, and Jurf حرب itching, is highly beneficial in removing those complaints. It is injurious to excrementary discharges. Its corrector is Kuseera كشرأ gum tragacanth, and (it is said) rose-water and sandal-wood. Its succedaneum is almond gum and myrtle seed حبالاس.

—Mukhzun-oal Udweeyuh, by Moohunnad Khasroo Khan.

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,

Secretary to Govt.

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 Tamil 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 1833. 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 behooved 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 Rafn, 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 Mahâbhârat, 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.


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

6,923 14 1

Estimated Charges.

Arrears of Establishment for March and April, 1837, .. 563 11 0
The Museum allowance for April, .......................... 213 5 4
Subscriptions 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. As. Researches, 2,500 0 0
Cleaning and painting the house exclusive of any alteration 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. Craigroft, 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.
Commentaire sur le Yâcul l'un des Livres Religieux des Parsees, par M. Eugene Burnouf, Membre de l'Institut, Professeur de Sanscrit au College de France, tome I. Part II.—by the author.
Memoir sur Deux Inscriptions Cuneiformes trouvées prés d'Hamadân et qui font maintenant partie des papiers du Dt. Schulz, by ditto—ditto.
Memoire sur le Guacharo (Stéatornis Caripensis) (Humboldt) par M. L'Herminier. D. M. P.—by M. Fortune Eydoux through Professor Goodene.
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.
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 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 Hindi languages: the Siddhânta Siromani prakasa by Subha'ji Bâ'pu, and the Bhugola sarî ikhyate, 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 jotilishi pandit seated between two globes, expounding their use from the Siddhântas—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 zealons 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 Siddhânti who possessed a higher degree of knowledge of his profession, and had been 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 Shastrji, by name Subha'ji Bâ'pu, a man of wonderful acuteness, and intelligence, and sound judgment, and to Unkara Bhat, one of the principal Joships 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'ji Bâ'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 shown 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 shown 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'ji Bâ'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 Delhi 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-
able 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.

"Unkara Bhat, who holds the next rank in talent and usefulness, has written a free Hindi version of Subha'at fatigue's book on the Puranic, Siddhantie and Copernican systems."

Read a letter from Lieutenant Kittoe, stating that he had dispatched a cart to Tambool 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 Asvastuma near Dhoulee 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 with 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 Gumur country, of which the Secretary with the aid of Kāmala Kant Pandit supplied a translation.

It relates to a grant of land by the Bhanja rajas to a brāhman named Bhandareswara.—A lithograph will be published shortly.

The Honorable G. Turnour transmitted a paper on an examination of the Pali Buddhistical Annals, including a translation of the Āṭṭha kathā of Buddhaghosho, 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 Bahawalpur.
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 Nepal.

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 Tvr. 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 Captaiu 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 anything out of them."
Meteorological Register, kept at the Assay Office, Calcutta, for the Month of May, 1837.

<table>
<thead>
<tr>
<th>Day of the Month</th>
<th>Old Stand. Barometer</th>
<th>New Stand. Barometer</th>
<th>Depression of Barometer</th>
<th>Temperature from Deep-point.</th>
<th>Hygrometer</th>
<th>Hair Hygrometer</th>
<th>Calculated Humidity</th>
<th>Collected on Roof</th>
<th>Heat in Sun's Heat on Roof</th>
<th>Gold on Roof</th>
<th>Calculated Humidity</th>
<th>Register Thermometer extremes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29.703</td>
<td>29.712</td>
<td>0.09</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>2</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>3</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>4</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>5</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>6</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>7</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>8</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>9</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>10</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>11</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>12</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>13</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>14</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>15</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>16</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>17</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>18</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>19</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>20</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>21</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>22</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>23</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>24</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>25</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>26</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>27</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>28</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>29</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>30</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
<tr>
<td>Mean</td>
<td>29.698</td>
<td>29.701</td>
<td>0.02</td>
<td>65</td>
<td>26</td>
<td>60</td>
<td>59</td>
<td>73.8</td>
<td>1.20</td>
<td>1.29</td>
<td>se</td>
<td>cumuli. threatg.</td>
</tr>
</tbody>
</table>

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 be the second 1837 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.
I.—Some account of the Wars between Burmah and China, together with the journals and routes of three different Embassies sent to Pekin 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-show and Tālī-fā in Yunan, not only to Ava but to all the Shan towns subject to /Ava, Maing:Leng-gyih, Kyaing:toān, Theinni, Mō:ne, Thibó, &c., as well as to Zemunay and the Shan towns subject to Siam. A party of Chinese also annually proceed from Santū-fū 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 Tsō:buās of Theinni, 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:darā:gyih, Symes's Mindragée. 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 Pekin, 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
Some account of the Wars between Burmah and China. [June.

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 ɪ, ʊa, en or eng; ang as en or eng; ong as oʊn, and f as pʰ, or bʰ. 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,h as g; t and t,h 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 Devanāgari व, ṃ, 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 (ₚ), 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 prosodical 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.]
Some account of the Wars between Burmah and China.

cities of the first second and third class in Burmese, as p,hu, or b,hu, t,su, or tso, and shyen; but I have set down these names as they usually appear in our maps of China, as fù, chow and hên.

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.
- é, 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.
- ò, broad as in groat.
- ó', the same sound prolonged.
- ù, 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, ù and ù'.

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, mé-in, yu-on.

The letter ng is pronounced something like the same letters in the French word maguanimité, 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 prosodical 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 Theinni, 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 (Mendabar:gyi'ku) received a report from the Tsob:bu:sh and officers of Theinni, that a Chinese embassy, consisting of upwards of 300 men with E-tshö:ye' as the chief envoy, had arrived at Theinni, 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 Amarapura) by the road leading from Theinni through Thibô, Maing:to:n, Maing:kaing, Yauk:zauk, Pwe:tha, and Ywángan, down by the Nat-t,heit pass and the road along the southern paddy lands (Taung-bietlay).—The Chinese mission accordingly left Theinni on Sunday, the 6th of May, 1787, and on reaching Nyuang-ni-beng (red pepul tree), embarked in boats (on the Myit-ngoy) and came to Yan-ung ghät at Amarapura, 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 Amarapura having been ornamented, the officers of the Lhuot-tô and Yoûn-dô*, dressed in their uniforms with earrings, 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-ung ghät 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-gyo: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 Byambâ; 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-tshö: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 Yoûn-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-ve-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 Thân-dô-zen† 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 Mahâ-muni crown of inestimable value, and the principal queen, dressed in the Gana-matta-pa-kuâ 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 Thâkathana ājizâ 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 Brâhmans performed the customary ceremony of consecration, and the flowers and water presented by the Brâhmans, were received by Baung-dô-pyen and Nanda-then Khâya in a gold cup ornamented with the nine precious stones.

* The Nâ: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 Nâ:khân to the Shue-tait-wûn, who after ordering the royal drum to be beaten, conveyed the images out of the hall of audience.

† The Thân-dô-gân§, Meng-ngay-thîrî, then came up the steps used by the king, and kneeling at the usual place, read out a list of the royal presents. The Nâ:khân-dô, Kyô-zuâ/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' Buâ'||, (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 Pâli 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 Zabudipa island, lying to the southward of Myenmò 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†, 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 splendid as the rising sun. The son of the lord of Kaing:ma, 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 Thagrá, 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 Byamha, 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 Kaingmah 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 Nākhān-dō Kyō-zya'no-rat,ha' had read out the above royal letter, his Majesty said, 'E-tsno: ye', how many days were you coming from the capital of China to Amarapura?' The Nākhān, Pyō oyin-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 Nākhān-dō, who submitted it to his Majesty. The king then said: 'E-tsno: 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-tsno: 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-tsno: 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 Yom, 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-gy'H mu'; Ne-myo'Shue-daung, Thihagyo-gaung, and Weluthay'a, 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 Thiri pawara wizayâ nauta yatha tiri bawannâ ditiya dipadi pandita mahâ dhamma rôjâ-drâjâ†, 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 Kaingmah, who arrived at the great and golden city of Amarapura on the 26th May, 1787. The royal letter and the presents consisting of eight images of the Abatthara‡ Byamha, 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 Pâli 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 Abatthara Byamhā 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 pyramidal 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 Byamhās, 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 Myo-Shuedaung, a nobleman who is in the immediate service of the royal friend, and Thira Gyo-gaung and Welutha'Rā have been appointed ambassadors to accompany the son of the lord of Kaing:maḥ, 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 Mobyte 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 Ainarupāra 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:maḥ, 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:maḥ on the 12th January, 1788, amounting altogether to one hundred and twenty-five men; and on the 23rd arrived at the city of Shuen-Hi, which the Shaus call Maining:Tsūn+. Here we met two officers, Tsūn-shue and Titayin, whom the Tsûntū 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 Mīng Senvi.  
† Māng Chān.
We had to wait again for more than five months, whilst the Tsountū sent a report of our arrival to Pekin. On the 25th June, 1788, the governor of Maing: Tsān received a letter from the Tsounťu, ordering him to let the Burmese ambassadors advance; and on the following day, attended by the governor Khua’-Ta’-Lōye’ and interpreter Wun-tsou’n-ye’ with one hundred men, we left Maing: Tsān, and on the 1st July reached the city of Tathī (Tali ?), where the Tsounťu came from Maing: Tsā (Yunan), on the 12th July, to meet the royal letter and presents. On the 21st July, orders from the emperor of China reached the Tsounťu, 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 Tsounťu, governors, Tītu 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 Tsounťu 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 Danutaungye’ and Tset-yan-nhaing to Amarapura with the Tsounťu’s presents, and left Tāthī on the 23rd July with thirty-seven men, attended by Tauktae Hōta’-Loye’, Khua’-Ta’-Loye’, and the interpreter Wun-tsou’n-ye’. In seven days’ journey we reached the city of Maing: Tsā (Yunan), where we stopped one day, and then continuing our route, reached the city of Kētsō (Kue-chow) in nine days’ journey, on the 8th August, 1788. On the 12th we came to the city of Tsīn-yueng-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 Riyen or Yi-yen, and continued our route by land. On the 22nd August, we came to the city of Tsheng-shya-fū in the district of Hōnān, and in eight days’ journey more to the city of Wu-tsheng-fū in the district of Hupē. On the 12th September, in thirteen days’ journey, we came to the city of Tshi-chow, beyond the district of Hōnān and in that of Tsūlī (Petheli). In seven more days, on the 19th September, we reached Pauk-tin-fū, the principal city of Tsūlī, and on the 23rd reached the city of Luko Khyauk-ken*, six miles distant from the capital, Pekin. The emperor not being there but at Yē-chōṭ 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 Hā-pë-khē fort† line of wall. In two days more we came to the city of Lānhphūn-hien, where the chief of the chokey met us, and taking a

* Ken is a chokey in Burmese.
† Du Halde’s Gehol, 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-kol 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 Wûn-gyîh Hô-tsou’ñ-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 Thi-ta’-yin who wear two peacock’s feathers with a ruby on the top of their head-dress. The Wûn-gyîh 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 Wûn-gyîh Hô-tsou’ñ-teng and Kou’n-ye’-thu’ and Thi-ta’-yin in the midst of all the officers of the Court. The emperor spoke as follows in the Tartar language to the Wûn-gyîh, 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 Wûn-gyîh Hô-tsou’ñ-teng, and to Kou’n-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 Shikyà 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-yû jewel (sceptre?) which I always carry in my hand.’ The Wûn-gyîh Hô-tsou’ñ-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 Wûn-gyih Hô-tsou’-tëng and Kou’n-ye’thu’ and Thî-ta’-vîn, 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 Byamhas,) 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 Zhebol (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 Wûn-gyih Hô-tsou’-tëng to wait on the road, and when we saw the emperor coming out on horseback, to remark what a strong horse 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’-tëng asked what the ambassadors had said, and when the interpreter translated our remarks into Chinese, the Wûn-gyih 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’-vin 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.
Some account of the Wars between Burmah and China.

1837.]

1417.

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 Wùn-gyih Hô-tsou'nteng and Kou'n-ye'-thu' and Thi-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 Wùn-gyih Hô-tsou'nteng 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 Wùn-gyih 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 Wùn-gyih or First Minister of State, as will be seen in the list of Wùn-gyihis 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 Wûn-gyîh Kou'N-ye'- thu' to take us round and shew us all the monaste-
ries, 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 Mûn-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
tâs† or 350 cubits. At the end of the lake nearest the city, there is an
octagon pyramidical 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 pyramidical building at which the emperor
stops. The lake is upwards of 400 tâs from north to south, and upwards
of 300 tâs 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
Hô:Shyeng‡; and some with the ship country Kulás in attendance on the
image of Devadat§, which they worship. The books, writings and language
spoken in these monasteries were not like ours, and those who accom-
panied 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, Kâ'âma, one of whose names, Ma'âra,
is written by the Burmese Már, and pronounced Mân.
† A tâ is a measure of 7 cubits, and a royal cubit is equal to 19⁴⁷/₅₀ 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 know-
ledge of magic.
§ See in La Louebre's Historical Relation of Siam for some account of
Thevetat, whom some Buddhists pretend to consider as the same person as
our Saviour.
I

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 Wûn-gyih Hô-tsou'n-teng and Kou'n-ye'-thu', Thi'ta'-yi'n, and Lu-ta'-yi'n, gave us different presents; and on the same day we went into the palace where the Wûn-gyih 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 afaroff 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 Wûn-gyih also said, 'The six men with Nga Tsî't who were formerly deputed, were taken to the province of Kuan-toin 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 Bumô, inquiry shall be made, and he shall hereafter be surrendered. There is nothing difficult now that our two masters have become friends, and the Tsûintô 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 Shiîya 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-yenchien in the district of Hûpê, beyond the districts of Tsûtit and Hô-nân, when we embarked in boats, and came down the stream in 18 days, on the 12th December, to the city of Tsheng-tait-ju in the district of Hûnân. 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 Akyö, lying to the south-east of Yunan, where there there was a war, and Thu-łą'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 Lie-gô, Nga Tsit-Tô, Nga Tsit-Lî, Nga Pô-bu', and Nga Pô-yu subjects of the sun-descended king who were formerly detained and sent to Turtary, 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 Kuing-mah. The Tsö-buah of Kuing-mah also said, that he had received letters from the Tsöuntü of Yunan informing him, that the six men who had been sent to Turtary 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 Kuing-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 Pekin, (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'n, is 45 years of age. He has six Wûn-gyils, three Tartars, Hô-Tsou'n-Teng, A-Tsou'n-Deng and Thu-Tsou'n-Deng, and three Chinese, Weng-Tsou'n-Deng, Kyî-Tsou'n-Deng, Lûyô-Tsou'n-Deng. There are six great officers, one superintendent of war, one treasurer, one superintendent of law and custom, one superintendent of criminal affairs, and one superintendent of learning. There is a general of the nine gates, named Kyô-me'n Tî'tu'. A governor of the city, named Shuen-Deng-Thu', and another governor, who is also the chief revenue officer of the city, named Phi'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 Tsöuntü of Tsit-Lî from the city of Path-tn-chow. The officers and soldiers do not hold districts and villages (in jaghir), 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 Sihgya 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-gya 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-gya 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, Mr-Kou'n-ye', Ku-ta-yin', 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 4900 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 (chunuchs) 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 clean cotton; 60 ticals for one hundred viss of oil; 1 tical for a basket of pyaung, grain (Madras Cholum); 1 ½ 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 2½ ticals; and these pice are used in sales and purchases. Rice is cultivated and used in the provinces of Yanun, Kāe-chow, Hānān and Ha-kueng (Hugweng). But there are no paddy lands; and pyawng, pulse, barley, and millet only are cultivated and used in the provinces of Hōnān and Thōtī, and about the cities of Zhehol and Taing. As far as Kāe-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 Hu-kueng people travel in boats, as there are many lakes and streams in that province; and in Hōnān and Thōtī 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 Tshaî'ṭ-Tâ-yîn was defeated with great loss. That general was executed by the emperor, and another general Thu'-thît-Tâ-yîn detached against the rebels, whom he subdued in the month of April 1789, when Mi-Kou'n-yî's younger brother, Khue-Kou'n-yî', was appointed governor over the people with the office of Tse-taik. The two leaders of the Taik-wun rebels were decapitated, and their heads, together with the head of the general Tshaî'T Tâ'-yî'n, 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-tshu-en river rose and the water overflowed and drowned the whole city of Kyûn-chow in the province of Ha-kueng. 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 Wûn-gyîh K-ťou'n-ťeng was dispatched with upwards of two thousand viss of silver, to provide clothing, food and habitations for such of the inhabitants of Kyûn-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-tsûn in the Kulâ country to the westward of Thi-tshu-en, and that the people were disputing and going to war about him. The general Aung-tsoung-Kîn was appointed to go and attack them with the force in the city of Thi-tshu-en.

"We saw all the houses and lands destroyed by the floods along the whole road we travelled in the provinces of Hānān and Hâpî, from the city of Kyeng-chow included. The people also said, that when the walls of the city of Thi-tshu-en fell down and were being rebuilt, a prophetical writing was found, which the nobleman, Khou't-myî'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 Shyûn Shî, a stream of blood will flow. A great calamity
Some account of the Wars between Burmah and China. [June,
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 Tsountu of Kueng-toän reported, that the uncle of the chief of
Am-nän, a territory lying to the west of Kueng-toän and near the Kwang-
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
Am-nän having regularly sent presents and being a friend, it became
necessary to assist him, and attack those who had molested him. The
Kueng-thi Titu, Yu-ta-yin, was appointed general, and a force of ten
thousand men, three thousand from Kueng-thi and seven thousand men
from Yunan under the Yunan Titu, was sent against the rebels.

Route of a Journey from the city of Amarapura to the city of Pekin,
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.)

<table>
<thead>
<tr>
<th>Day of the month and year</th>
<th>Names of Places</th>
<th>Hills and mountains crossed</th>
<th>Large Rivers crossed</th>
<th>Small Rivers crossed</th>
<th>Bridges crossed</th>
<th>Distance in Burmese Taungs.</th>
<th>No. of nights stopped at each place</th>
<th>No. of gates stopped at each city</th>
<th>No. of Lakes</th>
<th>Under what Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th Jan. 1787</td>
<td>Left the city of Amarapura, and stopped at Phra-gylh, or large Ar-ra-can image of Gau-da-ma.</td>
<td></td>
<td></td>
<td></td>
<td>1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26th</td>
<td>Slept in temporary buildings at the city of Kan-gylh.</td>
<td></td>
<td></td>
<td></td>
<td>1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27th</td>
<td>Slept at the za-yat, or public building in the village of Öun-thut.</td>
<td></td>
<td></td>
<td></td>
<td>1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28th</td>
<td>Slept in temporary buildings in the city of Thödn-zay.</td>
<td></td>
<td></td>
<td></td>
<td>1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29th</td>
<td>Slept at Thok-kay-byen (plain of coarse grass) and village of Nún-mo.</td>
<td></td>
<td></td>
<td></td>
<td>1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30th</td>
<td>Slept at a halting place in the jungle, on the site of the old village of Bön-gyd or Ban-kyi.</td>
<td></td>
<td></td>
<td></td>
<td>1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st July 1787</td>
<td>Slept at a za-yat in the village of Bö-gyd.</td>
<td></td>
<td></td>
<td></td>
<td>1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>Slept in some buildings constructed for the ambassadors in the city of Thl-bö.</td>
<td></td>
<td></td>
<td></td>
<td>1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Under what Jurisdiction: Under the city of Thödn-zay.
<table>
<thead>
<tr>
<th>Day of the month and year</th>
<th>Names of Places</th>
<th>Hills and mountains crossed</th>
<th>Large Rivers crossed</th>
<th>Small Rivers crossed</th>
<th>Chokeys passed</th>
<th>Distance in Burmese Taungs</th>
<th>No. of nights stopped at each place</th>
<th>No. of gates in each city</th>
<th>No. of Lakes</th>
<th>Under what Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd</td>
<td>Slept in the village of Thi-det, after crossing the Móday river,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under Thibó.</td>
</tr>
<tr>
<td>4th</td>
<td>To the thé of the ambassadors (temporary buildings constructed for their accommodation) on the bank of the Naung-ló river,</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under the city of Theinn.</td>
</tr>
<tr>
<td>5th</td>
<td>To the ambassadors’ thé in the village of Lāshio,</td>
<td>1</td>
<td></td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>6th</td>
<td>To ditto in the city of Theinni,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>16th</td>
<td>To the ambassadors’ thé in the village of Teng-gán,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>17th</td>
<td>To ditto in the village of Maing-puon,</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>18th</td>
<td>To ditto in the old village of Ná-tl,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>19th</td>
<td>To ditto in the village of Nán-lain,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>20th</td>
<td>To ditto in the village of Peng-ngo,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>22nd</td>
<td>To ditto in the village of Kuon-loán, after crossing the Salu-ën river,</td>
<td>2</td>
<td></td>
<td>5</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>25th</td>
<td>To ditto in the village of Pantheng,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>26th</td>
<td>To ditto in the village of Peng-hin,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>27th</td>
<td>Crossed the Nán-phoung or Nán-baung river, the boundary of Theinn: (Nam is water in the Shan language,)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under the city of Maing:Tein.</td>
</tr>
<tr>
<td>Do.</td>
<td>Slept at the ambassadors’ thé at Peng-ma-khô, on the bank of the Nán-Tein river,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under the city of Kuing:mah.</td>
</tr>
<tr>
<td>28th</td>
<td>After crossing the Nán-Tein river, slept at the ambassadors’ thé in the village of Tsin-het,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under the city of Kuing:mah.</td>
</tr>
<tr>
<td>30th</td>
<td>To the village of Khót-lôh,</td>
<td></td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Under the city of Kuing:mah.</td>
</tr>
<tr>
<td>31st</td>
<td>To the village of Maing: Kuing,</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>Aug</td>
<td>Slept at the monastery of Bódhaea-gyêh (great silver mine,)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>3rd</td>
<td>To the village of Môn-bô on the little hill of Luay-wun-bâ, (Luay, or rather Lôai, is a moun-</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>Day of the month and year</td>
<td>Names of places</td>
<td>Hills and mountains crossed</td>
<td>Large Rivers crossed</td>
<td>Small Rivers crossed</td>
<td>Bridges passed</td>
<td>Distance in Burmese Taungs</td>
<td>No. of nights stopped at each place</td>
<td>No. of gates at each city</td>
<td>No. of Lakes</td>
<td>Under what Jurisdiction</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------</td>
<td>-----------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>--------------</td>
<td>-----------------------------</td>
<td>-------------------------------</td>
<td>-----------------------------</td>
<td>--------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>4th</td>
<td>To the city of Kaing-mah, a Tso-bunb, subject to both Ava and China, resides here,</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>m.d.</td>
<td></td>
<td></td>
<td></td>
<td>Under the city of Kaing-mah.</td>
</tr>
<tr>
<td>12th</td>
<td>Left the city of Kaing-mah, and slept in the ambassadors' te in the village of Wein-yauk,</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>15 8</td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>13th</td>
<td>To the city of Maing-Tha,</td>
<td>3</td>
<td>2 2 4 1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>In the Province of Yunan and under the city of Shuenli.</td>
</tr>
<tr>
<td>14th</td>
<td>To the city of Maing-Yaung,</td>
<td>3</td>
<td>1 1 8 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>16th</td>
<td>To the village of Maing-La, the halting-place of Ta-an-dauk-saue,</td>
<td>3</td>
<td>3 3 1 8 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>19th</td>
<td>To the city of Yein-chow, called by the Shans Maing-Ya,</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>20th</td>
<td>To a monastery in the city of Yein-chow, called by the Shans Maing-Ya,</td>
<td>3</td>
<td>1 1 1 6 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>23rd</td>
<td>To a monastery in the city of Shuen-li, called by Shans Maing-Chun,</td>
<td>3</td>
<td>5 5 5 9 6 2 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>25th</td>
<td>From Maing-Chun to the village of Tsi-kay, or Tsia-kay,</td>
<td>2</td>
<td>2 2 6 6 6 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under Maing-Chun.</td>
</tr>
<tr>
<td>27th</td>
<td>To the village of Nyo-hay, after crossing the iron bridge over the Mé-khaung, or great Cambodian river; (Chinese Lout-san-Kyang,)</td>
<td>5</td>
<td>1 3 3 8 10 1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>28th</td>
<td>To the village of Tsi-kay,</td>
<td>4</td>
<td>6 10 1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>29th</td>
<td>To the city of Mo-an-khu,</td>
<td>3</td>
<td>1 1 3 6 1 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>30th</td>
<td>To the village of Tham-shen-lan,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>1st</td>
<td>To the city of Ta-thi or July T'a-yi (Tali i)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under Ta-thi or Tayi.</td>
</tr>
<tr>
<td>23rd</td>
<td>Left Ta-thi and stopped at the city of Tsi-kow,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>24th</td>
<td>To the city of Yut-nan-ngai (little) after travelling 2 stages,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Under Ta-thi or Tayi.</td>
</tr>
<tr>
<td>25th</td>
<td>After travelling 2 stages to the city of Kyen-nan-chow,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>26th</td>
<td>To the city of Tshi-shwyn (Tchou-hiung,)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>27th</td>
<td>Dined and relieved bearers &amp;c. at the city of Kueng-tohn-hien,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
</tr>
<tr>
<td>Day of the month and year</td>
<td>Names of places</td>
<td>Hills and mountains crossed</td>
<td>Large Rivers crossed</td>
<td>Small Rivers crossed</td>
<td>Bridges crossed</td>
<td>Chokes or pass.</td>
<td>Distance in Burmese Tails</td>
<td>No. of nights stopped at each place</td>
<td>No. of gates in each city</td>
<td>No. of Lakes</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------</td>
<td>-----------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>---------------------------</td>
<td>---------------------------------</td>
<td>------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>27th</td>
<td>Slept at the village of Shye-tso,</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28th</td>
<td>Brestfasted and relieved bearers, &amp;c. at the city of Lu-thoan-hien,</td>
<td>5</td>
<td>1</td>
<td>9</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do.</td>
<td>Slept in the village of Shyd-kuon-hien,</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29th</td>
<td>Relieved bearers, &amp;c. at the city of An-in-hou-chow, To the city of Yu-nang-yih (great) called by the Shans Maing-Tshi (Yunan,)</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31st</td>
<td>Slept at the village of Yu-loan, after travelling 2 stages (Yi-loan-tan of other lists ?)</td>
<td>1</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>Relieved bearers, &amp;c. at the city of Ma-loan-chow, (Ma-long,)</td>
<td>2</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug</td>
<td>Slept at the city of Tain-yi-chow,</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>Slept in the city of Phyin-yi-hien after travelling 2 stages,</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>16</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd</td>
<td>Stopped in the village of Lyu-kuon-loan after travelling 2 stages,</td>
<td>6</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th</td>
<td>Stopped in the village of Fe-shyul-tsi after travelling 2 stages,</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th</td>
<td>Slept in the city of Lan-taing after crossing the Mauk-loo river,</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th</td>
<td>Stopped at the city of Tsin-lin-chow, (Thin-ing ?)</td>
<td>10</td>
<td>6</td>
<td>6</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th</td>
<td>Relieved bearers, &amp;c. at the city of An-tshuan-fe, where a Titu resides. (Ngan-chan ?)</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th</td>
<td>Slept at the city of An-phyn-hien,</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9th</td>
<td>Relieved bearers at the city of Tshi-tshi-thin,</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10th</td>
<td>Slept at the city of Kue-chow where a Fü-yeng resides, (Ko&amp;i-yang ?)</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11th</td>
<td>Relieved bearers, &amp;c. at the city of Tshoan-ngay-hien</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------</td>
<td>-----------------------------</td>
<td>----------------------</td>
<td>---------------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>--------------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>11th</td>
<td>Relieved bearers, &amp;c., again at the city of Kyueng-phyn-hien (Kuang-ping).</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>...</td>
<td>...</td>
<td>In the province of Kťe-chow, (Koat-cheon.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept at the village of Tshi-phyn-hien, ...</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td>12th</td>
<td>Stopped at the city of Tšin-Yueng-fu, (Tchin-yuen), ...</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>8</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td>13th</td>
<td>Embarked in boats and dropped down the stream to the city of Tshi-kyi-hien, where we supped, ...</td>
<td>10</td>
<td>...</td>
<td>1</td>
<td>9</td>
<td>9</td>
<td>...</td>
<td>...</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept at the chokey village of Yeng-Phyín, ...</td>
<td>5</td>
<td>...</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td>14th</td>
<td>Received provisions at the city of Yu-phyn-hien, ...</td>
<td>4</td>
<td>...</td>
<td>3</td>
<td>3</td>
<td>...</td>
<td>4</td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ditto ditto at the city of Khueng-chow, ...</td>
<td>5</td>
<td>...</td>
<td>8</td>
<td>8</td>
<td>...</td>
<td>4</td>
<td>In Hu-kueng province (Hou-quang) and district of Hou-nán, north portion of Hou-quang is called Hou-nan.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept at the jungle of Kueng-toín under Yueng-tsó-fú, ...</td>
<td>7</td>
<td>...</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td>15th</td>
<td>Entertained by, and received presents from, the Governor of the city of Yuen-tsó-fú, ...</td>
<td>...</td>
<td>...</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>...</td>
<td>6</td>
<td>In Hu-kueng province and district of Hou-nán.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept at the jungle village of Shyáho after traveling 2 stages, ...</td>
<td>10</td>
<td>...</td>
<td>18</td>
<td>18</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td>16th</td>
<td>Received provisions at the city of Khüng-yang-hien (Khüng-ya-hien?) ...</td>
<td>3</td>
<td>...</td>
<td>4</td>
<td>4</td>
<td>...</td>
<td>3</td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept at the chokey village of Lin-tóün, ...</td>
<td>20</td>
<td>...</td>
<td>16</td>
<td>16</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td>17th</td>
<td>Received provisions at the city of Shyín-Kyi-hien, ...</td>
<td>10</td>
<td>...</td>
<td>8</td>
<td>8</td>
<td>...</td>
<td>4</td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept at the city of Lon-kí-hien, ...</td>
<td>10</td>
<td>...</td>
<td>20</td>
<td>20</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td>18th</td>
<td>Received provisions and presents at the city of Yuen-tsó-fú (Shyeng-tsúin other lists Tching-teou,.) ...</td>
<td>10</td>
<td>...</td>
<td>6</td>
<td>6</td>
<td>...</td>
<td>4</td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Travelled that day and all night, and received breakfast at the city of Tauk-slí-hien, ...</td>
<td>3</td>
<td>...</td>
<td>18</td>
<td>18</td>
<td>1</td>
<td>...</td>
<td>...</td>
<td>Ditto.</td>
<td></td>
</tr>
<tr>
<td>19th</td>
<td>Received provisions &amp; presents at the city of Tšeng talk-fú, where a Ti-tú resides. (Tchang-te, ...</td>
<td>3</td>
<td>...</td>
<td>9</td>
<td>9</td>
<td>...</td>
<td>4</td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Route of a Journey from Amarapura to Pekin

<table>
<thead>
<tr>
<th>Day of the month and year</th>
<th>Names of places</th>
<th>Hills and mountains crossed</th>
<th>Large Rivers crossed</th>
<th>Small Rivers crossed</th>
<th>Bridges crossed</th>
<th>Cholavas crossed</th>
<th>Distance in Burmese Miles</th>
<th>No. of days and nights stopped at each place</th>
<th>No. of gates in each place</th>
<th>Under what Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>19th Aug</td>
<td>Travelled all night and stopped at the city Lu-yeng-hien,</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
<td>In Hu-kueng province and District of Hú-nán.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20th</td>
<td>Proceeded and disembarked from the boats at the landing place of Bi-yeng or Yi-yeng,</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proceeded by land and slept at the city of Tshiyeng-hien,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21st</td>
<td>Slept at the city of Ni-yeng-hien,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23rd</td>
<td>Slept &amp; received presents at the city of Tsheng-shyā-fū, which is the principal city of Hú-nán, and at which a Fu-yeng resides. (Techang-techa?)</td>
<td>1</td>
<td>10</td>
<td>10</td>
<td>1</td>
<td>8</td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24th</td>
<td>Slept in the city of Shàn-yin-hien,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25th</td>
<td>Slept in the village of Tūkyin-yi,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26th</td>
<td>Slept in the city of Yo-tcheo?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27th</td>
<td>Slept in the village of Kūn-khō,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28th</td>
<td>Relieved bearers at the city of Bhā-khi-hien, or Fū-khi-hien,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept at the city of Shinlin-hien,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29th</td>
<td>Embarked in boats and slept in the middle of a lake,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30th</td>
<td>Received presents and slept at the city of Wātseng-fū, which is the principal city of Hūpē and at which a Tsoktū lives. (Fouthang),</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31st</td>
<td>Landed and slept at the village of Shyō-khō,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>Proceeded by land and slept at the village of Yēng-tyeng,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>Stopped at the village of Kueng-shue,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ditto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day of the month and year</td>
<td>Names of places</td>
<td>Hills and mountains crossed</td>
<td>Large Rivers crossed</td>
<td>Small Rivers crossed</td>
<td>Bridges passed</td>
<td>Distance in British Miles</td>
<td>No. of nights stopped at each place</td>
<td>No. of gates in each city</td>
<td>Under what Jurisdiction</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------</td>
<td>----------------------------</td>
<td>---------------------</td>
<td>--------------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>-----------------------------------</td>
<td>--------------------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>3rd Sept</td>
<td>Slept at the city of Shyeng-yeng-chow, where we were presented with carriages to ride in, by the Taouk-tait</td>
<td>1 10 10 13 13 1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>In Honan province (Honan)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Sept</td>
<td>Slept in a monastery in the village of My'In-kyan yi</td>
<td>5 5 8 9 9 3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th Sept</td>
<td>Changed carriages, &amp;c. in the city of Khya-shan-hien</td>
<td>5 5 6 7 1 3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th Sept</td>
<td>Slept at the city of Tshue-phyan-hien</td>
<td>5 5 6 6 1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th Sept</td>
<td>Relieved horses, &amp;c. at the city of Lein-yang-hien</td>
<td>5 5 6 6 6 3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th Sept</td>
<td>Slept at the city of Shui-chow</td>
<td>5 5 6 6 1 4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9th Sept</td>
<td>Slept at the city of Shi-tien-hien</td>
<td>5 5 6 6 1 4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10th Sept</td>
<td>Slept in the village of Khun-ti-sun-yi, after crossing the Wheng-ho river, (Hoang-ho,)</td>
<td>5 5 1 4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11th Sept</td>
<td>Passed the city of Tan-yi-hien,</td>
<td>3 3 10 5 2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12th Sept</td>
<td>Received presents and changed horses, &amp;c. at the city of Tshen-taik-fiu, (Tching-te,)</td>
<td>5 5 10 5 8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the province of Tsit-li, (Tche-li, or Pe-tche-lir,)
<table>
<thead>
<tr>
<th>Day of the month and year</th>
<th>Names of places</th>
<th>Hills and mountains crossed</th>
<th>Large Rivers crossed</th>
<th>Small Rivers crossed</th>
<th>Bridges passed</th>
<th>Distance in Burmese Talanges</th>
<th>No. of nights stopped at each place</th>
<th>No. of gates in each city</th>
<th>Under what Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>13th Sept</td>
<td>Stopped in the city of Hō-tan-hien</td>
<td>2 2 14 7 1 4</td>
<td>In the province of Tsit-li, (Tcheli or Pe-tche-li.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14th</td>
<td>Breakfasted at the city of Myeng-kuong-hien</td>
<td>1 1 8 4</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Passed the city of Tshō-ka-hien</td>
<td>1 1 8 4</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Received presents and dined at the city of Shuang-taik-fū, (Chun-te?)</td>
<td>1 1 10 5</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept in the city of Shuang-taik-hien</td>
<td>1 1 6 3 1 3</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15th</td>
<td>Breakfasted at the city of Ne-khyō-hien</td>
<td>2 2 12 6</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept in the city of Pē-shyan-hien</td>
<td>3 3 12 6 1 3</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16th</td>
<td>Changed carriages, &amp;c. at the city of Tsō-chow, (Tcha?)</td>
<td>3 3 12 6</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept in the city of Lueng-yeng-hien</td>
<td>1 1 20 10 1 4</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17th</td>
<td>Received presents at the city of Tsin-tin-fū, (Tching-ting?)</td>
<td>1 1 12 6</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept in the village of Tsein-tshin-phū</td>
<td>1 1 8 4</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18th</td>
<td>Changed carriages, &amp;c. at the city of Tsin-lō-hien</td>
<td>2 2 9 4</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Were entertained at the city of Tisin-chow, (Ting?)</td>
<td>2 2 6 3</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slept at the village of Shin-poin-teng</td>
<td>1 1 10 5</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19th</td>
<td>Changed carriages, &amp;c. and were entertained at the city of Wün-tū-hien, Dined in the village of Thuen-yūn-khyauck (Khyauck means six in Burmese), Slept in the city of Pauk-tin-fū where a Tsōm-tū resides, from whom we received presents, (Paoting)</td>
<td>3 3 6 3</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 2 4 2</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21st</td>
<td>Breakfasted at the city of An-shyō-hien, (Nyan?) (Nyan-shu in the lists of other ambassadors), Slept in the village of Pēhō, (Pē-khō in other lists)</td>
<td>2 2 12 6</td>
<td>Under Tsit-li.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 3 12 6 1</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22nd</td>
<td>Slept at the city of Tsō-chow</td>
<td>1 1 15 8 1 4</td>
<td>Ditto.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day of the month and year</td>
<td>Names of places</td>
<td>Hills and mountains crossed</td>
<td>Large Rivers crossed</td>
<td>Small Rivers crossed</td>
<td>Bridges crossed</td>
<td>Distance in Burmese Taungs</td>
<td>No. of nights stopped at each place</td>
<td>No. of gates in each city</td>
<td>No. of Leagues</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------</td>
<td>-----------------------------</td>
<td>----------------------</td>
<td>---------------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------------------------</td>
<td>-------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>23rd Sept</td>
<td>Passed the city of Koun-kyi-tsheng, and stopped at the city of Luka-khyauk-ken, (Khyauk-ken may mean 6 chokeys, in Burmese,)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24th</td>
<td>Slept at the village of Tshi-town</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25th</td>
<td>Passed the city of Khyu-itt-ts6-hien, Slept at the city of Myuyin, Breakfasted at the city of Shi-shy sh-hien, Slept at the village of Tshdn-shi, Ditto, Ditto, Ditto</td>
<td>2 2 10 7 3 3</td>
<td>12 10 10 7 3 3</td>
<td>6 6 6 6 6 6</td>
<td>4 3 3 3 3 3</td>
<td>1 1 1 4 4 4</td>
<td>1 1 1 1 1 1</td>
<td>1 1 1 1 1 1</td>
<td></td>
</tr>
<tr>
<td>26th</td>
<td>Passed the city of Khyu-itt-ts6-hien, Slept at the city of Myuyin, Breakfasted at the city of Shi-shy sh-hien, Slept at the village of Tshdn-shi, Ditto, Ditto, Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27th</td>
<td>Slept in the village of Tshdn-shi, Ditto at the city of L6n-phiu-hien, Arrived at the city of Ye-ho, (Zhehol or Gehol), Left the city of Ye-ho, Ditto</td>
<td>8 8 5 8</td>
<td>11 12 7 1 1</td>
<td>9 12 7 6 4</td>
<td>1 1 4 8 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28th</td>
<td>Passed the city of Khyu-itt-ts6-hien, Slept at the city of Myuyin, Breakfasted at the city of Shi-shy sh-hien, Slept at the village of Tshdn-shi, Ditto, Ditto, Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29th</td>
<td>Arrived at the city of Ye-ho, (Zhehol or Gehol), Left the city of Ye-ho, Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30th</td>
<td>Left the city of Ye-ho, Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31st</td>
<td>Arrived at the great city of Pe-kyin (Pekin), Ditto</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of Stages travelled</th>
<th>No. of Taungs</th>
<th>No. of Cities passed</th>
<th>No. of Chokeys</th>
<th>No. of large rivers</th>
<th>No. of small rivers</th>
<th>No. of nights stopped on the road</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>193</td>
<td>493</td>
<td>944</td>
<td>35</td>
<td>493</td>
<td>109</td>
</tr>
</tbody>
</table>

Names of the Ambassadors,
NE-MYO-SHUE-DAUNG, THI-HAGYO-GAUNG, WELUTHARA.

On the 7th September, 1790, the Tsö: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 Tsö: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 accommodation, 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 Tū-kā-ngyen, E-kū-ngyen, and Thān-kū-ngyen, received honorary titles, and the province of Taung-bain 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:gyih prepared some valuable presents for the emperor of China and the Tsōin-tú of Yunan, and conferring an honorary title on each: on the former that of Thōi tari pawara mahā nāga thū-dhamma rájā-di-rājā*, 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-nóra-thá, the Tsō:buáh of Ba-mó; Ne-myó-nanda-gyó-thē, the Ken-wún or superintendent of chokeys; Ne-myó-nanda-gyó-den, the Padá-wún, royal store-keeper or officer of the king's treasury; Thíha-gyó-zuá, the Than-dō-yan and Yāza-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:buâh 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 Amarapûra with valuable presents, &c. from the emperor of China. Captain Symes saw this embassy at Amarapûra, 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 Amarapûra 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:buâh 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 10 lbs. 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'-tin-weng, on the 1st day of Tabawung 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-darâ: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 via 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'-ló-ye' and Yeng-tsíng-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-ehue-zen, and Nga-shuem-aung, superintended by the Chinese clerk.

"Elder brother Thauk Kuon, (Tao Kuang,) king of U'dil, who, assisted by the Tha-gyā 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-gyā 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 Kyâ’-tshî’n in the sixteenth year of (his) reign, and in the time of younger brother’s grandfather Alaung Meng-dara’gyî’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. Tshî’n-ta’-yeng, the Tsoun-tú of Maing:tsbi, was directed to transmit presents again in charge of Yeng-tshenj-ye’, but the Tsoun-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 Tsoun-tú, Myî’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 Thauk Kuon’s reign, elder brother, Thauk Kuon, king of U’dil, 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-gût† by Tsare-dô-gyî’h (principal clerk or secretary) Ne-myommentha, 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 Yatanapyâra, 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 Thîri-ya-warâ thû-dhamma mahâ râjâ-di-râjâ† 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,haûk Kuon, king of Udî, 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'gyî'h, the grandfather of (your) royal friend, and founder of the great golden city of Amarapûra, and Khîyeng-loun, the grandfather of T,haûk Kuon, king of Udî, 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,haûk Kuon, king of Udî's reign, on the 6th of April 1823, Yan-ta'-lô-ye', Yêng-tsâng-ye', Tsô-lo-tsoun, Tou'n-lo-tsoun and La-tsêng-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 net-work, 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-zô tree bearing fruit, and 1 me-tsô 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-mentha, who is employed within the palace, Nîra-ze-yâ Nôra-tha', Thi'-ha-tsi'-thu' Nôra-tha', Shue-daung-thu'-yan Nôra-tha, Shue-daung-thu'-ra Nôra-tha'-gîô-den, and Y'a'za Nôra-tha'-gîô-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, byamhâs, nats and men, whom (your) royal friend unceasingly adores in order to obtain meg and phô (qualities possessed by inspired disciples of Gau-dama), and Neibban (the Buddhist heaven), and whose images are sent from a desire that he should be worshipped; 2 ivory masts for T,haûk Kuon, king of Udî's own use; 2 ivory boxes; 2 ivory cushions; 2 pieces of yellow broacades; 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 Pâli 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 "bo" which is given in the translation of the first part of the emperor's letter.

"Information obtained from Thí-ha-tsî-thû’ Nôra-tha' and Ya'za Nôra-tha'-gyô-gaung, who accompanied the Tsa-re-gyîh Ne-myô-men-tha, when he was deputed as envoy to the Chinese city in the kingdom of Gan-dá-la-yit, on examining them regarding the affairs and customs of China, and the distances of the different halting places on the road.

"In the year 1853 (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-gyîh Ne-myô-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-la-nâ-pâ-ra (Ava) on the 15th 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 Mô:myîn, 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-kyens* 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 Nâ-k-hán (Nga-shân), the city writer Nga-bôn, with two hundred followers, and by four hundred Ka-kyens 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 Mô:myîn to receive us, and therefore sent back to their homes the people from Ba-mô, and the Ka-kyens 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 Mô:myîn 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-kyens.
distance of ten taings reached the city of Mō:win. In the villages lying between Luay-laing-ken and Mō:win, there are many pagodas and za-yats*.

In the monasteries to the eastward of the brick-house, in which the Tsō-buš of Mō:win resides, there are many Yahans†, who have Then-guns‡; 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 Mō:win two days, and on leaving it reached the city of Mō:myin 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 Mō:myin 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 Tsoūn-tû of Yu-nan, and stated, that in consequence of the successful services of the principal Chinese envoys who had come to Ava, Tsō-Lō-Tsou’n and Tou-Lō-Tsou’n were appointed to a command of 3,000 soldiers each at Mō:myin, where they were to remain, and Yan-Ta’-Lō-ye’ was appointed to a similar command at Maing-tsūh, 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 dān, 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, sighing 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 censoring other priests. 10th. Backbiting and exciting schisms and separation among priests.
Some account of the Wars between Burmah and China. [June,

remain. With Wu’-na-ta’-lō-ye’, whom the governor Hu’-ta’-lō-ye’ appointed to take charge of us, and the Chinese interpreters Yeng-tsheng-ye’, La-tsheng-ye’, and Ya-tsheng-ye’ we left Mō:myin, and in four stages reached the river called by the Chinese Loān-kyan and by the Burmese Mé-ishaung. 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 Maiung-tshi. 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 Tsōn-tū lives in a brick house of 70 cubits in extent. We remained here twenty days, and left it on the 21st October, 1823, the Tsōn-tū of Maiung-tshi 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-fū 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-fū, where there are many ships (junks) and boats. Between Tshan-taik-fū, and Tsein-shuon-fū there are many large towns and villages. We stopped a day at Tshan-taik-fū, and then proceeded by land in thirty-seven stages to the Tseng-tein-fū. 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 Phoēn-gyiik’s or Buddhist priest’s flag staff, and a large kyaung 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-fū and Tseng-tein-fū there are many large towns and villages. After leaving Tseng-tein-fū we arrived in ten stages, on the 22nd January, 1824, at the city of Pēkyin (Pekin) the residence of the king of China. We left Ba-mō 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 10½ 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 Khan-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 Wûn-gyih Li-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 Yoûn (minister's council house or court house, in which it is customary for ambassadors in Aua 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 Toûn-byan-mhein gateway; then, going to the westward, the Shyâ-hâ-mhein, Shyâ-kô-mhein, Yoûn-tsêin-mhein, Nân-shyin-mhein, Khan-shyi-mhein, and lastly to the south-west, the Shyin-byân-mhein, altogether seven gateways. On the eastern face of the great city, there are to the eastward, the Toûn-tsêin-mhein gateway, and to its southward the Tshû-wâ-mhein. On the southern face to the south-east, the Tshû-wein-mhein; then, in the centre the Tsheng-mhein, and to the south-west, Shyûn-tsi-mhein. On the western face, to the south-west, the Phyen-tsê-mhein, and to the northward of it the Shyeng-tsê-mhein. On the northern face, to the west, the Tŏ-shyân-mhein, and the east, An-tsein-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 Shyin-wâ-mhein, and to the northward Hô-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, ngā-pī, chillies, onions, greens, pork and fowls under the direction of the Chinese officer Pan-tshāing 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 60 houses were sent to us, and we were summoned by the Li-pū-tā-yeng Wūng-gyih to attend on the emperor, who was coming out to see the amusement on the ice. We proceeded accordingly, and joined Li-pū-tā-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 Wūng-gyih 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 Ya'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-kwon-hô 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 î 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 Yue-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 envos 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 Yechó (Zhehol) 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 Tsoun-tus. The westward two, to the southward three, and to the eastward two. There is no Tsoun-tu appointed to the northward, where the kingdom joins to Tartary. There are thirteen officers who exercise authority under one of the western Tsoun-tus. The names of those who receive orders from the Titù, who commands the soldiers under the Tsoun-tù, are Ti-taik, Kheng-taik, Shyin-taik, Tsik-taik, Tsâin-kyan, Yo-kyge, Tsà-tse, Shyö-pe, Tsheng-tsoun, Pë-tsoun, Wu-tsoun, and Lo-tsoun, making altogether thirteen military officers. There are ten civil officers under the Tsoun-tu, and their names are Pu'-taik who exercises authority over the revenue officers, sitting
on the left hand of the Tsōn-tū and on an equality with him; and under Phu'-taik and receiving orders from him, are, Phu'-kueng, Tsō-kueng, Yeng-tsē, Yeng-taung, Pan-tshaiing, Ta'-kauk-kou'n; Shyauk-kauk-kou'n, Tu'tō, and Teng-tsani, making ten great and small civil officers. The Tsōn-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 Tsōn-tūs exercise authority over the military and revenue officers. With each Tsōn-tū under the Ti-tū 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 Tsōn-tūs, there are seven Ti-tūs, 49 military officers and 147,000 soldiers. When the soldiers are to receive their monthly pay, orders are given to the Phū-tai, who brings the money to the Tsōn-tū, and he delivers it to the chief of the soldiers, to the Ti-tū, who distributes it amongst the soldiers, at the rate of three ta'-yeng, person a man per month. There are eight officers near the person of the emperor, receiving and executing his orders. The Wūn-γiyh (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 Kyōm-hein Ti-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. Kyōm-hein Ti-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 Lē-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 Tsōn-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 Tsoün-tū are accompanied by six, four, or two men, according to the respective rank of such officers. Whenever all these officers, including the Tsoün-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 Tsoün-tū, Ti-tū, Ti-taik, Kheng-taik, Shyun-taik, Tawk-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 Tsoün-tū, Ti-tū, 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, betel nut, plantain, tamarind, lime, guava, or custard-apple trees. The trees which grow before you reach Pekin, in the neighbourhood of Mā-myin, 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-mō 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 Pekin, 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.)

<table>
<thead>
<tr>
<th>Date</th>
<th>Names of places</th>
<th>Taings</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>18th June, 1823.</td>
<td>Left the city of Ava, and proceeded to the city of Ama-ra-pū-ra, where the mission stopped a day to complete the equipment of their boats,</td>
<td>3</td>
<td>* The estimated distances are given in the Burmese taing, equal to 2 miles 293½ yds.; in round terms, two miles or one coss.</td>
</tr>
<tr>
<td>20th. ......</td>
<td>Villages of Men-gwun and Shyā-yang,</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>21st. ......</td>
<td>Village of Ngā-bat-khuang (river),</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>22nd. ......</td>
<td>Villages of Yoûn-pen and Ka-pyun,</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>23rd. ......</td>
<td>Chokey of Tsān-bay-na-gō, where the mission stopped two days, as there was no wind, and the boatmen were changed,</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>26th. ......</td>
<td>City of Khān-nyut,</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>27th. ......</td>
<td>City of Tu-gaung,</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Names of places</td>
<td>Remarks</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>28th June</td>
<td>Village of Thi-gyain, opposite to the town of Mya-daung</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29th</td>
<td>Village of En, under Mya-daung</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30th</td>
<td>Village of Ye-bout under city of Katha</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st July</td>
<td>Village of Kyauk-thoun, under the city of Yen-gé or Yeng-khé</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>Village of Nga-té-doun, under ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd</td>
<td>Village of Zi-byu-goun, under Shue-gá</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th</td>
<td>Village of Shue-bóin-thá, under ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th</td>
<td>City of Shue-gá. Here, in consequence of the stream running with unusual violence over the rocks, the mission durst not advance, and waited nine days.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14th</td>
<td>Village of Nyaung-ben-thá, under Tsin-khan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15th</td>
<td>City of Tsin-khan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16th</td>
<td>Village of Len-ban-pya, opposite to Kaung-tóin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17th</td>
<td>City of Ba-mó, where the mission stopped 28 days, for answers to petitions sent to the king at Ava.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15th Augt.</td>
<td>Left Ba-mó, and halted at the village of Tsí-en or Tsin-eng</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16th</td>
<td>Tu-dá-gyih, (great bridge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17th</td>
<td>On the Ka-khyen hill village of Mhaing-tóin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18th</td>
<td>On the Ka-khyen hill village of Hó-tóin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19th</td>
<td>On the Ka-khyen hill village of Mhaing-khá</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20th</td>
<td>At the Luay-tyang Ken-dat, or fortified chokey of Luay-tyang</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21st</td>
<td>City of Mo-wun. Here the mission stopped two days, in consequence of being fatigued.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24th</td>
<td>Shyan-mue-tóin, Ken-dat, or fortified chokey of that name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25th</td>
<td>Village of Moüin-tóin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Travelled in 19 days. 112

Travelled in six days. 30

Burmese Tainghs.

The Shan names are Kat-mái and Man-mó, and the Chinese Tsin-kai.—B.

Burmese Taings.

The Shan name is Khú-tóng, meaning also great bridge or causeway.—B.

The Shan name is Hú-tóng, meaning end of the paddy fields.—B.

The Shan name is Mung-khá.—B.

Frontier post between Ava and China, which has a Chinese garrison of 100 Ló-tseng, (Chinese word Ló-chiong for soldiers.) The Shan name is Loai- teng, red hill.—B.

The Shan name is Mung-won, and Chinese name Long-tehuen.—B.

Here is a Chinese garrison of 1,000 Ló-tseng.

Shan name Monlong.—B.
Route of a Journey from Amarapura to Pekin. [JUNE,

<table>
<thead>
<tr>
<th>Date</th>
<th>Names of places</th>
<th>Taungs</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>26th Augt</td>
<td>City of Main-thi or Main-dí, where the mission stopped a day.</td>
<td>7</td>
<td>Shan name of Múng-Tí, and Chinese name Nan-ten.</td>
</tr>
<tr>
<td>28th</td>
<td>City of Múmyén, where the mission stopped 12 days, in consequence of the elephants intended as a present from the king of Ava to the emperor of China not having come up, and in order to give them a little rest after they joined,</td>
<td>7</td>
<td>Shan name Múng Myeng, and Chinese name Theng- ye-chow.</td>
</tr>
<tr>
<td>8th Sept</td>
<td>Village of Kan-lan-lsan,</td>
<td>8</td>
<td>Shan name Kop-nám-chán, meaning Chán river bazar.</td>
</tr>
<tr>
<td>9th</td>
<td>Village of Pá-weng,</td>
<td>8</td>
<td>Shan name Páwan, under Múng-khú-lóng, near it.—B.</td>
</tr>
<tr>
<td>10th</td>
<td>Village of Phú-pyan, after crossing the Sa-liuen river,</td>
<td>7</td>
<td>Shan name Phú-phyaao.—B.</td>
</tr>
<tr>
<td>11th</td>
<td>City of Wung-tsheng or Wunzen,</td>
<td>9</td>
<td>Shan name Yông-sang, and Chinese Yông-tchang-fú.—B.</td>
</tr>
<tr>
<td>12th</td>
<td>Village of Shyan-mu-ho,</td>
<td>12</td>
<td>Called Yóm-byen-hien in another journal.—B.</td>
</tr>
<tr>
<td>13th</td>
<td>Village of Yan-pyen-hien,</td>
<td>9</td>
<td>Called Khun-leng-bú in another journal.—B.</td>
</tr>
<tr>
<td>14th</td>
<td>Village of Shyan-leng-po,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15th</td>
<td>Village of Shyan-leng-po,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16th</td>
<td>Yan-byi-hien,</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>17th</td>
<td>Village of Hó-kyan-po,</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>18th</td>
<td>City of Tsauk-chow, under Chūlí,</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>19th</td>
<td>Village of Khoun-haik,</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>21st</td>
<td>Village of Pú-póin,</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>22nd</td>
<td>Village of Shya-khyauk,</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>23rd</td>
<td>Village of Lí-hó,</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>24th</td>
<td>City of Tshi-shyaun (Chou-hiung),</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>25th</td>
<td>Village of Kueng-toun-hien,</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>26th</td>
<td>Village of Shuy-tse,</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>27th</td>
<td>City of Li-thoun-hien,</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>28th</td>
<td>Village of Ló-ya-kwon,</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>29th</td>
<td>City of An-leng-chow,</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>30th</td>
<td>City of Yit-nan, Maing-Tshi, the residence of the Tsou-nú, where the mission stopped 20 days waiting for the elephants to come up,</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Travelled in 26 days, 203

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, Yit-nan-yi is set down between these two stages.—B.

Burmese Taungs.

<table>
<thead>
<tr>
<th>Date</th>
<th>Names of places</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>21st Oct</td>
<td>Left Yî-nan, and stopped at the village of Wan-khayauk.</td>
<td></td>
</tr>
<tr>
<td>22nd</td>
<td>Village of Yan-lein,</td>
<td>7</td>
</tr>
<tr>
<td>23rd</td>
<td>Village of Yi-tsoin-lsan,</td>
<td>8</td>
</tr>
<tr>
<td>24th</td>
<td>City of Mós-loin-chow (Malong),</td>
<td>7</td>
</tr>
<tr>
<td>25th</td>
<td>City of Shyd-yi-chow,</td>
<td>5</td>
</tr>
<tr>
<td>26th</td>
<td>Village of Pé-shyau,</td>
<td>6</td>
</tr>
<tr>
<td>27th</td>
<td>Village of Pyeng-yeng-hien,</td>
<td>6</td>
</tr>
<tr>
<td>28th</td>
<td>Village of Yi-sa-khoúin,</td>
<td>7</td>
</tr>
<tr>
<td>29th</td>
<td>Village of Yo-kwon-leng-Isân,</td>
<td>7</td>
</tr>
<tr>
<td>30th</td>
<td>Village of Pé-shiyun,</td>
<td>11</td>
</tr>
<tr>
<td>31st</td>
<td>Village of A-tú-leng,</td>
<td>6</td>
</tr>
<tr>
<td>1st Nov</td>
<td>City of La-ting,</td>
<td>6</td>
</tr>
<tr>
<td>2nd</td>
<td>Village of Bó-kouen,</td>
<td>6</td>
</tr>
<tr>
<td>3rd</td>
<td>City of Tsen-leng-chow, (Tchën-king?)</td>
<td>6</td>
</tr>
<tr>
<td>Date</td>
<td>Names of places</td>
<td>Things</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>4th Nov.</td>
<td>City of An-shue-fu, (Ngan-chan?)</td>
<td>6</td>
</tr>
<tr>
<td>5th</td>
<td>Village of Ngan-pyeng-hien</td>
<td>8</td>
</tr>
<tr>
<td>6th</td>
<td>City of Tsheng-tsein-hien</td>
<td>6</td>
</tr>
<tr>
<td>7th</td>
<td>City of Kue-chow, (Kori-yang?)</td>
<td>6</td>
</tr>
<tr>
<td>8th</td>
<td>Village of Lyo-yen-tsun</td>
<td>6</td>
</tr>
<tr>
<td>9th</td>
<td>City of Sheng-pyeng-hien</td>
<td>8</td>
</tr>
<tr>
<td>10th</td>
<td>Village of Kuan-pyeng-chow, (Koang-ping ?)</td>
<td>7</td>
</tr>
<tr>
<td>11th</td>
<td>Village of Tsi-pyeng-hien</td>
<td>7</td>
</tr>
<tr>
<td>12th</td>
<td>City of Tsein-shun-fu, (Tchin-yuen,)</td>
<td>7</td>
</tr>
<tr>
<td>13th</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Travelled in 25 days,</td>
<td>169</td>
</tr>
<tr>
<td>17th</td>
<td>Left Tsein-shun-fu by water and proceeded down the stream to Tshi-tsein-hien</td>
<td>9</td>
</tr>
<tr>
<td>18th</td>
<td>Village of TAU-yi-than</td>
<td>13</td>
</tr>
<tr>
<td>19th</td>
<td>Village of Pyan-shue</td>
<td>10</td>
</tr>
<tr>
<td>20th</td>
<td>City of Yuon-tsou-fu</td>
<td>10</td>
</tr>
<tr>
<td>21st</td>
<td>Village of Tsohn-than</td>
<td>12</td>
</tr>
<tr>
<td>22nd</td>
<td>Village of Houin-kyo-chow</td>
<td>11</td>
</tr>
<tr>
<td>23rd</td>
<td>City of Nyan-kyawng-chow</td>
<td>6</td>
</tr>
<tr>
<td>24th</td>
<td>Village of Touin-wian-id</td>
<td>8</td>
</tr>
<tr>
<td>25th</td>
<td>Village of Shi-wiu-shitho</td>
<td>13</td>
</tr>
<tr>
<td>26th</td>
<td>Village of Ma-tsein-nguo</td>
<td>6</td>
</tr>
<tr>
<td>27th</td>
<td>City of Shyen-tsou-fu, (Tching-tcheong,)</td>
<td>8</td>
</tr>
<tr>
<td>28th</td>
<td>Village of Kyang-tan</td>
<td>11</td>
</tr>
<tr>
<td>29th</td>
<td>Village of Kaing-shyo</td>
<td>10</td>
</tr>
<tr>
<td>30th</td>
<td>Village of Tawk-shyo-hien</td>
<td>12</td>
</tr>
<tr>
<td>1st Dec.</td>
<td>City of Tshen-tailed-fu, (Tchang-te,)</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Travelled in 15 days,</td>
<td>148</td>
</tr>
<tr>
<td>3rd</td>
<td>Left Tshen-tailed-fu, by land in litter or sedan chairs, and halted at Tai-loyun-tsan</td>
<td>6</td>
</tr>
<tr>
<td>4th</td>
<td>Village of Tsh-khoan-yi</td>
<td>6</td>
</tr>
<tr>
<td>5th</td>
<td>City of Li-chou</td>
<td>6</td>
</tr>
<tr>
<td>6th</td>
<td>Village of Shue-leng-yi</td>
<td>5</td>
</tr>
<tr>
<td>7th</td>
<td>Village of Koun-gan-hien</td>
<td>8</td>
</tr>
<tr>
<td>8th</td>
<td>Village of Tshuon-leng-ye</td>
<td>5</td>
</tr>
<tr>
<td>9th</td>
<td>City of Kyong-tsou-fu, (Kim-techow,)</td>
<td>6</td>
</tr>
<tr>
<td>10th</td>
<td>Village of Kyong-yeng-ye, (Kim-men,)</td>
<td>9</td>
</tr>
<tr>
<td>11th</td>
<td>Village of Kyong-mei-chou, (Kim-men,)</td>
<td>9</td>
</tr>
<tr>
<td>12th</td>
<td>Village of Leng-yan-ye</td>
<td>12</td>
</tr>
<tr>
<td>13th</td>
<td>Village of Yi-tsein-hien</td>
<td>9</td>
</tr>
<tr>
<td>14th</td>
<td>City of Thun-Iseng, where the mission stopped two days to prepare carriages for prosecuting the journey, (Syang-yang ?)</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Travelled in 12 days,</td>
<td>81</td>
</tr>
<tr>
<td>Date</td>
<td>Names of places</td>
<td>Remarks</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>17th Dec.</td>
<td>Left Thuon-tsheng in carriages, and stopped at the village of Lô-yêng-yì</td>
<td>6</td>
</tr>
<tr>
<td>18th</td>
<td>Village of Theng-yê-hien</td>
<td>6</td>
</tr>
<tr>
<td>19th</td>
<td>Village of Leng-yêng-yì</td>
<td>6</td>
</tr>
<tr>
<td>20th</td>
<td>City of Nan-yân-fú, (Nan-yang.)</td>
<td>6</td>
</tr>
<tr>
<td>21st</td>
<td>Village of Pô-wun-yì</td>
<td>6</td>
</tr>
<tr>
<td>22nd</td>
<td>City of Yui-chow, (Yu ?)</td>
<td>6</td>
</tr>
<tr>
<td>23nd</td>
<td>Village of Kyô-shyeng</td>
<td>9</td>
</tr>
<tr>
<td>24th</td>
<td>Village of Shan-hien</td>
<td>9</td>
</tr>
<tr>
<td>25th</td>
<td>City of Tshan-kô-shì</td>
<td>11</td>
</tr>
<tr>
<td>26th</td>
<td>Village of Sheng-tseng-khyeng</td>
<td>6</td>
</tr>
<tr>
<td>27th</td>
<td>City of Tseng-chow, (Tching ?)</td>
<td>10</td>
</tr>
<tr>
<td>28th</td>
<td>Village of Shyeng-tsê-hien</td>
<td>6</td>
</tr>
<tr>
<td>29th</td>
<td>In consequence of a storm the mission stopped on the bank of the Whân-hô river this day...</td>
<td>1</td>
</tr>
<tr>
<td>30th</td>
<td>Village of Khan-tschoon-yì, where the mission stopped one day to enable some of the party detained crossing the Whân-hô (Hoangho) river, to come up...</td>
<td>5</td>
</tr>
<tr>
<td>1st Jan. 1824</td>
<td>Village of Shyeng-shan-hien</td>
<td>6</td>
</tr>
<tr>
<td>2nd</td>
<td>City of We-khue-fú, (One-kuin,)</td>
<td>6</td>
</tr>
<tr>
<td>3rd</td>
<td>Village of Yi-town-hien</td>
<td>12</td>
</tr>
<tr>
<td>4th</td>
<td>City of Tshan-lau-fú, (Tchangte,)</td>
<td>7</td>
</tr>
<tr>
<td>5th</td>
<td>Village of Tsán-chow</td>
<td>7</td>
</tr>
<tr>
<td>6th</td>
<td>Village of Han-thân-hien</td>
<td>7</td>
</tr>
<tr>
<td>7th</td>
<td>City of Yoon-tek-fú, (Chante ?)</td>
<td>12</td>
</tr>
<tr>
<td>8th</td>
<td>Village of Nein-shi-hien</td>
<td>6</td>
</tr>
<tr>
<td>9th</td>
<td>Village of Pô-shyê-hien</td>
<td>6</td>
</tr>
<tr>
<td>10th</td>
<td>Village of Luon-tshôn-hien</td>
<td>12</td>
</tr>
<tr>
<td>11th</td>
<td>City of Tseng-tein-fú, (Tching-ting,)</td>
<td>6</td>
</tr>
<tr>
<td>12th</td>
<td>Village of Tseng-lû-hien</td>
<td>9</td>
</tr>
<tr>
<td>13th</td>
<td>City of Tseng-chow, (Ting ?)</td>
<td>6</td>
</tr>
<tr>
<td>14th</td>
<td>Village of Puon-tsheit-khyô</td>
<td>9</td>
</tr>
<tr>
<td>15th</td>
<td>City of Pauk-teng-fú, where the mission stopped a day to receive presents, (Pao-ting,)</td>
<td>6</td>
</tr>
<tr>
<td>17th</td>
<td>Village of Ngan-shyû-hien, (Ngan ?)</td>
<td>5</td>
</tr>
<tr>
<td>18th</td>
<td>Village of Pé-khô,</td>
<td>6</td>
</tr>
<tr>
<td>19th</td>
<td>City of Tsae-chow, (Tso-techeou,)</td>
<td>9</td>
</tr>
<tr>
<td>20th</td>
<td>Village of Ti-teng,</td>
<td>6</td>
</tr>
<tr>
<td>21st</td>
<td>Village of Tshan-shyen-teng</td>
<td>6</td>
</tr>
<tr>
<td>22nd</td>
<td>City of Pé-kyûn (Pé-kin), where the Udî-men (king of the east, emperor of China) resides</td>
<td>5</td>
</tr>
</tbody>
</table>

Travelled in 35 days, 247

Remarks:

- "One of the male elephants died here."
- "One of the male elephants died here."
- "The female elephant died here."

Here is an image of GAUDAMA sitting cross-legged, placed in a Ta-zawng (4-cornered religious edifice) with five encircling gradations or stories.

Five days' journey from this place on Tsû or Wu-taltshan hill, we were told, that there are two of GAUDAMA's canine teeth, and eight other teeth.

Here the Tsoun-tu of Tsit-li resides.

Burmese Taings. Halted 81 days and travelled 140 days, altogether 221 days.
On returning from Pekin the mission marched by land that portion of the journey between Tshan-taik and Tsein-shuon, which they had before gone by water.

<table>
<thead>
<tr>
<th>Date</th>
<th>Names of places</th>
<th>Taings</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>17th April, 1824.</td>
<td>Left city of Tshan-taik-fu, and stopped at the eight villages of Thun-tauk-shan</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>18th.</td>
<td>Village of Shen-kyâ-yi</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>19th.</td>
<td>Village of Tseng-teng-yi</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>20th.</td>
<td>Village of Kaik-teng-yi</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>21st.</td>
<td>Village of Ma-teng-yi</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>22nd.</td>
<td>City of Shyeng-taik-fu</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>23rd.</td>
<td>Village of Tshon-khyi-yi, where the mission stopped two days</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>26th.</td>
<td>Village of Tshan-tan-yi</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>27th.</td>
<td>Village of Haik-yuôn-yi</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>28th.</td>
<td>Village of Koün-byeng-nhêng</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>29th.</td>
<td>City of Yuôn-tso-fu</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>30th.</td>
<td>Village of Pyan-yue</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>1st May,</td>
<td>City of Kuôn-chow</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>2nd.</td>
<td>Outside of a village in the jurisdic-</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tion of Sheng-yêl-kue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd.</td>
<td>Village of Tsheng-khye-hien</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>4th.</td>
<td>City of Tsein-shuon-fu</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Travelled in 16 days, ....... 107 Burmese Taings.

[To be continued.]

II.—Note on the Facsimiles of Inscriptions from Sanchi 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 Sanchi, 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-

tually cut away. It contains, as will be seen presently, and as M. Jacquot was able to guess with infinite trouble from the former transcript, an allusion to Maharaja 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 lát 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 Firoz's lát 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

Eastern Gateway of the Sanchi Tope. Bhilsa.

Northern Gate

Eastern Gate
Sculpture from a fragment of the South Gateway, at Sanchi.
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
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 Rama 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 Nagari.

Translation.

‘To the all-respected Sramanas, the chief priests of the śivasath ceremomial*, who by deep meditation have subdued their passions, the champions (sword) of the virtues of their tribe;—

* śivasath, 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 ?) dirhams; (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 rāja (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 Simvat (or year of his reign ?) 3, (in the month of) Bhādrapada, 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 dinár, 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 दिनार 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 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, “Bhādrapada dik" in letters, the tenth (सेठा) of Bhādrapada (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 श्रमणः(क)राति:
† दोन a pauper and क्रो to go—what is given to the poor! Wilson’s Dictionary.
or the dark half of the lunation, sudd or badi. Further, in them the term Bhādra is generally employed for the name of the month, while Bṛhadrapada 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 श for Samvat, we have a circle inclosing a cross and three horizontal dashes to the right, श ॥।।. This might be plausibly construed into 1000 and 3; or 403;—or one chakra of the Jovian or Vṛihapsati 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 श ॥ stand for Samvat, and ॥ 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 “ह वर्ष (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 ० being applicable rather to the century.
to follow the wrong path among the network 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 recomposed 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.

Translation.

“I hereby make known to all the assembled devotees offering up prayers for the father and mother of Hariśwámini, the eminent disciple of the wife possessing the āsan-siddha 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 Hariswámini, the disciple of the unchangeable sculpture-enshrined Siddha bháryá (or emancipated wife).

Samvat...?...Sravan...?...Aditya.”

All we learn from this inscription is, that a female devotee, Hariswámini, the pupil of the defunct lady abbess, probably, of the convent to which she belonged, either designed or repaired some of the bassorelievos 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-bháryáyah seems to imply a wife who had turned priestess, and who had died on her sacerdotal couch. Siddhásan is a seat so pire that the devotee sitting in it can, at will, be transported any where thereon. Siddha bháryya 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 dehgoa.
¶ 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 Hindi 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, \( \text{a} \text{a} \). 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 Sanchi.

taken in facsimile on paper by Capt. T. Smith.

1. ऋतुमयाः च रामकृष्णो नवादिहि
2. च प्रेमादिहि
3. देवतायां च रामकृष्णो
4. वरददेवतायां
5. देवतायां
6. च रामकृष्णो
7. च प्रेमादि
8. च नरमिश्रिणी
9. च रामकृष्णो
10. च प्रेमादि
11. च नरमिश्रिणी
12. च प्रेमादि
13. च प्रेमादि
14. च प्रेमादि
15. च प्रेमादि
16. च प्रेमादि
17. च प्रेमादि

the same on
3, 19 and 25

Shasvatapatramam thitanci

Prinsep lith.
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 उ, 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 अ 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 lit inscriptions; meanwhile, the following transcript in Roman letters of the Sanchi 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:—

Sámanérasa Abeyakasa Sethinon dánam; 'The gift of Sámané'ra and Abeyaka Seth.'

Sámanéra 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 Seth, the millionaire of Moorsheadabad.

No. 5. Dhamágálikasa máta dánam; 'The gift of the mother of (?) Dharmagarika.'

In No. 6 the first letter is doubtful:—

Gobavanágahopati 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 aqinkeya 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 rudovaya dana; 'The gift of Srv (or Sinha) Rakhtia, the hillman, to Rudava. ?'

No. 9 partially agrees with No. 6:—

Gobavanai gahapati nopatidhiyasa dana; 'The gift of Agrapati and Nopati, the cowherds, so called.'

No. 10 is of the simplest construction:—

Vajagata gama sa dana; 'The gift of Vajja, or probably Vrijagata Grama,' the population of a village in the province of Vrijja, combining to make their offering.


Here the caste, bhichhuno, the beggar (bhikshu) seems to have been added after the record, to distinguish the party, a ferryman, nadigata. ?

No. 13. Arahagatayasa dana; 'The gift of Arahagata: ' 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. Chiratiyada bhichhunyasa dana; 'The gift of Chirati, the poor woman.'

No. 15. Kudasas bhichhuno dana; 'The gift of Keda, 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: Isipalitasa-cha, Sumanasa-cha dana; 'The gift both of Isipalita, (the protected of God,) and of Sama (the priest).'

No. 17 partakes rather of the form of an obituary notice:—

Sethino mata kaniyada; 'The Sethin's deceased daughter!'

No. 18. Kakenoye bhagavata pamane rathi; ....... 'in testimony of God'. (the rest unintelligible). For kakenoye see note on insc. No. 1.

No. 20. Arahana dana bhichhuno pakharayakasa dana; 'The gift of the poor priest Pakharayaka. ?'

No. 22. Rudu barayarayasa pidarkhitasa dana.

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 bhichhuno ruganaratupa. ....... Budhpalitasa bhichhuno dana; 'The gift of Panthak, the poor man.... and of Buddhpalit, the poor man.'

No. 25 is in very large characters:—

Vajagato dana; 'The gift of Vrijagan, of which the genitive termination will, by the Pali rules, be made by changing dn into ato.
No. 21 has been reserved for the last, because it contains a second inscription in modern character:—the old writing is

Kekateyakasa dhama sivasa dānam; ‘The gift of Kekateyak Dharma.siva.’

Under this in the modern Deva-nāgarī,

र रा धिवाय देव प्रणमतिनिवे Rā Sāi Sāo Deva pranamati nityam.

‘Rā (for Rāja or Rāo?) Sāo 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 Sād.

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 Kalavada dānam; which may perhaps be interpreted Dattakaraṇaṇaṇa dānam, ‘the gift of Dattakaraṇaṇa,’ (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 devasa; which converted into its Sanscrit equivalent will be विप्रवेदवश्च Vipra devasya, the coin of Vipra Dēva. 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 dēva a place in the Indu vansa line of Magadha, and a descent from the individual of the same name in the Pauranic lists.
Other coins depicted in former plates may, in a similar manner, be read by the new alphabet.

The small bronze coins of Behat (fig. 5, Pl. XVIII. vol. III. and fig. 16 of Pl. XXXIV. vol. IV.) have the distinct legend \( \text{mahdrdja} \) in the square form of the same alphabet. The application of the word mahdrdja in the genitive, with no trace of a name, might almost incline us to suppose that the title itself was here used as a name, and that it designated the Mahraje, king of Awadh, of the Persian historians, who stands at the head of the third lunar dynasty of Indraprestha in the Rájvali!

The only other coin of the group which contains the same title is the silver decayed Behat coin, seen more perfect in General Ventura's specimen, (fig. 16 of Pl. XXXIV. vol. IV.) where may be read indistinctly \( \text{mahdrdja.} \) kunarasa.

On the bronze Behat coin (figs. 11, 12, of Pl. XVIII. vol. III. and 3, 6, 9, of Pl. XXXIV. vol. IV.) though we have ten examples to compare, the context is not much improved by the acquisition of our new key: the letters are \( \text{dhanaka} \) dhaya; (the second letter is more like \( \text{bhu.} \))

Col. Stacy's supposed Greek legends (figs. 2 and 3, of Pl. XXV. vol. III.) may be read (as I anticipated vol. III. p. 433) invertedly, \( \text{Yagá bijana puta (sa?)} \)

The larger copper coin, having a standing figure holding a trident (fig. 4, Pl. XXV. vol. III.) has very distinctly the name of \( \text{Bhagavata cha (or sa?)} \). A raja of the name of Bhagavata appears in the Magadha list, about the year 80 B. C.

On some of the circular copper coins we have fragments of a legend \( \text{Bhamada... vatapasa, quasi Bhimadeva tāpasya—} \) but the last word is the only one that can be confused in.

On a similar coin, of which Colonel Stacy has a dozen specimens (No. 47, Pl. XXXV. vol. IV.) the name of \( \text{Rámadatasa} \) of Rámadatta, is bounded by the lizard emblem of Behat.

These are the only two in the precise form of the lát character—the other are more or less modified.

Another distinct group (that made known first by Mr. Spiers) from Allahabat, (Pl. XXVI. figs. 12, 13, 14, 15, vol. III. page 448) can be partially deciphered by the lát alphabet. Capt. Cunningham has a fine specimen with the letters \( \text{Rája Dhana devasya—} \)
of rāja Dhana deva,' a name not discoverable in the catalogues, though purely Sanscrit. On three more of the same family we find नवसा. On one it seems rather नवसा, both nava and nara being known names. On another नुमासा; and on another, probably, महापति, 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 Pāli 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 Pāli alphabets, both of which are connected with, or immediately derived from, the more ancient character of the lāts. The word read by him, rāja, on some specimens seems to be spelled याजा rather than बिजा, a corruption equally probable, and accordant with the Pāli 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 Pāli character; thus अगधुकलायेज for Ἐλσακλέως; 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 ज is illegible.

I am the rather favorable to this view because on the corresponding coin of Panteleon, we likewise find both the second vowel of the Greek represented by the Sanscrit semivowel, and the genitive caseimitated:—supplying the only letter wanting on Dr Swiney's coin, the initial p, of which there are traces in Masson's drawing, the word पांतेलेवान्त is by the help of our alphabet clearly made out—the anuswara, which should follow the द being placed in the belly of the letter instead of outside; and the ए being attached to the centre instead of the top of the ꞛ, 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 Seleucidian kingdom from the invasion of Ptolemy 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 Phērēcles. 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 Pērēcles, 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, "Ἐπαρχὸς τῆς Περσίδος, 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 Antylocus, 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 Hindi 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 liks of Upper India.

Another convenient test by which the newly found alphabet can be proved was the Rev. Mr. Stevenson's facsimile of the Carli inscriptions published in the 3rd volume of the Journal, p. 428. I
will take one of these, (the most distinct,) of which I have preserved the type-metal cut, and underline it according to the supposed value of each letter.

Mahārīviasāgotiputasa atimitarakasapi hāthatādra.

This is not a facsimile, therefore I dare not assume that it is accurately rendered. I should myself incline to think that the final letter was an इ or न, producing the word so often found at Sanchi,—dānam; making it 'the gift with his own hand (hasta dānam) of Atri mitraka, the son of the great Rāvisāgoti.'

But I advance this reading with doubt, and merely to invite the attention of Mr. Stevenson himself to the revision of this and the other Carli inscriptions with which he was so obliging as to favor me, when we were as yet only on the threshold of the inquiry.

Again: It will be remembered that one of the inscriptions sent down in facsimile last year by Mr. Hathorne from Buddha-gaya*, was in the lāt character. It was found engraved on a pillar now forming the stanchion of an upper story in the convent, but was supposed formerly to have stood near the temple. On turning to my lithograph of it in Plate XXXIII. of vol. V. I perceive the concluding word dānam exactly as the Sanchi. The whole line, though very roughly engraved, may be now easily read as

\[ \text{Ayalekuddāngōye dānam;} \]

'The gift of Ayaleku dāngā.' If the ill-defined mark below the ल be a द, the reading may be Buddagaye dānam, 'gift to Buddha-gaya.'

The foregoing are, after all, but trifling ordeals for the new alphabet, compared with the experimentum crucis of the Delhi lāt inscription, which the antiquarian reader will not be satisfied until he sees performed in his presence. To this, then, I will now hasten, contenting myself with one or two sentences to demonstrate the perfect applicability of the system, and reserving for a future occasion the full interpretation of this strangely multiplied and important document, which it would be hardly fair to expect to read off-hand, even though it were written with entire orthographical precision, which a slight inspection has proved by no means to be the case.

I cannot select a better example for our first scrutiny than the opening sentence of the inscription. This I shewed in my former papers on the subject to be repeated over and over again in all the lāt inscriptions.

* See Plate XXXIII. of Vol. V. and page 658.
of Upper India; and the recent accession of the Girnar inscription of Gujarat, transmitted by Mr. Wathen, and of the Aswastuma inscription of Cuttack executed with such fidelity by Lieutenant Kittor, has proved that it belongs equally to them, although in other respects both these texts differ from those already known to us. Thus from the very numerous examples of this passage, we have an opportunity of observing all the variations it undergoes either from carelessness of the sculptor, from grammatical license, or from mistakes of the copyist. The most usual reading of the text, and the equivalent according to my alphabet, are as follows:

\[\text{Devánamapiya piyadasi lója hevam ahá.}\]

Here we perceive at once that the language is the same as was observed on the Bhilsa fragments,—not Sanskrit, but the vernacular modification of it, which has been so fortunately preserved for us in the Páli scriptures of Ceylon and Ava. Devánam piya (oftener piye) piyadasi lója, is precisely the Sanskrit, देवानाम पीय पियदेशी लोजा, 'the lovely rāja Devānāmapiya;' or, with equal propriety, 'the beloved of the gods king Piyadasi;' for either or both, may be the prince's name. Hevam ahá, (or rather evam ahá for the h belongs to the word lája,) I recognized at once as an old friend in the Páli version of the Buddhist couplet ye dharmma, &c. so thoroughly investigated in the Journal for March, 1835: evam áha, 'thus spake.'

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 lája should be written rágá; hevam, evam; and ahá, áha. 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 látts, 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:
Application of the Sanchi alphabet

Devdnam-piya Piyadasi rájá evam áha.

Thus the anomalous use of the l, the value of the vowel e, and the identity of the language with the grammatical Páli, were explained and confirmed. Other variations equally useful were extracted:—thus in another part of the Girmar text the name was found in the instrumental case, Devánampiyena Piyadasina; ‘by Devánam-piya, the beloved.’ Sometimes the name is contracted as at the conclusion of the Delhi text, ‘ eta devánampiya áha’ (for etam), ‘the foregoing spoke the rája.’ In other places the name is Devánampiyadasi, without the second piya, and lája or rája is often omitted. But one of the most important variations occurs again in the Girmar text; Devánam piya piya dasi rája yasovakiti, where yasovákiti, for yasa uvācha iti, ‘I on this spake he,’ (or vakti, speaks) is substituted for the ordinary form, evam áha.

Collecting together the above evidence, I think it will be admitted that the initial sentence is satisfactorily determined, and that it has every appearance of being the declaratory formula of some royal edict, or some profession of faith. The simplicity of the form reminds us of the common expression in our own Scriptures—‘Thus spake the prophet;’ or in the proclamation of the Persian monarch—‘Thus saith Cyrus, king of Persia.’ There is none of that redundant and fulsome hyperbole which we find in the Sanskrit grants and edicts of later days.

I should have been inclined to expect from the extensive distribution of the document over districts, never, as far as we know, governed by a single Indian monarch, that it rather contained the doctrines of some great reformer, such as Shākya, to whom the epithets devánampriya priya-darsi might be applied. But not to mention the inapplicability of the title rája to such a person, the next sentence, which is also repeated several times, sets the matter of its royal authorship at rest. This sentence follows the opening just described, on the north, south, and west tablets of the Delhi pillar in the form following:

Saßavásati vasa-abhisitena mè, which Ratna Paula immediately read as satta visati vasse abhisitena me, ‘in the twenty-seventh year

* The Pāli vāt is the Sanskrit वाच, synonymous with वच speech.

† The Rev. Mr. Stevenson’s reading was द्वारंढ्यिये पिय द्रिष्टे भाजकंद which he translated, “In the two ways (of wisdom and of works?) with all speed do I approach the resplendent receptacle of the ever-moving luminous radiance.”
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 u or sada, and once ḍ a sata, but generally ḍ u, the lower stroke seeming to imply duplication. That the ḍ should be substituted for ṭ agrees with the observation by Messrs. Burnouf and Lassen of the frequent interchange of these letters in their analysis of a Pallī manuscript, the Boromat, from Ceylon. I have also found in other parts of the inscription that the double dental ṭ is as frequently rendered by the cerebral ṭ, as by ḍ u.

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 दुवधादसा वसा अभिषितेनां मे; 'In the twelfth year of my reign.' It may be perhaps objected that duvāḍasa is a very corrupt mode of writing dvāḍasa, 'twelve:' the separation into two syllables of dvā 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 Kirror we find the dental ṭ restored; and the undue collision of the two short a's grammatically corrected, thus:

\[
\begin{align*}
\text{दुवधादसा वसा अभिषितेनांमे,}
\end{align*}
\]

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)—

\[
\begin{align*}
\text{द्वादसवासाभिषेतया द्वनाम दया पिया ठिसा.}
\end{align*}
\]

This is on other accounts a most important variation, because it shews the value of the abbreviated pronoun मे (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 अभिषितेनांमे,—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, Deveni-patissa, 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 Anúráadhapúra 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 viháre and dágoba called Toóhpaaraamaya, in which the jaw relic was deposited; sixty-eight rock temples with thirty-two priest’s chambers on Mihintallai; the Mahá viháre, the Issaramúni viháre, the Saita chaitya dágoba, and the Issa-ramaaya dágoba and viháre; and formed the Issa-vēça 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-
ments and rock excavations attributed to the ancient sovereigns of Ceylon abound with inscriptions in a character not essentially differing from these four on the continent of India. We have thus a strong primâ facie argument in favor of the hypothesis that Devânampiya'tissa, the royal convert, caused, in his zeal, the dogmas of his newly adopted faith to be promulgated far and wide at his expense. It is true that, according to the Mahàvansi, the Buddhist doctrines were not reduced to writing (i.e. in books) in Ceylon until 217 years, 10 months and 10 days after its oral promulgation by Mihindâ, Asoka's brother, in the year above fixed,—or "while Valagamabahu, the 21st sovereign of the Vijaya line, was still a disguised fugitive;" that is, about the year 90 B.C.; but this fact tells rather in favor of other modes being previously used to make known, and to record irrevocably the new rules of conduct; and we might easily cite a more ancient and venerable example of thus fixing the law on tablets of stone. But I have not yet shewn that such is the nature of our inscription:—as yet, we are ignorant what happened in the twelfth and the twenty-seventh year of king Devânampiyadisa's receiving the holy unction, abhmisheka. To ascertain this, we must continue our analysis one step further. On the south, east, and west sides of the Delhi column, as well as in the body of the text, the text left unfinished above is thus concluded: • J. D. 8 J u J u J u J i yam dhammalipi likhâ-pitâ, which may be exactly translated, 'This dharma-lipi, or writing of the law, is caused to be written.' All doubt as to the nature of the document is thus removed, and we have the fullest confirmation of the theory just broached. The variations of the reading are few—H J. aym is more correctly put for iyam in the Girnar version (lipi being neuter in Pāli, though feminine in Sanskrit):—and in the following sentence which winds up the Delhi inscription, we have dhammalibi twice used for dhammalipi, exactly the license allowed in Sanskrit, धम्मलिपि and धम्मलिपि being synonymous: these seemingly trivial variations are of great force in establishing the value of the letters interchanged:

Iya dhammalibi likhâ-pitâti eta Devânampiya áhá: 'Iyam dhammalibi ata atha silatabhâniva siladhakaniva tata kataviya eva esa chithiti siya.' Which seems to imply, though the precise meaning is not yet well made out: 'Having caused to be engraven this dharma-lipi, Devânampiya thus declared: 'This dharma-lipi, in like manner as it is now fixed upon enduring rock, so may all continue for ever in the performance of it.' Silasthāpan, if long, would mean the establishment of Buddha's doctrines. Chila thiti siya, is evidently the Sanskrit chiran sthiti siyāt.
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—not 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 Nipal 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 Rampanthis, 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 Shákyá 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-nagarí, but of the Canouj, the Pált, 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, ङ chh is the double of ङ ch; थ th is the double of थ t; ध dh, is the half of this; and ध th, is the same character with a dot as a distinguishing mark: (this may account for the constant interchange of the थ, ङ, थ, and ङ, in
the inscriptions.) Again; \( \text{j} \) dh, is only the letter \( \text{j} \) produced from below—if doubled it would have been confounded with another letter, (the \( \text{j} \) .) The aspirated \( \text{p} \) \( \text{b} \), is merely the \( \text{u} \) \( \text{p} \), 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 \( \text{kh} \) seems formed from the \( \text{g} \) rather than the \( \text{k} \) :—the \( \text{gh} \) and \( \text{jh} \) are missing as in Tibetan, and appear to be supplied by \( \text{g} \) and \( \text{chh} \) respectively. \( \text{bh} \) is anomalous, or it has been formed from the \( \text{d} \) by adding a downward stroke.

Again; there is a remarkable analogy of form in the semivowels \( \text{r} \), \( \text{r} \), \( \text{l} \), \( \text{y} \), \( \text{j} \), \( \text{j} \), \( \text{j} \), which tends to prove their having been framed on a consistent principle:—the first \( \text{r} \) hardly ever occurs in the Delhi inscription, but it is common in that from Girnar. The \( \text{h} \) \( \text{j} \), is but the \( \text{j} \) reversed: the \( \text{r} \) so peculiar to the Sanskrit alphabet is formed by adding the vowel \( \text{i} \) to the \( \text{r} \) thus, \( \text{r} \).

As far as is yet known, there are only one \( \text{n} \), and one \( \text{s} \) : the nasals and sibilants had not therefore been yet separated into classes; for the written Pāli of 200 years later possesses at least the various \( \text{n} \)'s, though it has but one \( \text{s} \).

The four vowels, initials, have been discovered \( \text{H} \); \( \text{D} \), \( \text{L} \); \( \text{a} \), \( \text{i} \), \( \text{e} \), \( \text{u} \). 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 Nāgarī was long since pointed out. The two long vowels \( \text{i} \) and \( \text{u} \), are produced by doubling the short symbols. The visarga is of doubtful occurrence, but the anuswara is constantly employed; and when before \( \text{m} \), as in \( \text{D} \) \( \text{U} \), dhamma, it is equivalent to the duplication employed in the more modern Pāli writing. The following, then, is our alphabet, arranged in the ordinary manner.

- **Gutturals.** \( \text{G} \) \( \text{j} \) \( \text{l} \) \( \text{m} \) \( \text{n} \) \( \text{ng} \) \( \text{k} \) \( \text{x} \) \( \text{m} \) \( \text{p} \) \( \text{th} \) \( \text{dh} \) \( \text{n} \)
- **Palatials.** \( \text{y} \) \( \text{h} \) \( \text{j} \) \( \text{ny} \) \( \text{gh} \) \( \text{gh} \) \( \text{ng} \) \( \text{ch} \) \( \text{ch} \) \( \text{chh} \) \( \text{jh} \) \( \text{ny} \)
- **Cerebrals.** \( \text{C} \) \( \text{O} \) \( \text{t} \) \( \text{th} \) \( \text{dh} \) \( \text{n} \)
- **Dentals.** \( \text{b} \) \( \text{l} \) \( \text{D} \) \( \text{b} \) \( \text{d} \) \( \text{h} \) \( \text{n} \)
- **Labials.** \( \text{p} \) \( \text{ph} \) \( \text{bh} \) \( \text{m} \)
- **Semivowels, &c.** \( \text{H} \) \( \text{i} \) \( \text{e} \) \( \text{u} \) \( \text{r} \)
- **Vowels.** \( \text{H} \) : \( \text{A} \) \( \text{E} \) \( \text{i} \) \( \text{e} \) \( \text{u} \) \( \text{r} \)

* I think the Girnar and Ceylon inscriptions will be found to have the other nasals made by modification of the primary \( \text{D} \). There are other letters in these texts not found in the lātes 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 $z$ $\mathfrak{Z}$, a sound unknown to the Sanskrit, is made by inverting the $j$ $\mathfrak{F}$; the cerebral $n$ $\mathfrak{N}$, by inverting the dental $h$ $\mathfrak{H}$:—and the cerebral $t$, $\mathfrak{t}$, or $\mathfrak{C}$, $\mathfrak{B}$, by inversion of the dental $t$, $\mathfrak{t}$, $\mathfrak{N}$, $\mathfrak{A}$.

The analogy between the $<$ and $\lambda$ is not so great in this alphabet as in what we have imagined to be its successor, in which the essential part of the $t$, ($\mathfrak{I}$) is the $<$ placed downwards, $\mathfrak{C}$. In the same manner the connection of the labials, $p$ and $b$, is more visible in the old Ceylonese, the Canoují, and even the Tibetan alphabets; the $b$ $\mathfrak{B}$, being merely the $p$ $\mathfrak{P}$, closed at the top: and in square Pali $\mathfrak{L}$ and $\mathfrak{D}$.

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 $+$, $\mathfrak{d}$, $<$, $\mathfrak{l}$, $\mathfrak{l}$, $\mathfrak{u}$, $\mathfrak{b}$, $\mathfrak{d}$, $\mathfrak{g}$ and $\mathfrak{r}$; besides the vowels $\mathfrak{H}$, $\mathfrak{D}$, $\mathfrak{L}$. 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 Diodorus; and Diodorus 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 versa.

† 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 Koonr, 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 Koonr*; 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 Koonr’s fort; and if it should be observed that our traveller’s curiosity is thus excited, he will be told that Mata Koonr 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.

* Mrīta Kumāra, the dead Kumāra (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 Koôr* 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 Koôr* 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 Koôr* 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 Koôr*, 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 Kooőr 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 aerial 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 Kooőr 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 lát in the same district described by Mr. Hodgson in the Journal of the Asiatic Society, vol. III. page 482. The name of that lát situated between the town of Bettiaék and the Gandak is Mathia, evidently the patronymic of Mata or Matha; Kooőr, 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, kúńwa. 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.]

3 q 2
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 Rámanandi stock, and is always included amongst the Vishnava schisms: its founder is said to have been a pupil of one of the Kabirpanthis: and to be the fifth in descent from Rámánand; viz. 1, Kabir; 2, Kamál; 3, Jamál; 4, Bimal; 5, Buddhán; 6, Dadú. 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.

"Dadú 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 Akbar's reign, or in the beginning of that of Jehangir. The followers of Dadú 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 Virakias, 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-
dhuris, who follow the occupations of ordinary life. A farther sub-
division 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 de-
voured 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 Márwár and
Ajmer: of the Nága class alone the raja of Jóypur is reported to
entertain as soldiers more than 10,000. The chief place of worship
is at Naraina, where the bed of Dádu, 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 Phálgun,
(February-March,) at Naraina. The tenets of the sect are contained
in several Bháshá works, in which it is said a vast number of passages
from the Kabír 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 Kabír and are frequent
visitors at the Chaura, (at Benares.)"

Word segmentation and corrections:
द्राकु विद्मश्रीमुखाणाओऽन्हीं ज्ञातीर्जण्याशुरः। अति सहान्तमयसुः ज्ञातुर्तेवनीचारः। पुरुषश्रापासरसीमृत्तुः। अन्नर्तश्रीरितमाङ्गमासिंक भनिरङ्गारांम्। ११।

पुरिक्वप्यारापमित्रां नांदीप्रीति ग्रामाः। सवजनातीवारे देवेकोणिश्चियाः। १२।

द्राकु विनामांसैं संवर्षणवज्ञानी। द्राकु रमारकालिबुल विनामज्ञानाः। १३।

द्राकु विनामांबिनुं कः न पर्यन्त विनामज्ञावकीयाः। संवर्षणांसैं विनामांवज्ञानाः। १४।

द्राकु ज्ञानपद्धारायाश्रीः जदुज्ञातिसिद्धीर। जटरमिन्नदेशारायायोऽमकायेश्च। १५।

श्रीसंदेशसें संवर्षणी विकाराणायकवर। श्रीरामकृतमांगांश्रीमुखाणवन्दी। १६।

मायंदे कु भोजपशातारी कै वेचन न पर्याशं। स्मितुर्वर्थायाय भातको कारणान्यायमानी।

तं सर्वसंवर्षणांविकर रामान्यायायी। श्रीरामकुशांमेरी द्राकु विनामदेशी। १७।

द्राकु धातुत्वायमहक्षमेश्च सतिनवत्तीवायी। गवर्मनसरायायण्या वाष्पीयोऽवेयी।

शीर्षदेशरास्मात्तालित सनातनविवेंद्रा। १८।

द्राकु रामायणायांविकक वेदायीवेयश। सुरिकुपरायायांविशेषसदृशाः सभान्यायाः। १९।

द्राकु कृत्तिवर्षणांविशेषाः देवायीवेयश। २०।

द्राकु कृत्तिवर्षणांविशेषाः देवायीवेयश। २१।

द्राकु विनामश्रीमुखाणायाः कौण्ठमृण्वारिः। सक्षालोकचिरिषाणीयाः वैकारिकायाः च।

नीति। २२।

द्राकु विनामश्रीमुखाणायाः कौण्ठमृण्वारिः। सक्षालोकचिरिषाणीयाः वैकारिकायाः च।

नीति। २२।

द्राकु कृत्तिवर्षणांविशेषाः देवायीवेयश। २३।

द्राकु कृत्तिवर्षणांविशेषाः देवायीवेयश। २४।
from the Granthas of the Dadupanthis Sect.
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 Rahim. 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 symphisis 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 Hoshingabád) in the valley of the Nerudda 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.

65 inches

fig. 2.

fig. 3

50 inches

fig. 4.

fig. 5

fig. 6

16 in.

31 in.

23 in.
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. Cauley 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 legerdemain 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 painlessly 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!

**Grallatortes.**

**Scolopacidae.**

Genus Scolopax, Auctorum.  
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 ½: wings about 1 ¼ inch less than the tail: 1st quill longest: tertials about 1 inch less. Tarsus 1 ¼; central toe 1 ½, hind ½†. 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 Raptore, 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 Boetian 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.

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 Rhynchaenus, 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 ¾ 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, posteally, 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, whereas the 10 laterals are hardened and narrow: 12½ inches long by 20 in expanse: bill 2½: tail 3½: tarsus 1½: central toe 1½: hind 1½: weight 6½ 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 posteal 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 conframiliars. 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\(\frac{1}{2}\).

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\(\frac{1}{2}\): tail 2\(\frac{1}{3}\):
tarsus 1\(\frac{1}{2}\): central toe 1\(\frac{1}{4}\), hind 1\(\frac{1}{2}\).

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 dif-
fferences 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 conspicu-
ously longer than those of Biclavus. In characterising these four
species of Gallinago, I have chosen purposely to rely on size, propor-
tions, 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 Nemori-
cola 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\(\frac{1}{2}\) 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.
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 Cauley, seconded by the Secretary, at the last meeting, was elected a Member.

The Baron Schilling, of Cronsstadt, was, upon the favorable report of the Committee of Papers, elected an Honorary Member.

Kustamji Cowasji, was proposed by Baboo Rám 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, &e. &e. &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 recall 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 expense, 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 Reserches 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 expenses 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.

Liturgical 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 multiplication 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.
Proceedings of the Asiatic Society.

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 want 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 although his Lordship in Council concurs with you in thinking that such institutions in Europe, however perfect, do not supersede 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, j
26th 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 he 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. Curnyn, J. Bignell, J. Bell, Baboos Phassonnocomar 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.

Fort William, June 6th, 1837.

(Signed) R. D. Mangles,
Secy. to the Govt. of Bengal.

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 Dadora Panduring and Nana Narayun—by the Author, through Mr. W. H. Wathen, Chief Sec. Bombay Government.


Eusebii Pamphili Caesariensis Episcopi Chronicon Bipartium, Armenian and Latin with Greek fragments, Venice, 1818, 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 Juanpore in Persian, lent for the purpose of being copied. Also, the Tonfeh-Tazeel, or history of the present Raja'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 Brahuikey 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 ñat alphabet and inscriptions.

Mr. Stevenson has made known and lithographed his alphabet, and a portion of the ñat 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 ñat 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 Mârwar 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 ñat 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 Sutgra, 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 (ferrugenous) 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 farther 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 Sunwardran tract formed anterior to the deposit of the 350 feet of superincumbent sand and clays. The wood is highly charcoal, 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 Pulmiras.

Major Davidson, Esq., 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 pairs; 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 semicircular crest. It is the spinous processes of the dorsal verti bre 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 oscilant 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 Gavæaus of books, no soul can tell; for the sufficient reason that there is no adequate or admissible account of either of the latter in books. Some call these creatures bulls; others call them Bioses:—what they really be, we know not; and therefore I shall give my type a separate specific name or Subhemachatus."

"The Gauri Gau, then, of the saul forest is Bibos Subhemachatus, nbo., 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 Brinham Ghat, discovered by Mr. Smith.

Also fossil shells of reversed whorls silicified, from Sao Kharn Ghat, ten kos west of Buitool, similar exactly to those noticed by Dr. Vovsey in the Gwadgiri trap.
VIII.—Meteorological Register.

<table>
<thead>
<tr>
<th>Date</th>
<th>Weather</th>
<th>Morning</th>
<th>Wind.</th>
<th>Thermo.</th>
<th>Depression</th>
<th>Height</th>
<th>Barometer</th>
<th>Temp. at 4 p.m.</th>
<th>Pressure</th>
<th>Current</th>
<th>Heat in avg.</th>
<th>Dew-point</th>
<th>Wet-bulb</th>
<th>Thermometer Rise in</th>
<th>Depression of</th>
<th>Registered temperature</th>
<th>max.</th>
<th>min.</th>
<th>Dr. Port.</th>
<th>Dr. North.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>cloudy</td>
<td>10.</td>
<td>S. W.</td>
<td>10.</td>
<td>—</td>
<td>35</td>
<td>29.02</td>
<td>55.6</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>—</td>
<td>35</td>
<td>—</td>
<td>35</td>
<td>35</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>11.</td>
<td>cloudy</td>
<td>10.</td>
<td>S. W.</td>
<td>10.</td>
<td>—</td>
<td>35</td>
<td>29.02</td>
<td>55.6</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>—</td>
<td>35</td>
<td>—</td>
<td>35</td>
<td>35</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>12.</td>
<td>cloudy</td>
<td>10.</td>
<td>S. W.</td>
<td>10.</td>
<td>—</td>
<td>35</td>
<td>29.02</td>
<td>55.6</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>—</td>
<td>35</td>
<td>—</td>
<td>35</td>
<td>35</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>13.</td>
<td>cloudy</td>
<td>10.</td>
<td>S. W.</td>
<td>10.</td>
<td>—</td>
<td>35</td>
<td>29.02</td>
<td>55.6</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>72.4</td>
<td>—</td>
<td>35</td>
<td>—</td>
<td>35</td>
<td>35</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Finding so great a discrepancy in the tension shown by the half hygrometer I have recomposed the hundredth degree or extreme moisture and find it to reach 102.5 which will

account for the correction of the tension to the amount of about 1 per cent. Being a new hair, it had not become properly strectched when first wet up;—J. P.