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I.

HISTORICAL REMARKS
ON THE
COAST OF MALABAR,
WITH SOME DESCRIPTION OF THE MANNERS OF ITS INHABITANTS.

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SECTION

I. IN the book called Kerul Oodputtee, or "the emerging of the country of Kerul," (of which, during my stay at Calicut in the year 1793, I made the best translation into English in my power; through the medium of a version first rendered into Persian, under my own inspection, from the Mala-
barick copy procured from one of the Rajahs of the Zamorin's family;) the origin of that coast is ascribed to the piety or penitence of Puresu Rama, or Puresram (one of the incarnations of Vishnu,) who, stung with re-
morfe for the blood he had so profusely shed in overcoming the Rajahs of the Kbetry tribe, applied to Varuna, the god of the ocean, to supply him with a tract of ground to bestow on the Brabmens; and Varuna having accor-
dingly withdrawn his waters from the Gwern, (a hill in the vicinity of Mangalore) to Cape Comorin, this strip of territory has from its situation, as lying along the foot of the Sukhein (by Europeans called the Ghaut) range of mountains, acquired the name of Mulyalum (i.e. skirting, or at the bottom of the hills), a term that may have been shortened into Maleyam or
Maleam; whence are also probably its common names of Mallelevar, and Malabar; all which Pureesram is firmly believed by its native Hindu inhabitants to have parcelled out among different tribes of Brâhmens, and to have directed that the entire produce of the soil should be appropriated to their maintenance, and towards the edification of temples, and for the support of divine worship; whence it still continues to be distinguished in their writings by the term of Kermboomy, or the land of good works, for the expiation of sin.

II. The country thus obtained from the sea* is represented to have remained long in a marshy and scarcely habitable state; in so much, that the first occupants, whom Pureesram is said to have brought into it from the eastern and even the northern part of India, again abandoned it, being more especially scared by the multitude of serpents with which the mud and slime of this newly emerged tract is related to have then abounded; and to which numerous accidents are ascribed; until Pureesram taught the inhabitants to propitiate these animals by introducing the worship of them, and of their images, which became from that period objects of adoration.

III. The country of Mahyalim was according to the Keral Oodputtes afterwaords divided into the four following Tookrees or divisions:

1st. From the Gowkern, already mentioned, to the Perumbura river, was called the Tooroo or Turu Ranje.

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* In a manuscript account of Malabar that I have seen, and which is ascribed to a bishop of Vironpili, (the seat of a famous Roman Catholic seminary near Cochin) he observes, that by the accounts of the learned natives of that coast it is little more than two thousand three hundred years since the sea came up to the feet of the Stabim, or Ghaut mountains; and that it once did so he thinks extremely probable, from the nature of the soil, and the quantity of sand, oyster-shells, and other fragments met with in making deep excavations.
2d. From the Perumbura to Poodumputtun, was called the Moshak Rauje.

3d. From Poodum or Poodputtun, to the limits of Kuney, was called the Kerul or Keril Rauje; and as the principal seat of the antient government was fixed in this middle division of Malabar; its name prevailed over, and was in course of time understood in a general sense to comprehend the three others.

4th. From Kuney to Kunea Koomary or Cape Comorin, was called the Koop Rauje, and these four grand divisions were parcelled out into a greater number of Naadbhs, (pronounced Naarts, and meaning districts or countires) and of Kbands, or subdivisions under the latter denomination.

IV. The proportion of the produce of their lands that the Brāhbmens are stated to have originally assigned for the support of government amounted to only one sixth share; but in the same book of Kerul Oodputte they are afterwards said to have divided the country into three equal proportions; one of which was consecrated to supply the expence attending religious worship; another to the support of government; and the third for their own maintenance.

V. However this may be, according to the book above quoted, the Brāhbmens appear to have first set up, and for some time maintained a sort of republican or aristocratical government, under two or three principal chiefs, elected to administer the government; which was thus carried on (attended however with several intermediate modifications) till, on jealousies arising among themselves, the great body of the Brāhbmen landholders had recourse to foreign assistance; which terminated, either by conquest or convention, in their receiving, to rule over them, a Permolt, or chief governor, from the prince of the neighbouring country of Chaldesh, (a part of the southern
Carnatick) and this succession of viceroys was regularly changed and relieved every twelve years; till at length one of those officers, named Sheo Ram, or, (according to the Malabar books) Shermanoo Permaloo, and by others called Cheruma Perumal, appears to have rendered himself so popular during his government, that (as seems the most probable deduction from the obscure accounts of this transaction in the copy I obtained of the Kerul Oodputtee, compared with other authorities) at the expiration of its term, he was enabled by the encouragement of those, over whom his delegated sway had extended, to confirm his own authority, and to set at defiance that of his late sovereign the Prince or King of Chaldeh; who is known in their books by the name of Rajah Kishen Rao; and who having sent an army into Malabar, with a view to recover his authority, is stated to have been successfully withstood by Shermanoo and the Malabarians; an event which is supposed to have happened about a thousand years anterior to the present period, and is otherwise worthy of notice, as being the epoch from which all the Rajah and chief Nayrs and the other titled and principal lords and landlords of Malabar date their ancestors acquisition of sovereignty and rule in that country; all which the greater part of their present representatives do uniformly assert to have been derived from the grants thus made by Shermanoo Permaloo; who becoming, after the defeat of Kishen Rao's army, either tired of his situation, or from having (as is the vulgar belief) become a convert to Mahomedanism, and being thence desirous to visit Arabia, is reported to have made before his departure a general division of Malabar among his dependants, the ancestors of its present chieftains.

The book entitled Kerul Oodputtee (which however locally respected, is, at least in the copy I procured of it, not a little confused and incoherent)
of the several castes in Malabar, and their distinctions, I received the following summary account from the Rajah of Carnatic.

1st. Namboor Brāhman; 2d. Nayar, each of various denominations; 3d. Tīrī; 4th. Malere; 5th. Polere; (called he says Dīre in Hindostan.) The Tīrīs are cultivators of the ground, but free men. The Malere are musicians and conjurors, and also free men. The Poleres or Polcar, are bondsmen attached to the soil in the lower part of Malabar, in like manner as are the Paniers above the Ghauts. The proper name of the Ghaut hills is, the Rajah adds, Sukheen Purkut, or hills of Sukheen, with the guttural kh pronounced.

N. B. Pouliats and Poulichis, mentioned by Raynal, are only the one the male, and the other the female of Polere aforesaid.

The system of observations in regard to distances, to be observed by the several castes in Malabar, are (according to the Rajah of Carnatic's explanation) as under specified.

1st. A Nayar may approach, but must not touch, a Namboor Brāhman.
   A Tīrī is to remain thirty-fix steps off from one.
   A Malere three or four steps farther.
   A Polere ninety-fix steps.

2d. A Tīrī is to remain twelve steps distant from a Nayar.
   A Malere three or four steps farther.
   A Polere ninety-fix steps.

3d. A Malere may approach, but is not to touch the Tīrī.

4th. A Polere is not to come near even to a Malere, or any other caste, but a Mapilla; the name given to the Mahomedans, who are natives of Malabar.

Is a Polere wishes to speak to a Brāhman, or Nayar, or Tīrī, or Malere, he must stand at the above prescribed distance and cry aloud to them.

Is a Polere touch a Brāhman, the latter must make expiation by immediately bathing and reading much of the divine books, and changing his Brāhmanical thread.

Is a Polere touch a Nayar he has only to bathe, and so of the other castes.
VII. It is the received tradition among the Malabars, that Shermanoo Permalloo was, just at the completion of the distribution of the Malabar country, applied to for some provision by an Erody, or person of the cow-herd cast; who, with his brother had, during the preceding warfare, came from their native town of Poondia (on the banks of the Cavery near Erode), to his assistance, and had proved the principal cause of his success against Rajah Kishen Rao’s army; upon which Shermanoo, having little or nothing else left, made a grant to him of the very narrow limits of his own place of abode at Calicut; and having further bestowed on him his own sword, and ankle-chainlet, and other insignia of dignity, and presented him with water and flowers, (which appears to have been uniformly the ancient symbols of donation and transfer of property in this part of India;) he authorized and instructed him to extend his own dominions by arms, over as much of the country as he should find desirable; a discretion, which this adventurer (who is the ancestor of the present Samaory or Zamorin) immediately began to act upon, and to endeavour to carry its object into execution, by the forcible acquisition of the districts adjoining to the present city of Calicut: and ever since his family appear to have, in the true spirit of their original grant (which is the boast and glory of its present representatives) been either meditating new conquests, or endeavouring to maintain the acquisitions they have thus achieved by Sheroo Ram or Shermanoo Permalloo’s sword; which they assert to have still preserved as a precious relic, and to have converted into an object of domestic adoration, as the instrument of all the greatness of their house.

VIII. Anterior even to this epoch of the partition of Malabar, the Nestorians had settled and planted Christianity on this coast; and with those of the Roman Catholic communion, that arrived several centuries after, in con-
sequence of Vasco de Gama's discovery, they continue to constitute to this day a considerable body of the lower orders of the present society in Travancore and Cochin; in which last district there live also the most considerable, or rather perhaps, the only colony of Jews in India.

IX. Of the events that took place from the partition, till the above-mentioned discovery of Malabar by the Portuguese in 1496, I am not possessed of adequate materials to afford any full or sufficiently satisfactory detail; but the principal may, as far as relates to its interior administration, be probably comprised in the wars carried on during this long period by the Samoories or Zamorins family for its aggrandizement, and in the consequent struggles kept up by the others, and especially the middle and southern principalities, to maintain their independence: for as to attacks from without, I have not been able to trace that they experienced any material ones during this long interval; or that the prince of Chuldeba was ever able to re-establish his dominion over this southern part of the coast, within the limits assigned by the natives to Malabar proper, or the tract by them denominated Mulyalam or Maleyam.

X. During this period, also, the Mahomedan religion made great progress in Malabar, as well from the zeal of its more early proselytes in converting the natives, as in purchasing or procuring the children of the poorer classes, and bringing them up in that faith; and these Arabian traders, bringing annually sums of money to the Malabar coast for the pepper and other spices that they carried from it for the supply of all the rest of the world, received every encouragement, and the fullest protection for their property and religion, from the successive Samoories or Zamorins; whence, they naturally grew into the habit of rendering that part of the coast the centre of
of their traffick and residence, and so rivetted had, through these long habits of intercourse, become the connection between them and the Samoory’s government, that the latter continued, after the arrival of the Portuguese, most pertinaciously to adhere to and support them against these new rivals in the gainful commerce which they had hitherto driven; a predilection that has naturally led the Rajahs of Cochin, and of other petty states, that stood always in fear of the ambition and superior powers of the Samoories, to afford to the Portuguese a kind reception in their ports, from which collisions of interests a very cruel warfare by sea and land was for many years carried on between the Samoories or Zamorins, and their subjects, Hindus and Mahommedans, aided occasionally by the Egyptians and Turks, on the one part; and the Portuguese, with the Cochin and other Rajahs, as their allies on the other; of the various successes and reverses in which, the only Asiatick relation I have met with is contained in a work, with which, during my stay in Malabar, I was obligingly favored by my then colleague, Major (now Lieutenant Col- lonel) Dow, who had traced and obtained it in the course of the extensive intercourse, that, on terms the most amicable, and in views the most salutary and benign, he had long cultivated with the Mahommedan part of the Malabar community. This book, written in the Arabick language, is said to have been composed by Zeirreddien Mukhdom, an Arab, Egyptian, or subject of the Turkish empire; who is thought to have been one of those dispatched to assist the Mahommedan Princes of India and the Zamorin against the Por- tuguese, and to have during his stay in India composed this historical account (which I have translated into English) of the warfare, in which he bore a part, preceded by (what by many will be considered as the most interesting part of his work) a description of the manners and customs of the natives of Malabar at the period of his visit to it more than two centuries ago; re- lative to both which articles I shall here insert some of the information ac-
quired by this Mahommedan author, whose relation terminates with the year 987 of the Hejira, answering to the year of our Lord 1579-80.

XI. This author begins with nearly the same account of the conversion of Shermanoo Permaloo (whose real or proper name, or rather the epithet bestowed on his station, this Mussulman mentions to have been Shukerwutty or Chuckershutty) as has been already noticed, from the Kerul Oodputtee, with this addition, that it was effected by a company of Dervises from Arabia, who touching at Crungloor, or Cranganore (then the seat of government in Malabar) on their voyage to visit the footstep of Adam* on that mountain, in Ceylon, which mariners distinguish by the name of Adam's Peak; and these pilgrims imparting on that occasion to the Permaloo, or Permaloo, the then recent miracle of Mahommed's having divided the moon; the viceroy was so affected by this instance of supernatural power, and so captivated by the fervid representations of these enthusiasts, that he determined to abandon all for the sake of proceeding with them into Arabia, to have an opportunity of conversing with the prophet, who was still alive, and had not even then fled from Mecca; for, after sojourning some time with the prophet in Arabia, Chuckershutty (whom Mahommed had dignified with the title of Sultaun Taujeul Herid) is mentioned in Zairreddijen's

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* This footstep of Adam is under the name of SreePud, or the "holy foot", equally reverenced and referred to by the Hindus, as appears by the relation of a journey made to visit it by a fakir of this last mentioned persuasion, called Prayn Poorti, now living at Benares, who has also travelled as far north as to Moscow; and has from memory (since he is disabled from writing by being of the tribe of Oarda-babu, or whose arms and hands remain constantly in a fixed position above their heads) afforded me an opportunity of causing to be committed to writing an interesting account of his various travels throughout India, as well as into other parts of Asia; and on the subject of these Hindu fakirs' propensity to traveling I may here add that I saw a few months ago, at Benares, one of them who had traveled as far as Pekin, which he described under the name of Pechin; and had pacts from the Chinese government in his possession. He mentioned the name of a temple of Hindu adoration as being situated in Pekin.
book to have died on his return, on the first day of the first year of the Hejira, answering to the 16th of July, of the year of our Lord 622, after however addressing recommendatory letters to the chiefs in Malabar in favor of sundry of his Mussulman brethren, who were thereby enabled to construct the first mosque or temple of their new faith in that country as early as the twenty-first year of the Hejira, or A. D. 642.

XII. But although Zeirreddien, the author I am now quoting, deemed it fit to allow a place in his work to the traditions that he found thus locally to obtain, he fairly avows his own disbelief in them; more especially as to what relates to the supposed conversion of Shermanoo Permaloo *, and his journey to visit the prophet in Arabia; subjoining also his own opinion that the Mussulman religion did not acquire any footing either permanent or extensive in Malabar, till towards the latter end of the second century of the Mahommedan era.

XIII. Zeirreddien next enters into some description of the existing manners of the Malabarians as he found them; after premising, that the Malabar country was then divided into a number of more or less extensive independencies, in which there were chieftains commanding from one to two and three hundred, and up to a thousand and to five and ten and thirty thousand, and even (which is perhaps an undue amplification) to a lack of men and upwards; and describing that in some of these countries there were at the same time two Hakems, or rulers; in others three, and in some even more;

* From this improbability, joined to the unlikely accounts delivered by the Hindus themselves, as to the departure of their chief governor; it may not perhaps be deemed too uncharitable to suspect, that Shermanoo disappeared like Romulus in a storm; as being perhaps found inconvenient to the new situation of independence, that the Malabar-princes admit to have, on this occasion, either assumed or been promoted to.
having distinct bodies of men attached to them respectively; whence hatred and warfare were, he observes, sometimes generated between them; which never however terminated in any entire separation between the parties; and adding that, at that time, the three greatest powers were the Colofrian Rajah to the north, the Samoory or Zamorin in the centre; and farther south, a Prince who ruled from the town of Kohum or Coulim to Cape Comorin, comprehending the states now held by the Rajah of Travancore.

XIV. The author next proceeds to an enumeration of what he considered as the chief peculiarities in the manners of the Malabarians; from which I shall literally transcribe into the body of this narrative the following particulars from the translation of Zeirreddien’s original work; subjoining in notes such particulars as my own enquiries, or other information, may tend to corroborate, define, or illustrate, in respect to some of the circumstances he has related.

1st. “If their ruler be slain in war his army become quite desperate; and will so violently attack and press upon their said deceased ruler’s enemy, and upon the troops of the latter; and so obstinately persevere in forcing their way into his country, and to ruin it; that, either they will completely in this way effect their revenge or continue their efforts till none of them survive; and therefore the killing of a ruler is greatly dreaded, and never commanded; and this is a very antient custom of theirs, which, in modern times, has however fallen, with the majority, into disuetude.”

2d. “The rulers of Malabar are of two classes or parties, one of which acts in support of the Samoory Rajah, whilst the other party acts in con-
cert with the Hakim of Cochín, which is the general system: and only
deviated from occasionally from particular causes; but as soon as these
cease to operate, the party naturally returns again to the antient usage.
These leaders are never guilty of backwardness or failure in war, but will
fix a day to fight on and punctually adhere thereto, nor will they commit
treachery in the conduct of it."

3d. "On the death of any principal or superior person among them,
such as father, mother, and elder brother, in the cast of Brähmens, (whilst
among carpenters, and the lower casts, the superiors and principal persons
are the mother, and mother's brother; or one's own elder brother, as
among the Nayrs,) when any one dies of the description of a superior as
abovementioned, his surviving relative is to remain apart for a twelve
month; during which time he is not to cohabit with his wife, or to eat
the flesh of animals, or to chew the beetle-leaf, or cut the hair of his
head, or his nails; nor can any deviation be admitted from this practice,
which is reckoned for the good of the defunct."

4th. "It is certain that among the body of Nayrs and their relatives,
the right of succession and inheritance vests in the brother of the mother,
or goes otherwise to the sister's son, or to some of the maternal relations;
for the son is not to obtain the property, country, or succession of the
father; which custom hath for a long time prevailed; and, I (the author)
say that among the Moslems of Cannanore, they do not bequeath or give
their heritage to their sons, which is also the rule with the inhabitants
in that vicinity; notwithstanding that these said persons, who do thus
exclude their sons, be well read in the Koran, and have imbibed its pre-
THE COAST OF MALABAR.

"cepts, and are men of study and piety*. However among the Brahmens, goldsmiths, carpenters, and ironsmiths, and Teers or lower orders of husbandmen and fishermen, &c. the son does succeed to the rights and property of the father, and marriage is practised among these castes."

5th. "But the Nayrs practise not marriage, except as far as may be implied from their tying a thread round the neck of the women, at the first occasion, wherefore the acts and practical maxims of this sect are suited to their condition, and they look upon the existence or non-existence of the matrimonial contract as equally indifferent."

6th. "Among the Brahmens, where there are more brothers than one, only their elder or the oldest of all of them will marry, provided he have had or be likely to have male issue; but these brothers who thus maintain celibacy do nevertheless cohabit with Nayr women, without marriage, in the way of the Nayrs; and if through such intercourse a son should be born, they will not make such child their heir, but when it becomes known that the elder married brother (in a family of Brahmens) will not have a son, then another of the brothers enters into the state of matrimony."

7th. "Among the Nayrs, it is the custom for one Nayr woman to have attached to her two males, or four, or perhaps more; and among these

* I have however reason to believe that this rule and custom is now wearing out among the Mapillas or Malabar Mahomedans; continuing however to be still more particularly observed at Cannanore and Tellicherry; but even in this last mentioned place, I was informed by Kariat Moosa, a principal merchant of this sect, that it is evaded, by fathers dividing among their sons much of their property during their life time.

† This description ought, I believe, to be understood of the Nayrs inhabiting the more southern parts of Malabar from the Tovocherie, or Cotta river, to Cape Comorin; for to the northward of the said
a distribution of time is made so as to afford to each one night, in like manner as a similar distribution of time is made among the true believers of Malabar for cohabiting with their wives; and it but rarely happens that enmity and jealousy break out among them on this account.

8th. "The lower castes, such as carpenters, ironsmiths, and others, have fallen into the imitation of their superiors, the Nayrs, with this difference however, that the joint-concern in a female is among these last limited to the brethren and male relations by blood; to the end, that no alienation may take place in the course of the succession and the right of inheritance.

9th. "Among the Nayrs, the whole body is kept uncovered, except a little about the middle. They make no difference in male or female attire.

river, the Nayrs women are said to be prohibited from having more than one male connection at a time; for failure in which she is liable to chastisement, without however incurring loss of caste, unless the paramour be of a lower tribe than her own.

* * *

"Alone in lewdness, riotous and free, 
No spousal rights withheld, and no degree,
In unendeared embraces free they blend; 
Yet but the husband's kindred may ascend 
The nuptial couch; Alas! too briefly they know, 
Nor jealousy's furor, nor burning woe; 
The bitter drops which oft from dear affection flow.

Mickle's Camoes: Book VII.

This custom prevails among the five low castes of Teer, of Agaree or Carpenters, Musahie or Brass-founders, Tassie or Goldsmiths, and Kallon Peruncellen or Blacksmiths; who live promiscuously with one or more women; and sometimes two, three, four or more brothers cohabit with one woman. The child or children who are the offspring of this connection inherit the property of the whole fraternity; and whenever the female of the house is engaged with either of the brethren, his knife is said to be hung up at the door of the apartment, as a signal of its being occupied. It is however but justice to add, that this custom is said to be local, and practised only in a few of the southern districts; and even among these five castes, there is no prohibition against any man's keeping for himself either one or as many women as he can maintain.
and among their kings and lords, none of them think of shrouding their women from the sight of all mankind; though among the Brāhmens this modestly and decorum are attended to."

10th. "Among the Nayar, they dress out and adorn their women with jewels and fine apparel; and bring them out into large companies to have them seen and admired by all the world."

11th. "Among the Malabars, priority in age stamps superiority and rule were the difference only of a moment; and notwithstanding that such party may be a fool, or blind, or aged, or otherwise, the rulergship devolves to the sister's children: nor has it ever been heard that any one put to death his elder with a view of sooner attaining to dominion.""

12th. "In case the line of descent and succession become extinct among them, or be in danger of becoming so, they do then bring an alien (whether an adult or minor) and him they constitute the inheritor as the substitute for a son, or for a brother, or for a sister's son; nor will any future difference be made between such adopted and a real heir; which custom is current and observed among all the infidels of Malabar; whether Rajahs or shop-keepers, from the highest to the lowest; so that the line of descent becomes not extinct."

* Thus in the Zamorin's families and in that of the Rajahs of Paulghaut, there are from fifty to a hundred or more males of the same blood; i.e. descended from females of the Rajah's family, who are all entitled to, and do accordingly rise to, the chief rule, agreeably to their seniority in point of birth, without any other right or title of Precedence.

† This is in general true; but there lately occurred an instance to the contrary, whereby the Rang or lordship of Pittuland has escheated to the company. With respect to the provision occasionally made against such extinctions of families, it is very true, that the Rajahs make it a practice in case of any impending danger of this kind, to procure some males and females (though of the latter more than of the former) to keep up the regal line.
13th. "They have moreover subjected themselves to a multitude of inconveniencies, or difficult observances; which they do nevertheless steadfastly adhere to; as for instance, they have arranged and limited the fitness of things, as respectively applicable to the higher, middle, and lower ranks; in such manner, that if a person of the higher and one of the lower happen to meet or rather to approach each other, the proper distance to be observed between them is known and defined; and if this distance be encroached upon, he of the higher cast must bathe, nor can he lawfully touch food before undergoing this purification; or, if he do, he falls from his dignity to which he cannot be raised again, nor has he any other resource than to betake himself to flight, and forsaking his abode, to proceed where his situation is unknown; and should he not thus flee, the ruler of the country is to apprehend him; and shall sell him to some mean person, should even the party incurring this disgrace be a child or a woman; or otherwise he may resort to the Moslems and profess the Islam* or else become a Jogui, or a Fringy, i.e. a Christian.

14th. "In like manner it is prohibited for those of a lower degree to dress food for a higher; and if any one partake of such a meal he must fall from his rank.

15th. "Those who are entitled to wear the Zunaar or Brâmenical thread, are superior to and more noble than all the classes of the infidels

*This is one of the reasons assigned to me by a Rajah of the Zamorin family for the number of Mogul Musilmans, being now greater in the Calicut districts than the Hindus and Nairs; namely, the nicety of their observances and facility of losing cast; which drives the parties from necessity into the pale of Islamism. The same Rajah mentioned on this occasion the custom of the Namboor Brâhmen, who thus disposed of their own women without incurring any disparagement of cast, to the Mogulls; which rule holds also good in respect to other females, as intimated in the second note, page 13, and in the sequel of Zâr-Raddîn's text.
of Malabar, and among these Zunaar wearers there are also the higher, middle and lower, of the first are the Brâhmans, who are above all others the most respectable, and these also have among themselves the same distinctions of first, second, and third degrees."

16th. "The Nayrs of Malabar follow the martial profession* and exceed both in numbers and dignity; having sundry degrees among themselves, and inferior to them in cast are the Teers, whose practice it is to climb up the cocoanut trees, and to bring down the fruit and to extract the intoxicating juice thereof called toddy; and below these Teers are the carpenters, smiths, goldsmiths, fishermen, &c. and under these again in respect of degree, are the Poleres or Poliaris (i.e. ploughmen), and those of other base casts, engaged in the manual part of husbandry, and among whom also are other subordinate degrees of distinction†.

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* Poliar, the labouring lower class, are named.
By the proud Nayrs the noble rank is claimed,
The toils of culture and of art they scorn:
The shining fauchon brandished in the right,
Their left arm wields the target in the fight.

Camões, Book VII.

These lines and especially the two last, contain a good description of a Nayr, who walks along, holding up his naked sword, with the same kind of unconcern, as travellers in other countries carry in their hands a cane, or walking staff: I have observed others of them have it fastened to their back, the hilt being fixed in their waistband and the blade rising up and glittering between the shoulders.

It must not however be inferred, that all the Nayrs betake themselves at present to the martial profession, for according to the information collected for me with much care, on the customs of that country, by the late Lieutenant Maclean (who was Malabar translator to the commissign of which I was a member) there are supposed to be thirty distinct classes of this general tribe; many of whom do now apply to the peaceable arts of husbandry, penmanship, and account, weaving, carpenter's work, pottery, oil making, and the like; though formerly they are all said to have been liable to be called upon by their respective sovereigns to perform military service.

† For a farther account of these casts, see note page 5, and second note, page 13.
17th. "If a stone light from a Polere on a woman of a superior rank on a particular night, which is marked out for this in the year, then that woman must be excluded from her rank; and although she shall not have seen the said man, nor been touched by him; yet still her lord shall make a conveyance of her by sale or she shall become a Moslem, or a Chris
"tian, or a female Jogui; and this custom is general."

18th. "In cases of fornication (or what is locally deemed the illicit in
tercourse between the sexes,) if the parties differ much in degree, the higher loses his or her rank, nor has he or she any other resource than the one abovementioned: yet if a Bráímen fornicates with a Nayr woman, he shall not thereby lose his cast; there being between those two old tribes that antiently established connection, which hath been already no-
ticed."

19th. "Such are the painful observances which they have entailed on themselves, through their own ignorance and want of knowledge, which God Almighty hath however in his mercy rendered the means of encrea-
ing the number of the faithful."

XV. Our Mabommedan author then proceeds to mention, that the towns built along the coast of Malabar owed their origin to and were principally

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* I have allowed this paragraph of Zeirredditen's text to stand inserted in the order of his own enum-
eration, because it is connected with the one that follows; though the custom it refers to seems so un-
reasonable that, as I never had occasion to hear it corroborated by the report of the natives, I cannot vouch for its being well founded.

† In the manner adverted to in the second note, page 15; and here closes, for the present, the literal extract I have made from Zeirredditen's performance, which, for distinction sake, I have marked throughout with inverted commas.
constructed by the Mahomedan traders, who, though not then amounting
to a tithe of the general population, were much courted by the several Ra-
jahs, and more especially by the Zamorin, to frequent his port of Calicut, on
account of the duty of ten per cent that was levied on their trade.

XVI. The arrival of the fleets of the Portugueses, the first under Vasco
de Gama, in the 904th year of the Hijreee (corresponding with the year of
our Lord 1498,) and of that conducted by Cabral, a few years thereafter,
with the negociations, jealousies, and wars, that ensued thereon, are next
related by our author, in a manner easily enough reconcileable to the ac-
counts of the same transactions, already published throughout Europe. He
ascribes the Europeans resorting to India to their desire to purchase pepper
and ginger; nor does he seek to conceal that between them, and the Mahom-
medan traders, a commercial jealousy immediately sprung up, which proved
the cause of all the bitter wars that were afterwards carried on by sea and
land, by the Zamorins and the Mahomedans, on the one part; and the Rajah
of Cochin, (to whose port the Portugueses had failed, on their breach with the
former prince,) and his European allies, on the other; the former being
afterwards reinforced from the Arabian gulf by a large fleet, fitted out
under the command of Ameer Hosaine, an officer in the service of
Kaunes al Ghowry, the then reigning Sultaun of Egypt; but these
armaments failed of their object, and the Ghowry Prince was soon afterwards
himself subdued by Selim, the Turkish emperor; and of the treatment,
which the Mahomedan traders continued, in the mean time, to experience

† This principally current Malabar era is stated in the account ascribed to the Bishop of Verapoli (as
already quoted in the note, page 2), to have been fixed from the building of the city of Coolum (by us
called Quilam) about twenty-four Cadams (Malabar leagues), or eighty British miles south of Cochin: it
was formerly very famous as the emporium of the coast, and founded in the 826th year of the Christian era.
from the Portuguese, the following description is literally taken from the translation of Nizameddien's treatise.

1st. "The believers of Malabar were established in the most desirable and happy manner, by reason of the inconsiderable degree of oppression experienced from the rulers, who were acquainted with the ancient customs; and were kind to, and protectors of the Mussulmans, and the subjects lived satisfied and contented; but sinned so, that God turned from them and did therefore command the Europeans of Portugal, who oppressed and distressed the Mahomedan community by the commission of unlimited enormities: such as beating, deriding them, and sinking and stranding their ships, and spitting in their faces, and on their bodies, and prohibiting them from performing voyages, particularly that to Mecca, and plundering their property and burning their countries and temples, and making prizes of their ships, and kicking and trampling on their (the believers') books, and throwing them into the flames. They also endeavoured to make converts to their own religion: and enjoined churches of their own faith, to be consecrated; tempting people for these objects with offers of money, and they dressed out their own women in the finest ornaments and apparel, in order thereby to deceive and allure the women of the believers. They did also put Hajis and other Mussulmans to a variety of cruel deaths, and they reviled and abused with unworthy epithets the Prophet of God, and confined the Mahomedans, and loaded them with heavy irons; carrying them about for sale from shop to shop as slaves; enhancing their ill usage on these occasions in order to extort the larger sum for their release. They confined them also in dark noisome and hideous dungeons, and used to beat them with slippers, torturing them also with fire, and selling some into, and retaining others in their servitude as their slaves. On some they imposed the fe-
"ver.eclipse, without admitting of the smallest relief or exemption; others
they transported into Guzerat, and into the Concan, and towards Arabia;
being places which they themselves used to frequent, in the view, either
of settling or sojourning therein, or of capturing vessels. In this way they
accumulated great wealth and property; making captives also of women
of rank, whom they kept in their houses, till European issue was procur-
ed from them. These Portuguese did in this manner also seize on many
Suyuds, learned and principal men, whom they retained in confinement,
till they put them to death, thus prejudicing and distressing the Mussulmans,
in a thousand ways; so as that I have not a tongue to tell or describe all
the mischiefs and mortifications attendant on such a scene of evil."

3d. "After this, they exerted their utmost efforts (which they had in-
deed from first to last) to bring the Mussulmans within the pale of their
religion, and they made at length peace with them for a consideration to be
paid to them of ten in the hundred."

3d. "The Mahomedans residing principally on the sea coasts, it was
customey for the newly arrived Europeans (who used to resort annually to
India at the appointed seasons,) desiring to ask the persons settled, of their
nation, at the sea-ports, whether, and why they (these settled Portuguese)
had not yet done away the appearance of these people. the Mussulmans re-
viling thereon their own chiefs for not abolishing the Mahomedan religi-
on, in the prosecution of which view the heads of the Portuguese desired the
Hakim of Cochin to expel the Mussulmans from his city, promising thereon
to prove themselves the means of his reaping double the profit which ac-
crued to him from their traffic; but the Hakim of Cochin answered,
"These are my subjects from days of old, and it is they who have erected
my city, so that it is not possible for me to expel them."
XVII. The war thus continued, till the Portuguese, who had been originally permitted to construct forts at Cochin and Cananore, obliged the Zamorin to admit of their erecting one also at Calicut.

XVIII. They had also made themselves masters of Goa, from the Adel Sahi dynasty of the Bejaapoor kings in Deccan; nor could any of the ships of the Mahommedans fail in safety to either gulf, without being furnished with Christian passes.

XIX. In the Hejira year 931, answering to A. D. 1524-5, the Mahommedans appear by Zeirreddien's narrative to have (countenanced no doubt, and probably actively assisted by their friend the Zamorin) been engaged in a barbarous war, or attack on the Jews of Cranganore; many of whom, our author acknowledges their having put to death without mercy; burning, and destroying at the same time their houses and synagogues, from which devastation they returned and enabled their great protector, the Zamorin, to expel in the course of the following year, the Portuguese from Calicut.

XX. But the latter, shortly afterwards re-established themselves in the vicinity of that capital, and were even permitted to build a fort within a few miles of it, at a place called Shaliaut; of which they are related to have retained possession for upwards of thirty years, and till, in or about the year 1571, they were after a long siege compelled to capitulate; whereupon the Zamorin is stated by Nizameddien to have so completely demolished their fortress as not to leave one stone of it standing on another.

XXI. The Portuguese proved however more permanently successful in an acquisition they made in the province, or (at that time) kingdom of Guzerat;
where, according to my author, they, in the year 943, or A. D. 1536-7, obtained from Behader Shah its monarch (whom they are charged by Zeirredden, with having afterwards slain) the cession of the fortress of Div, of which they still retain possession.

XXII. The author Zeirredden places within the following year the Portuguese building a fort at Cranganore, and their successful resistance at Div to an expedition fitted out against them from Egypt, by command of the Ottoman emperor Solymon, whose Bajba or commander is represented to have retired in a discreditable manner from the contest.

XXIII. This author places subsequent to the Hejira year 963, A. D. 1556, a difference that ensued between the Portuguese and Ali Rajah *, the Mabommedan chief of Cananore, and to whom belonged also the Laccadivian islands, which on this occasion Zeirredden charges the Christians with having barbarously ravaged; and towards the close of his historical detail, he inserts the following notice of the result of the long and bloody competition between them and the Mabommedans for the trade of the east.

1st. "It pleasing the Almighty to try the fidelity of his servants, he gave scope to the Portuguese, and bestowed on them the mastery of a number of sea ports, such as those in Malabar, and in Guzerat, and in Cocon, &c. and they became rulers in all the towns and cities, and swarmed there-

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* The head of this principality of Cananore (of which a female known by the name of the Berry, is the present representative) is also called Ali Rajah, which in the Malabar tongue may be interpreted "lord of the sea," a distinction affected (as I have heard) from this family's having long possessed the Laccadives, whence they have occasionally invaded the Maldives; the Bajba or monarch of which is said to be to this day jealous of them on that account.
Historical Remarks on

In, and reared fortresses in Hurmuz (Ormuz,) Saket, and Diu, Mebel, and
in Sumatra, and at Malacca, and Milkoop; and at Mylatoor, and Nagputtan,
and Ajuram, and in the ports of Showlmundul, (Coromandel,) with many
also in those of Ceylon. They navigated also as far as China, and their
commerce extended throughout all these and other ports, and the Mahom-
medan merchants sunk under their superior influence, and became obedient
to them and their servants; having no longer any power to trade them-
selves, unless in such articles as the Portuguese did not much like to deal
in; nor requires it to be suggested, that their choice fell on those commo-
dities that yielded the largest profit; all which they exclusively reserved
without allowing any one else to trade therein.

XXIV. The traveller Caesar Fredericke, having been on the Mal-
labar coast, about the time that Zeirreddien's history closes; it may tend
to contrast the preceding state of facts according to our Mahommedan author's
view of them to subjoin his Christian contemporary's account of some of the
same circumstances.

XXV. Treating of Barcelore, a town on the northern part of the Mal-
labar coast, Fredericke continues (in the words of his old English translator,)
and from thence you shall go to a city called Cananore, which is a harque-
bush shot distant from the chiefest city that the King of Cananore hath in
his kingdom, being a King of the Gentiles; and he and his are very naught-
and malicious people; always having delight to be in war with the
Portugal; and when they are in peace, it is for their interest to let their
merchandise pass; from Cananore you go to Cranganore, which is another
small fort of the Portugals, in the land of the King of Cranganore, which
is another King of the Gentiles, and a country of small importance, and of
THE COAST OF MALABAR.

"an hundred and twenty miles, full of thieves, being under the king of " Calicut (the Zamorin), a king also of the Gentiles, and a great enemy to " the Portugals, with whom he is always in war; and he and his country " are the neft and resting for stranger-thieves, and those be called Moors of " Carposa, because they wear on their heads long red hats; and thieves part " the spoils, that they take on the sea, with the king of Calicut, for he " giveth leave unto all that will go a roving, liberally to go; in such wise that " all along that coast, there is such a number of thieves, that there is no fail- " ing in those seas, but with great ships and very well armed; or else they " must go in company with the army of the Portugals.

XXVI. UPON the decline of the Portuguese power the Dutch, establishing themselves on the Malabar coast took from the former the fortresses of Cannanore and Cochin; and about the same period, or as early as 1664, the English East India Company appear by the records at Tellicherry to have begun to traffick in the Zamorin's dominions, in the southern districts of Malabar, as well as to have obtained in 1708, in the northern parts of the same coast, a grant of the fort of Tellicherry, from the Colafry or Cherical Rajah; the limits of which they soon extended on the south side, by the successful termination of a warfare which they had in 1719, with the Coringotte Nayr, who also agreed that they should enjoy the exclusive trade of pepper duty free, within his country; an acquisition which was followed in 1722 by their obtaining a similar exclusive privilege (with a reservation in favor of the Dutch trade alone) throughout the more extensive country of Cherical, and in 1725, they concluded a peace with the Rajah of the district of Cartinad; by which they became entitled to the pre-emption of all the pepper and cardamums it produced, acquiring also similar exclusive privileges in Cottiole in 1759; and in this manner so rapid appears to have been the extension of the power and influence.
of the British nation, on that part of the coast; that in 1727 the Company's servants at Tellicberry mediated a peace between the kings of Canara and Colofria; under which circumstances they added in 1734-5 the island of Dirmapatam and the fort of Madacara to their possessions, together with the entire last mentioned island, in the year 1749; with power to administer justice therein, on the same footing as at Tellicberry; and they appear in short to have been from this period courted, respected, and feared by all the Rajahs and chiefs within the limits of the ancient Colofrian kingdom; with which their good intelligence suffered however a temporary interruption, in consequence of the Company's government having in 1751 entered into a treaty with the Canarese king of Bednore; whereby, for the consideration of a factory at Onore, and a freedom of trade in his dominions, they agreed to assist him in the prosecution of that Prince's then meditated continuation of hostilities against the country of Colofria; but the former harmony was again established in 1757, when a new treaty of mutual defence was concluded between the Company and the Rajah of Cherical, and such appears to have been in general the progress of the British influence, that the English East India Company became every where entitled to superior or exclusive advantages, in purchasing the valuable products of the country, viz. pepper, cardamums and sandal-wood; and at last obtained in 1761 from the Rajah of Cherical the further important privilege of collecting for their own behalf the custom house duties and tolls, within their own territories; for the moderate consideration of a fixed quit-rent of 21,000 silver fanams, or 4200 rupees per annum, to be paid to his government; in addition to all which, he and the other Rajahs had by this time successively yielded up their right to all wrecks or stranding of the Company's vessels or property; an article which, with the customs on merchandize, constituted two of the most inherent and acknowledged real rights of the Malabar princes at that period.
XXVII. For, otherwise, those Rajah's rights in general did not then extend to the exaction of any regular, settled, or fixed revenue, from their subjects; the original constitution of their government only entitling them to call on their vassals the Brāhmen and Nayr landholders for military service; but, although this general exemption from any land tax is stated to have thus universally prevailed, in the early times of the Rajah's governments, it is however allowed that they were occasionally subject to some contribution for the extraordinary exigencies of defence against the invasion of foreign enemies such as the Canarese and Portuguese; and in Cherical, and also in the Samoory's dominions, the custom was at length introduced or perhaps rather continued, from the earliest period (as intimated in Section VI) of the Rajah's levying from the lands (excepting perhaps those appertaining to the temples) a settled revenue or income in money or kind, equal to one-fifth of the produce, and the Rajahs held also large domains of their own, which, with the customs on trade and mint duties, might have been sufficient for the maintenance of their ordinary state; more especially as in addition to these rights they, under the head of Poorebandrum, exacted from the Mapillas (i.e. the descendants of the Mussulmans*) a share of the estates of all deceased persons, whilst under the donation of Cberadaym, they derived a considerable casual, though con-

* Of the term Mahapilla or Mapilla I have heard many derivations, one of which was given me by a Caussy of their own tribe who scrupled not (whether jealously or otherwise, I cannot determine) to combine it of the two Hindoo words Mab, mother, and Pilla, a puppy, intimating that it was a term of reproach fixed on them by the Hindus who certainly rate them below all their own creditable castes, and put them on a footing with the Christians and Jews, to the former of whom (if not to both) they apply the same name; and thus the Christians of St. Thomas are distinguished by the name of the Syroean Mapillas, but I rather confide in the more reasonable derivation I obtained through Lieutenant Maclean's researches, viz. that the term is indeed compounded of Maha or Mahai and Pillai, though not, in the aforesaid Caussy's offensive sense, but as a denomination applied to the first strangers who settled in Malabar; by reason of their being supposed to come from Mocha, which in Malabar is called Mahai, whilst Pillai is also another Malabar word for a child or orphan, and from these two words the Mapillas are said to take their name of "children or natives (or perhaps outcasts) of Maha or Mocha."
flant revenue from the fines levied on crimes and offences, as well as from another article called Chungadum or protection money, received from the support and countenance granted by one Rajah to the subjects of another; and from the escheats of the estates of those of their Hindu subjects who died without heirs, and from Talapanam (which was a kind of poll-tax), and from the presents made by their subjects on the two annual festival days of Onam and Vishoo, and other certain annual offerings, together with a few professional taxes paid by distillers, weavers and fishermen, among the lower castes; besides all which they claimed as royalties all gold ore, * and all elephants, and the teeth of that animal; and all game, together with cardamum and jagwan or teek trees, and bamboos and honey, and wax, and the hides of tygers, and the fins of all sharks caught (forming a considerable article of trade), and the wreck (as above specified) of all vessels stranded on their coasts.

XXVIII. The chiefs who (under the denomination of the Rajahs, with the exception of a few independent Nayr landholders) have thus for so long a succession of centuries governed Malabar, are mostly of the Khetrie or second tribe of Hindus; but the Cherical and Samoory (who were the two principal families in point of extent of dominions) are of the Samunt or Erary (i.e. cowherd cast), as is also the Rajah of Travancore, who is a branch of the original Colastrian or Cherical family; and the mode of succession that has, time out of mind, been established among these princes (which I the rather add here as Zeirreddien has not otherwise than by inference touched at all on this part of the general subject) is not as in the rest of India, in favor of their own sons and children, but (as noticed by Zeirreddien in respect to the Nayrs) of their brethren in the female line, and of the sons of their

* Gold dust is found in a hill called Nellamoor Mella in the talook of Ernaar or Ernaud.
sisters; who do not marry according to the usually received sense of that term in other parts of the world, but form connections, of a longer or shorter duration according to the choice of the parties, for the most part with Malabar Brāhmens (called Namboories*, and who differ essentially from others of that cast throughout the rest of India) by whom are thus propagated the heirs to all the Malabar principalities, without however the reputed father's having, or pretending to, any paternal claim to the children of these transitory engagements; who, divided under each Rajahship into distinct branches, called Quilon or Kolcum or Kollem, i.e. families or palaces, succeed (as has been already intimated) to the chief Rajahship or supreme rule by seniority, whilst the next senior or heir apparent is titled the first, and the others, or the heirs in expectancy, are (as for instance in the Sahoorry's family) distinguished by the titles of the second, third, or fourth, or fifth Rajahs; as far down as which, they are called general Rajahs, and being deemed, more especially, to belong to the state, form a kind of permanent council to the Zamorin; whilst all those males of the family, who are more than five removes from the senior or Zamorinship, continue to be distinguished as first, second, or third Rajah of such a Kolcum or palace (meaning the house or branch of the family they were born in) and rise thus, as it were, in their own corps, till by reaching within four or five of the head, they become heirs-general; and as from this mode of succession, the chief Rajah is generally superannuated, either the heir ap-

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* Namboory or Namboodrie is said by some (according to the explanation furnished to me by Lieut. Maclean) to be a corruption of Nambie, applicable to those who's privilege it is to attend to and perform the religious service in the temples; whilst others affirm that the name is derived from Nama and Pogis, or Ponnkana; to invoke, pray, or perform religious ceremonies.

Namboodir or Nambidir, a class of inferior Brāhmens, said to have become degraded from their ancestor, a Namboorie, having been employed by Shermanoo Pernmaloo, and the Malabarians, to cut off by treachery (which he effected) Chora, a former Perimal or governor, whom Kissen Rao had sent back with an army to supersede Shermanoo, as intimated in Section VII, and besides these there are above a dozen more subdivisions of the Brāhmainical tribe.
parent, or one of the younger Rajahs is often vested under the title of Regent, with the active part of the administration.

XXIX. In this manner did the Zamorin's family in particular and the other Rajahs of Malabar in general, continue to carry on their government, till the year 1766, when Hyder Ali Khan made the descent on, and conquest of their country* of the manner and immediate consequences of which, as far as regards his own house, the following description was given to me by the present Sampoory of Zamorin.

XXX. "In the Malabar year 941, A.D. 1765-6, Hyder Ali Khan came with an army of fifty thousand men into Mulyalum or Mullewar (both terms meaning the Malabar country) and waged war with my maternal uncle, and having defeated him took possession of his dominion. My uncle sent a vakeel or ambassador to Hyder Ali Khan to request that his country might be restored to him, and agreed to pay any tribute which might be settled. Hyder gave a very favorable reception to the ambassador, but informed him, that as he could not place entire reliance on his word, he proposed himself to depute two persons, by name Sree Newaus Rao and Mockut Rao, to the Rajah to communicate his views; adding that the Rajah might trust to his honor, and go to meet him, when he would settle with him the terms that might be concerted between them. The vakeel came back with Hyder's men to the late Rajah, and informed him of what had passed; whereupon the Rajah intimated his apprehension of Hyder, whom he spoke of as a man of a quarrelsome disposition, and who had disgraced many persons of

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* This is to be understood with the exception of Paulghaut, which Hyder had possessed himself of four or five years before.
"high rank, and who would probably be disposed to inflict some mark of
disgrace upon him also; wherefore he (the Rajah) declared, that he would
place his reliance not so much on Hyder, as upon the assurances from
his two agents; who being both Brâhmaṇs, he would, on their swearing by
their Brâhmaṇical threads, by the Salgram (a stone sacred among the Hindus,)
and by their swords, that he should return in safety, consent to accompany
them, to have an interview with Hyder: to all which they agreed; and
as Hyder's army was at Toobsbery, the Rajah my uncle went with Sree
Newaus Rao and Mookut Rao, to meet Hyder, who advanced to
Coorunmar, where the meeting took place."

2d. "During the interview they conversed about the country; but Hy-
der soon broke off the conference, by demanding of the Rajah a crore of gold
mohurs; upon which the latter assured him, if he were to sell the whole of the
Calicut country, he could not get near that sum for it; but that he would
deliver the whole of his treasure and other property and pay him as much
as was in his power: yet Hyder was not satisfied with this offer, but
caused the Rajah to be seized and imprisoned, and sent him under a guard
of five hundred horse, and two thousand infantry, to the fort of Calicut; and
soon after Hyder arrived himself at Calicut, and the Rajah was confined
in his own house without food and was strictly prohibited from performing
the ceremonies of his religion; and as he thought that Hyder might in-
flict some further disgrace upon him; either by causing him to be hanged,
or blown from a gun; the Rajah set fire to the house with his own hand,
and was consumed in it."

XXXI. This first acquisition of Malabar, by the late Hyder Ali Khan, was not of long duration; for the Zamorin and other Rajahs took
advantage of his entering into war with the English East India Company in 1768, to reinstate themselves, and they maintained possession till 1774, when Hyder descending the Gbauts a second time, with an army, into the northern parts, and sending another, under Sree Newaus Rao, through Paul-gbaut, into the southern division; the Princes of the Samoory’s family again fled into Travancore; and Hyder’s direct and immediate government and administration, appear from that period to have permanently pervaded, and became in some degree established, throughout all the southern division of Malabar.

XXXII. For, some northern chieftains do not appear to have, on Hyder’s first or second conquest, forsaken their countries; but agreed to become his tributaries; whilst the southern districts became a prey to almost constant dissensions, arising from the resistance and troubles which the Rajahs of the Samoory’s family never discontinued to excite against the authority of Hyder’s government; which was unable either effectually to quell these continued disturbances, or to punish, or even to expel the authors of them; so that his officers were at length obliged to purchase that quiet which they could not command by stipulating, in 1779, with one of the representatives of the Samoory’s house, to allow him to levy a moderate rateable cess from the country for his own support; the effects of which conciliation could however hardly have produced any beneficial effects to the parties, or the inhabitants, before they were again embroiled by the consequences of the attack on, and seige of Tellicberry in 1779–80, and of the general war that followed; during which (that is, after the raising of the siege in question) the Rajahs of the Samoory’s house took all the part in their power in favor of the British arms; and considerable successes attended their joint efforts in the capture in 1782 of Calicut, and other places; but by the peace of 1784, the
Malabar countries being again given up, the southern as well as northern Rajahs were left at Tippoo’s mercy, which did not however prevent some of the Samoories from still lurking in, and occasionally exciting alarm and disturbances throughout the former part of these districts; so that the officers of Tippoo’s government were obliged in like manner as their predecessors under that of his father, to induce this family to a peaceable conduct, by bestowing a pension in jaghire upon Ruvee Vurma, one of the most active of its members, which might perhaps have led to a closer union between the exiled Zamorin and the Mysore government, had not the negotiations to that end been interrupted in consequence of a resolution formed by Tippoo (in the combined view of indulging his zeal as a Mahommedan, and of, at the same time, rooting up, as he fondly might imagine, the causes of that aversion which the Malabar Hindus had hitherto shewn to his government,) to attempt the forcible conversion of all his Hindu subjects in Malabar to the Mussulman faith: for which purpose after ineffectually trying in person the effects of persuasion, in a progress that he made into that country in April 1788, he directed his officers of Calicut, to begin by seizing on the Brâhmins, and to render them examples to the other classes by enforcing circumcision on them, and compelling them to eat beef; and accordingly many Brâhmins were seized in or about the month of July 1788; and were thus forcibly deprived of their castes: whilst others sought for shelter with the Rajahs of the Samoor’s family, two or three of whom were then within the Calicut districts; and Tippoo having himself made similar constrained conversions of a Rajah of the family of Perempaad (one of the southern talooks), and of Tichera Teroopar, (a principal Nayr of Nelemboor, in the same southern division of that country,) together with some other persons whom he had for various causes carried up with him into Coimbetoor; these combined circumstances and the return of the above named victims to his bigotry, some short time thereafter, into Malabar
spread considerable alarm; and the injured parties as well as the great body of Nayrs and Hindus, who justly feared for what might happen to themselves, rallied around and looked principally up to that prince of the Samoory's family, called the younger Ruvee Vurma (who with his elder brother of the same name had some years before forced Hyder's officers to purchase their temporary and doubtful neutrality) through whose assistance, upwards of thirty thousand Brâhmins (including their wives and families) escaped from July to November 1788, from the Calicut districts into Travancore; besides which, resenting these oppressions by Tippoo, on those of his sect and religion, Ruvee Vurma proceeded to open hostilities with the officers of Tippoo's government, and proving victorious, and being assisted by the Nelembboor and Perpeanaad converts as well as by the Nayrs in general; and even by some of the Mapillas, a general insurrection took place throughout the southern districts; and the insurgents becoming masters of the open country, invested Calicut; so that Tippoo found it necessary to dispatch Monsieur Lally with a strong force to its relief, on whose arrival the Rajah retreated, and was afterwards attacked in different places without however being driven quite out of the field; in so much, that Tippoo, fearing perhaps for the stability of his dominion in Malabar, followed Monsieur Lally in person in January or February 1789; at which period his designs were generally reported to aim at the entire conversion or extirpation of the whole race of Rajahs, Nayrs, and other Hindus; many of whom were accordingly seized on and circumcised; whilst others escaped; or failing in the attempt, put themselves to death to avoid loss of caste; one affecting instance of which is related of the Rajah of Cherical who finding that he was also to be circumcised, attempted to escape, and being pursued by Tippoo's troops, and seeing no likelihood of being able to maintain any long resistance against them, he, after providing for the safety of his sister and her son, by sending them off to Travancore, preferred for
himself a voluntary death, to the ignominy, that he knew awaited his survivance; and he accordingly died either by his own hand, or by that of a friendly Nayr, whom he is said to have required to perform this last mournful office for him; whereupon Tipoo disappointed of his prey seized on the dead Rajah's effects and country, which he continued to hold till finally deprived by the British arms, of that and the greater part of his Malabar territories, by the successful war that terminated by the peace and his consequent cessation of that country in the year 1792, since which the Zamorin and all the other Rajahs have returned to their districts into which they have been readmitted in full subordination to the Company's government; which can alone beneficially conduct the administration of that coast, in its present circumstances, and administer equal and impartial justice to the two great classes of Hindus, and Mabommedans, of which the present society consists; and who, still smarting under the impression of the injuries they reciprocally inflicted and suffered, during the turbulent and calamitous period of the Mysore dominion, can hardly be deemed to be in temper to qualify either to stand towards each other in the relation of sovereign and subject; more especially as the authority would have reverted and the consequent retaliation have no doubt been exercised (as was in some instances at first attempted) by those, who had been during the last twenty years the inferior and suffering party; for the Mapillas or Mabommedans, finding themselves, during the preceding disastrous and unsettled administration, of the religion of their new Prince, had availed themselves of that powerful circumstance in their favor, to molest, despoil, and (as far as in them lay) to ruin their former Hindu superiors, so that the bitterness of the enmity between the two sects had risen to the highest pitch of rancour; and will no doubt require a course of years to subside, or to give place to a re-establishment of the ancient amity.
XXXIII. It has been already intimated, that the Mapillas in the southern districts exceed in numbers the remaining race of Hindus; and although many of them who inhabit the towns on the coast are industrious and quiet subjects; yet there is a large proportion, called the Jungle-Mapillas who occupying the interior recesses near to the hills have been so long inured to predatory habits that some elapse of time must be required fully to reclaim them.

XXXIV. I have thus submitted to the Society the best account which from the materials in my possession, I have been able to draw up of the history and manners of the inhabitants in the new acquisition of the East India Company; excepting as far as regards the Nestorians and other Christians, and the Jews; the major part of both of whom living to the southward of what are properly the British limits, I have not hitherto had any sufficient opportunity of acquiring minute or accurate information respecting them.
II.

An Account of Two Fakeers, with their Portraits.

By Jonathan Duncan, Esq.

I beg leave to lay before the Society the accompanying Pictures of two Fakeers now living at Benares which I had drawn there from the life. The first is named Purana Poori, or (as usually pronounced in Hindoee) Praun Poory, a Sunyassy, distinguished by the epithet of Oordbbabu, from his arms and hands being in a fixed position above his head; and as he is a very intelligent man and has been a great traveller, he consented, in the month of May 1792, to gratify my curiosity, by allowing to be committed to writing by a servant of mine from his verbal delivery in the Hindustan language, a relation of his observations in the various countries into which he has penetrated; but as his account is too long for insertion in the Asiatick Researches, (should it even be deemed to merit a place in so respectable a repository) I have here extracted the principal parts of it, as an accompaniment to the portrait; having only farther to premise that I have the utmost reliance on our traveller's not designing to impose in any part of his narrative; but allowance must be made for
defects of memory in a relation extending through so many years and comprehending such a number of objects.

II. **Praun Poory** is a native of Canouge, of the Kbeta or Raujepoot tribe. At nine years of age he secretly withdrew from his father's house, and proceeded to the city of Betbour on the banks of the Ganges; where he became a Fakeer about the time (for he cannot otherwise fix the year) of Munsoor Ali Khan's retreat from Dehli to Lucknow, and two or three years before the sack of Mat'bura by Ahmed Shah Abdalli; which two events are in Scott's "History of the Dekkan," related under the years 1751-2, and 1756; within which period he came to Allababad to the great annual meeting of Pilgrims; where hearing of the merits attached to what he describes as the eighteen different kinds of Tupisja, or modes of devotional discipline, he made choice of that of Oordbbabu above noticed, the first operation of which he represents to be very painful and to require preparation by a previous course of abstinence.

III. He then set out to visit Ramisber, opposite to Ceylon, taking his route by Kalpi, Oujeine, Burbanpoor, Aurungabad, and Elora, the surprising excavations at which place he notices; and crossing the Godavery at Tounka, he passed by Poona, Settara, and various other intermediate towns to Bednore, of which a Ranny or Princefs was then the Sovereign; whence he went on to Seringapatnam then in the possession of its Hindu Princes, whom he names Nund Raue and Deo Raue; leaving which, he descended through the Tamercbery pass into Malabar and arrived at Cochin, whence he crossed the Peninsula through a desert tract of country to Ramisber, after visiting which, he returned up the Coromandel Coast to the Temple of Jagernauth in Orissa, specifying
all the towns on this part of his route, which are too well known to require to be here enumerated.

IV. From Jaggernauth our traveller returned by nearly the same route to Ramisser, whence he passed over into Silan or Ceylon, and proceeded to its capital, which some he observes call Khundi (Candi), and others Noora; but that Khundi Maha Rauje is the Prince's designation; and that farther on he arrived at Catlgang, on a river called the Manic-Gunga, where there is a temple of Cartica, or Carticeya, the son of Mahadeo, to which he paid his respects; and then went on to visit the Sreepud, or "the divine foot," situated upon a mountain of extraordinary height; and on one part of which there is also (according to this Fakeer's description) an extensive miry cavity, called the Bhoput tank, and which bears also the name of the tank of Ravan or Raban (the b and v being pronounced indifferently in various parts of India) one of the former Kings of this island, well known in the Hindu legends for his wars with Rama; and from whom this Tapu or island may probably have received its antient appellation of Taprobane (i.e. the isle of Raban); but however this may be, our traveller states that leaving this tank he proceeded on to a station called Seeta Koond (where Rama placed his wife Seeta on the occasion of his war with her ravisher Ravan) and thence reached at length to the Sreepud, on a most extensive table or flat, where there is (he observes) a bungalow built over the print of the divine foot, after worshiping which he returned by the same route.

V. From Ceylon this Sunyaffy passed over among the Malays, whom he describes as being Musulmans; but there was one capital Hindu merchant, a native of Ceylon, settled there, at whose house he lodged for two months.
and who then procured him a passage to Cockin on the coast of Malabar, up which he proceeded by land; particularizing with a wonderful tenacity of memory the several towns and places through which he passed with their intermediate distances; but as these are already well enough described in our own books of geography his account of them need not be here inserted.

VI. In this direction he proceeded along the coast to Bombay, and passed on to Dwaráca, Tatta Hingulaj or Henglaiz, and through Multan, beyond the Attock; whence he changed his route to the Eastward and arrived at Hurdevar where the Ganges enters the plains of Hindustan; and from that place of Hindu devotion he again departed in a westerly direction through the upper parts of the Punjab to Cabul, and thence to Bamian, where he mentions with admiration the number of statues that still exist, though the place itself has been long deserted by its inhabitants.

VII. In the course of his rambles in this quarter of the country he fell in with the army of Ahmed Shah Abdalli, in the close vicinity of Ghizni, and that King, having an ulcer in his nose, consulted our Fakeer to know if, being an Indian, he could prescribe a remedy for it; on which occasion the latter acknowledged that, having no knowledge of surgery or medicine, he had recourse to his wits by insinuating to the Prince, that there most probably did subsist a connection between the ulcer and his sovereignty; so that it might not be advisable to seek to get rid of the one, lest it should risk the loss of the other; a suggestion that met (he adds) with the approbation of the Prince and his ministers.
VIII. **Praun Poory** afterwards travelled through Khorasan, by the way of Herat and Mub-bed, to Astrabad, on the borders of the Caspian sea; and to the Maba or Buree, i.e. larger, *Jowalla Mookbi*, or *Juula Muchi*, terms that mean a "flaming mouth," as being a spot in the neighbourhood of Bakee, on the west side of the sea in question, whence fire issues; a circumstance that has rendered it of great veneration with the Hindus, and **Praun Poory** adds, that locally it is called *Daghestan*, a word which I understand to mean in Sanscrit "the region of heat;" though the cause is candidly ascribed by our traveller to the natural circumstance of the ground being impregnated with naphtha throughout all that neighbourhood.

IX. After sojourning eleven months at this *Jowalla Mookbi*, he embarked on the Caspian, and obtained a passage to Astrachan; where he mentions to have been courteously received by the body of Hindus residing in that place.

X. **Praun Poory** next proceeds to notice, that a river, (meaning no doubt the Volga) flows under Astrachan, and is he says frozen over so as to admit of passengers travelling on it during four months in the year; and thence, he mentions, in eighteen days journey he proceeded to Moscow, the antient capital of Russia (the sovereign of which was, he observes, a Beeby or lady) and that he halted there during five days in the Armenian Seray; and he takes notice that there is an immense bell in this city under which a hundred persons may find room to stand; adding that he has heard in a month's journeying beyond Moscow a traveller may reach Petersburgh and thence get to Great Britain.

XI. **But Praun Poory** proceeded no farther than Moscow, from which
place he returned by Astrachan, and passed through Persia by the route of Shamakhi, Sherwaun, Tubrez, Hamadan, and Ispahan; in which capital he sojourned during forty days, and then passed on to Shiraz; where he arrived during the government of Kerim Shah, whom he describes as being then about forty years of age, as far as he could judge from an audience he had of him; and there were, he adds, two English gentlemen (one of whom he calls Mr. Lister) at this King’s court at the period of his visiting it.

XII. Embarking at Aboosheber, on the southern coast of Persia, he reached the Isle of Kharek, then governed by a chief called Meer Manna, who had, he observes, taken it, from the Dutch: and whom he represents as a chieftain, living by carrying on a warfare against all his neighbours; and he mentions several Hindus as being settled here; he next arrived at the islands called Babrein, on the coasts of which pearls are, he says, found; whence re-embarking for Buffora, the vessel he was in was met and examined, and again released by the Bombay and Tartar grabs then carrying on hostilities (as he understood) against Solyman, the Mohammedan chief of the Babrein isles. After this occurrence, our traveller arrived at Bufforab a well-known town and sea-port, in which he found a number of Hindu houses of trade as well as two idols or figures of Vishnu, known under his appellations of Govinda Raya and Calyana Raya; or, according to the vulgar enunciation, and Praun Poory’s pronunciation of their names, Kulyan Row and Gobind Row.

XIII. After an ineffectual attempt to penetrate up the Tigris to Baghdad, he returned to Buffora, whence descending the Persian gulph, he arrived at Muscat, where he met also a number of Hindus, and from that place he reached Surat; from hence he again proceeded by sea to Mokba, where also he
found a number of Hindurs, and he thence returned into India, landing on its west coast in the port of Sanyannpor, situated I suppose towards or in the Cutch or Sinde countries.

XIV. From this port he journeyed to Balkb (where he also mentions Hindurs being settled) and to Bokbara, at which he notices having viewed the famous Dergab of Khaja Chestee, and the loftiest minar or spire he has ever seen. From this place, after twelve days journey he arrived at Smarkand, which he describes as a large city having a broad river flowing under it, and thence our traveller arrived after a ten days journey at Budukhsban, in the hills around which rubies are he says found, whence he travelled into Cashmir, and from that passing over the hills towards Hindufstan, he came to the Gungowtri, or "descent of the Ganges," where there is he observes a statue of Baghirathab; at which place the river may he says be leaped over; and he farther notices, that thirty coss to the southward of Gun Gowtri there is a fountain or spring called the Jumnowtri or Yumnowtri, which he describes as the source of the Jumna or Yamuna river.

XV. Our traveller, leaving this part of the country, came in a south east direction into Oude, and went thence into Nepaul, the several towns in which he describes, inclusive of its capital Catmandee, where flow, he observes the four rivers of Naugmutty, Bisbenmutty, Roodrmutty and Munmutty; and at seven days journey beyond which, he notices a station called Goffayn-thaun, where Mahadeo took poison and slept, as related in the Hindu books; from which place (described by him as a snowy tract) he returned to Catmandee, and went thence in another direction into Tibet, crossing in his way to it the Cofa river by a bridge composed of iron chains, and observing, that at Laslee, the third day's journey beyond the Cofa, is the boundary of Nepaul and
Thibet, where guards are stationed on both sides: whence, in another day's travelling, Praun Poory arrived at Khassa, a town within Bhote or Thibet (for by the former name the natives often understand what we mean by the latter) whence he proceeded to Chebang, and from that to Koortee, where passes are given; and then crossed over the hills (called in that country Lungoor) into the plain of Tingri; beyond which one day's journey is Gunguir, and at the end of the next, Sangee, from Sangu, which means, he says a bridge, over a river there; after which our traveller proceeds to notice the other distances and stations of each munzel, or days journey (with other particulars the insertion of all which would render this address too prolix) till he reached Labassa, and the mountain of Petala, the seat of the Delai Lama, whence he proceeded to Degurcha, which he mentions as that of the Taishoo Lama, and then in a journey of upwards of eighty days, reached to the lake of Maun Surwur (called in the Hindu books Manafurbovara) and his description of it, I shall here insert in a literal translation of his own words.

XVI. "Its circumference (i.e. of the lake of Maun Surwur) is of six days journey, and around it are twenty or five and twenty Goumaris (or religious stations or temples) and the habitations of the people called Dowki; whose dress is like that of the Thibetians. The Maun Surwur is one lake, but in the middle of it there arises, as it were, a partition-wall, and the northern part is called Maun Surwur, and the southern Lunkad or Lunkadeh. From the Maun Surwur-part issues one river, and from the Lunkad-part two rivers. The first is called Brahma, where Pureor Sem making Tupifsya, the Brabmaputra issued out, and took its course to the eastward; and of the two streams that issue from the Lunkad, one is called the Surju being the same which flows by Ayoddyà or
"Oud; and the other is called Sutroodra (or in the Puranas Shutudru, and vulgarly the Sutluje) which flows into the Punjaub country; and two days journey west from the Maun Surour, is the large town of Teree Ladac, the former Rajahs of which were Hindus but have now become Mahomedans. The inhabitants there are like unto the Tibetians. Proceeding from Ladac, seven days journey to the southward there is a mountain called Cailasa Cungri (Cungur meaning a peak) which is exceedingly lofty, and on its summit there is a Bhojiputr or Bhoorijputr tree, from the root of which spouts or gushes a small stream, which the people say is the source of the Ganges, and that it comes from Vaiconthba or heaven, as is also related in the Puranas, although this source appears to the sight to flow from the spot where grows this Bhojiputr tree, which is at an ascent of some miles; and yet above this there is a still loftier summit, whither no one goes, but I have heard that on that uppermost pinnacle there is a fountain or cavity, to which a Jagui somehow penetrated; who having immersed his little finger in it, it became petrified.

At four days journey from Cailasa Cungri is a mountain called Brabmadanda or Brahma's staff, in which is the source of the Alknundra Gangas; and five or six days journey to the south of that are situated on the mountains the temples dedicated to Cedara, or Kedarnauth, and Budranauth; and from these hills flow the streams called the Kedar Ganga and Sheo Ganga; the confluxes of which, as well as of the Alknundra, with the main stream of the Ganges, take place near kernpraug, and Depraug, in the vicinity of Serigur; whence they flow on in a united stream which issues into the plains of Hindustan at the Hurdewar."

XVII. Praun Poory went back from this part of the country into Nepaul and Tibet, from the capital of which he was charged by the admi-
nistration there with dispatches to the governor general Mr. Hastings, which he mentions to have delivered in the presence of Mr. Barwell, and of the late Messrs. Bogle and Elliott; after which, our traveller was sent to Benares with introductory letters to Rajah Cheyt Singh, and to Mr. Graham, who was at that time the resident; and some years afterwards Mr. Hastings bestowed on him, in Jaghire, the village of Assapoor, which he continues to hold as a free tenure, though he is still so fond of travelling, that he annually makes short excursions into different parts of India, and occasionally as far as Nepal.

XVIII. The name of the other Hindu fakeer or Brabmecbary, (whose picture reclining, in his ordinary position, on his bed of iron-spikes, accompanies this) is Perkasunund, and he assumes the title or epithet of Purrum Soatuntre, which implies self-possession or independence; and as his own relation of his mode of life is not very long, I deliver an English translation of it, as received from him in Augul 1792; only observing that the Jowalla Mookbi which he mentions to have visited, is not the one on the Caspian, but another; for there are at the least three famous places known to the Hindus under this general denomination, one near to Naugercote, another (whither Praun Poory went) in the vicinity of Batee, and the third (as I have been informed by Lieut. Wilford) at Corcoor to the eastward of the Tigris, but, whether it be the first or last of these Jowalla Mookbis that Perkasunund visited, his narrative is not sufficiently clear to enable me to distinguish; neither are his general knowledge and intelligence at all equal to Praun Poory's, which may account for his observation as to the difficulty of reaching the Maun Surewar lake, whither not only Praun Poory, but other Fakeers that I have seen at Benares, profess to have nevertheless penetrated; so that my present notice of Perkasunund to the So-
society, is principally on account of the strange penance he has thought fit to devote himself to, in fixing himself on his *Ser-Seja*, or bed of spikes, where he constantly day and night remains; and to add to what he considers as the merit of this state of mortification in the hot weather, he has often burning around him logs of wood, and in the cold seazon, water falling on his head from a perforated pot, placed in a frame at some height above him; and yet he seems contented, and to enjoy good health and spirits; neither do the spikes appear to be in any material degree distressing to him, although he uses not the defence of even ordinary cloathing to cover his body as a protection against them; but as the drawing exhibits an exact likeness, as well of his person as of this bed of seeming torture, I shall not here trouble the Society with any further description of either, and conclude by mentioning, that he is now living at Benares, on a small provision that he enjoys from government.

P. S. Had my official occupations, whilst at Benares, admitted of my paying due attention to Praun Poory's narrative of his travels, the geographical information they contain, or rather point to, as to the sources of the Ganges, Jumna, and other principal rivers, might have probably admitted of a fuller illustration, and greater degree of accuracy, from a farther examination of that Sunyaff, aided by the important assistance which I might in that case have obtained on this part of the subject from Lieutenant Wilford, who has, through his own unwearied exertions, and chiefly at his own expense, collected a variety of valuable materials relative to the geography of the north of India; at the same time that by a zealous application to the study of Hindu literature, joined to an intimate acquaintance with whatever the Greeks and Romans have left us, on their mythology, or concerning the general events of former ages, as far as their knowledge of
the world extended, this gentleman is likely to throw much light on the earlier periods of the history of mankind.
Translation of the relation delivered by Purrum Soatunte
Purkasanund Brehmcharry of his travels and life; de-
ivered on the 14th August 1792.

I am a Brâhmen of the Vajurveda sect, and of the line of Pra’sher. My ancestors are from the Punjaub. They had a long time ago come to visit at Jagernauth, and had reached, and were abiding at Gopegown, where I was born. When I was only ten years of age, I used to give myself up to meditation and mortification, lying upon thorns and pebbles, a mode of life I had continued for ten years, when it was interrupted by my relations who wanted me to think of marriage; whereupon, having attained to twenty years of age, I left my home, determined to devote myself to travelling. First, after coming out of my house, I went towards Ootrakkund by way of Nepaul and Bhote, I went into the country of the great and little Lama, where the Teeshoo Lama lives. In this tract is the Maun Talae (i.e. tank or lake) as far as which is inhabited, but not beyond it, and the lake called Maun Surseur, is seventeen munzels or days journey farther on in a jungly country, which prevents access to it. There are in this quarter, the places known under the denominations of Muni, Makebo, Mahado, and of Teloke, Nauthjee, and the Debbees, or cooking places of Nowoauth, and of the eighty-four Sidbs, or religious persons, thus distinguished; all situated on this side of the Maun Surseur. Into these Debbees, if one throw in either two loaves, or as many as are wanted; one in the name of the Sidb, and another in one’s own name; that in the name of the Sidb remains at the bottom, and that in one’s own name rises up baked, these places I visited; at the Maun Talae the boundaries of four countries meet, viz. that of China, of the Lama’s country, of the Bescher country, and that of the Cooloo country.
Proceeding thus in religious progress from hill to hill, I passed through the Sbaun country, and descending from the hills, arrived in Cashmir, where I halted for devotional purposes as well as to prosecute my studies. From Cashmir, I went through Tibet to the great Jowallab, which is situated in a country where fire rises out of the ground for a space of twelve coss. In this Jowallab whoever wants to dress victuals or boil water, they have only to dig a little fissure into the surface of the ground, and place the article thereon; which will serve without wood. On this side of Peisbore, where the Sendbe salt is produced, there is a village called Dudun Khan’s Pend adjoining to the Salt-pits. The Rajah of that country was called Rajah Bhenda Singh.

I had here shut myself up in a Gompha or cell, where I vowed to remain doing penance for a period of twelve years. Vermin or worms gnawed my flesh, of which the marks still remain; and when one year had elapsed, then the Rajah opened the door of the cell, whereupon I said to him “either take my curse, or make me a Ser-seja, or bed of spikes;” and then that Rajah made for me the Ser-seja I now occupy. During the four months of the winter I made jel-seja upon this feat, jel-seja is, that night and day water is let fall upon my head. From thence by the Sindb country, I went to Hingoolauje (a mountain dedicated to Debee). All the country to the west and south I travelled over upon this Ser-seja; coming at length to Prayago or Allahabad, and passing by Cashb or Benares, I went to the temple of Jagerpauth, and visiting Balajee, proceeded on to Ramisber, and after visiting that place, I journeyed on to Surat. In Surat I embarked on a vessel, and went by sea to Muscat in twelve days, and thence returning came to Surat again. Mr. Boddam was then at Surat, and he afterwards went to Bombay. I stayed two years at Surat: Mr. Boddam granted me something to subsist on with my followers, and built a house for me, and still my Cheilas or disciples are there. It is thirty-five years since I made
Tupisya upon this Ser-seja. I have been in several countries; how much shall I cause to be written? I have been at every place of religious resort and have no longer any inclination to roam; but being desirous of settling in Benares, I have come hither. Three jugs have passed and we are now in the fourth, and in all these four ages there have been religious devotees and their disciples; and they are first, to make application to the Rajah, or to whoever is the ruler of the place, for even Rajahs maintain and serve us, and it is befitting that I obtain a small place where I may apply to my religious duties, and that something may be allowed for my necessary expenses that I may bless you.

**Question.**

In all the eighteen Tupisyas, or modes of penitential devotion that are made mention of in the Shaster, the one you have chosen is not specified; wherefore it is inferable that you must have committed some great offence, in expiation of which you have betaken yourself to the present very rude mode of discipline. Declare, therefore, what crime you have perpetrated?

**Answer.**

In the Sutbya Yug or first age, there was a Rikh or holy-man called Agniburna, who performed this Ser-seja-discipline; as in the Treta or second age, did Ravono, for ten thousand years; and in the Dwapar or third age, Bhikma Pitamaha, did the same; and in the Calé Yug or present age, I have followed their example, during a period of thirty-five years, but not to expiate any crime or offence by me committed, in which respect if I be guilty, may Veshweishura strike me a lepor here in Benares.
QUESTION.

When you went to Ramisber, at what distance was Lunka?

ANSWER.

We go to Ramisber to worship, and at the Setbund, or bridge there, there is a Ling of sand, which I paid my respects to, but beyond that, nobody from Hindustan has gone to Lunka. In the sea, your ships, are always failing about; but the current is such, that they cannot get thither; so, how can we go there? but from Singuldeep or Ceylon, we can see the glitterings of Lunka. There I did not go, but my Cheilas have been there, who said, that in Singuldeep is the seat of Rawon, and Hunooman's twelve chokies or watch stations.

QUESTION.

Have you seen Ram's bridge? if you have seen it, describe its length and breadth, and whether it be still sound or broken?

ANSWER.

Ram's bridge, which is called Setbund, is ascertained by the Vedas to be ten Jojun broad and one hundred Jojun long, but in three places it is broken. The people call it a bridge; or otherwise, it appears to have wood growing on it and to be inhabited.
III.

Enumeration of Indian Classes.

By H. T. Colebrooke, Esq.

The permanent separation of classes, with hereditary professions assigned to each, is among the most remarkable institutions of India; and, though now less rigidly maintained than heretofore, must still engage attention. On the subject of the mixed classes, Sanscrit authorities, in some instances, disagree: classes, mentioned by one, are omitted by another; and texts differ on the professions assigned to some tribes. A comparison of several authorities, with a few observations on the subdivisions of classes, may tend to elucidate this subject, in which there is some intricacy.

One of the authorities I shall use, is the Jātimāla, or garland of classes, an extract from the Rudra-yāmala Tantra, which, in some instances, corresponds better with usage and received opinions, than the ordinances of Menu and the great D'herma-purāṇa.* On more important points its authority could not be compared with the D'herma-sāstra; but, on the subject of classes,

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* The texts are cited in the Vṛddārṇavaśāstra, from the Vṛddh Dherma-purāṇa. This name I therefore retain, although I cannot learn that such a purāṇa exists; or to what treatise the quotation refers under that name.
it may be admitted, for the Tantras form a branch of literature highly esteemed, though at present much neglected. Their fabulous origin derives them from revelations of Siva to Parvati, confirmed by Vishnu, and therefore called Agama, from the initials of three words in a verse of the Téodala Tantra:

"Coming from the mouth of Siva, heard by the mountain-born goddess, admitted by the son of Vasudeva, it is thence called Agama."

Thirty-six are mentioned for the number of mixed classes; but, according to some opinions, that number includes the fourth original tribe, or all the original tribes according to other authorities. Yet the texts quoted from the great D'berma-purána, in the digest of which a version was translated by Mr. Halhed, name thirty-nine mixed classes, and the Játimalá gives distinct names for a greater number.

On the four original tribes, it may suffice, in this place, to quote the Játimalá, where the distinction of Brábmanas according to the ten countries to which their ancestors belonged, is noticed; that distinction is still maintained.

"In the first creation by Brahma, Brábmanas proceeded, with the Véda, from the mouth of Brahma; from his arms Cñhatriyas sprung; so, from his thigh, Voiiyas; from his foot Súdras were produced: all, with their females.

The lord of creation viewing them, said, "what shall be your occupations?" They replied, "we are not our own masters, oh God! command us what to undertake."
Viewing and comparing their labours, he made the first tribe superior over the rest. As the first had great inclination for the divine sciences, (Brāhma-
mevēda), therefore he was Brāhmaṇa; the protector from ill (esḥāte) was Čśāatriya; him whose profession (vēṣa) consists in commerce, which pro-
motes success in war for the protection of himself and of mankind, and in husbandry and attendance on cattle, called Vaiśya; the other should voluntarily serve the three tribes, and therefore he became a Sūdra: he should hum-
ble himself at their feet."

And, in another place,

"A chief of the twice-born tribe was brought by Vishnu's eagle from Sāca dwīpa: thus have Sāca dwīpi Brāhmaṇas become known in Jambu dwīpa.

"In Jambu dwīpa, Brāhmaṇas are reckoned tenfold; Sārejvata, Čānya-
cuba, Gauda, Māthila, Utecala, Dravīdā, Marabashtrā, Tailanga, Gujjava,
and Cāsmīra, residing in the several countries, whence they are named. (1)

"Their sons and grand-sons are considered as Čānycūba priests, and so forth; their posterity descending from Menu, also inhabit the southern re-
gions; others reside in Anga Benga and Calinga; some in Camrūpa and Odra;

(1) These several countries are Sārejvata, probably the region watered by the river Scutatta, as it is marked in maps, unless it be a part of Bengal named from the branch of the Bhāgirathī, which is distin-
guished by this appellation; Čānycūba, or Cauj; Gujjava, probably the western Gār; and not the Gaur of Bengal; Māthila, or Tirabhātrī, corrupted into Tirbut; Utecala, said to be situated near the celebrated temple of Jagannāt'ha; Dravīdā, pronounced Dravīra; possibly the country described by that name, as a maritime region south of Carnata (Jo. Ref. vol. 2. p. 111); Marabashtrā or Marhātta; Telinda or Tel-
gāna; Gujjava, or Guvāt; Čauj; Čāsmīra.
others are inhabitants of Sumbbadéśa: and twice-born men, brought by former princes, have been established in Bāda, Mágadha, Varéndra, Gbōla, Svernapruma, China Cūla, Sāca and Berbera.” (1)

I shall proceed, without further preface, to enumerate the principal mixed classes, which have sprung from intermarriages of the original tribes.

1. Murd'habhishicta, from a Brāhmaṇa by a girl of the Cśatriya class; his duty is the teaching of military exercises, the same origin is ascribed, in the great Dherma purāna, to the Cymbbacāra (2) or potter, and Tantrayāya (3) or weaver: but the Tantrayāya according to the Jātimāla, sprung from two mixed classes, begotten by a man of the Manibandha, on a woman of the Manicāra tribe.

2. Ambasht'ha, or Vaidya (4) whose profession is the science of medicine, was born of a Vaisya woman by a man of the secerdotal class. The same origin is given by the D'herma purāna, to the Canacāra (5) or brazier, and to the Sanc'bacāra (6) or worker in shells. These again are stated, in the Tantra, as springing from the intermarriages of mixed classes, the Canacāra from the Tāmracāta and Sanc'bacāra; and the Sanc'bacāra, also named Sancbaddareca, from the Rājaputra and Gândhica: for Rājaputras not only denote Cśha-

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(1) Anga includes Bhāgalpūr. Benga, or Bengal proper, is a part only of the suba. Varéndra, a tract of inundation north of the Ganges, is a part of the present zila of Rājgābhi. Calinga is watered by the Godāvari (Ait. Ref. vol. 3. p. 48). Camrūpāla, an ancient empire, is become a province of Aśtam. Odāra I understand to be Oriņa proper. Rāda, (if that be the true reading) is well known as the country west of the Bhāgovatī. Mágadha, or Magadha, is Bahār proper. Gbōla is part of Bībhām, another region of this name is mentioned in the Aśṭāvīk Recherche (vol. 3. p. 48). Svernapruma, vulgarly Svanāgān is situated east of Dacca. Cahōla is a portion of the present Chitaie empire. On the rest I can offer no conjecture; Saca and Berbera, here mentioned, must differ from the Dūlpua, and the region situated between the Cphōla and Sancha-dūlpua.

triya as sons of kings, but is also the name of a mixed class, and of a tribe of fabulous origin.

Rudra-Yāmala Tantra: “The origin of Rājaputras is from the Vaiśya on the daughter of an Aṃbasht'ha. Again, thousands of others sprung from the foreheads of cows kept to supply oblations.”

3. Nishada, or Pārasava, whose profession is catching fish, was born of a Śudra woman by a man of the sacerdotal class. The name is given to the issue of a legal marriage between a Brāhmaṇa and a woman of the Śudra class. It should seem, that the issue of other legal marriages in different classes, were described by the names of mixed classes springing from intercourse between the several tribes. This, however, is liable to some question; and since such marriages are considered as illegal in the present age, it is not material to pursue the inquiry.

According to the Dharma-purāṇa, from the same origin as the Nishāda springs the Varājīvī or astrologer. In the Tantra, that origin is given to the Brāhma-Śudra, whose profession is to make chairs or stools used on some religious occasions: under the name of Varājīvī (1) is described a class springing from the Gópa and Tāntravāya and employed in cultivating beetle. The profession of astrology, or, at least that of making almanacks, is assigned, in the Tantra, to degraded Brāhmaṇas.

“Brāhmaṇas, falling from their tribe, became kinsmen of the twice-born class: to them is assigned the profession of ascertaining the lunar and solar days.”

(1) Vulgarly Baraiya.
4. **Ma'hisya** is the son of a **Cshatriya**, by a woman of the **Vaiśya** tribe: his profession is musick, astronomy, and attendance on cattle.

5. **Ugra** was born of a **Sūdra** woman, by a man of the military class. His profession, according to **Menu**, is killing, or confining such animals as live in holes; but according to the **Tantra**, he is an encomiast or bard. The same origin is attributed to the **Nāpita** (1) or barber, and to the **Maudaca**, or confectioner. In the **Tantra**, the **Nāpita** is said to be born of a **Cuverina** woman, by a man of the **Patticāra** class.

6. **Carana** (2), from a **Vaiśya**, by a woman of the **Sūdra** class, is an attendant on princes or secretary. The appellation of **Cayasi'ba** (3) is, in general, considered as synonimous with **Carana**; and accordingly the **Carana** tribe commonly assumes the name of **Cāyasi'ba**; but the **Cayasi'bas** of Bengal have pretensions to be considered as true **Sūdras**, which the **Jātimāla** seems to authorise; for the origin of the **Cayasi'ba** is there mentioned, before the subject of mixed tribes is introduced, immediately after describing the **Gōpa** as a true **Sūdra**.

One named **Bhūtīdatta** was noticed for his domestick affiudity (4); therefore, the rank of **Cayasi'ba** was by **Brāhmanas** assigned to him: from him sprung three sons **Chitraṅgada**, **Chitrāse'na**, and **Chitra-gupta**; they were employed in attendance on princes.”

The **Dherma-purana** assigns the same origin to the **Tambuli** or beetle-seller, and to the **Tanlica** or Areca-seller, as to the **Carana**.

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(1) Vulg. Nāya or Nāi. (2) Vulg. Caran. (3) Vulg. Cāit. (4) Literally staying at home, (Cāit sāvitīt) whence the etymology of Cayasi'ba.
The six above enumerated are begotten in the direct order of the classes. Six are begotten in the inverse order.

7. Suta, begotten by a Cśatriya, or a woman of the priestly class; his occupation is managing horses, and driving cars; the same origin is given, in the Purāna, to the Mālācāra (1) or florist; but he sprung from the Carmacāra and Tailica classes, if the authority of the Tantra prevails.

8. Māgadhā, born of a Cśatriya girl, by a man of the commercial class, has, according to the Sāstra, the profession of travelling with merchandise; but according to the Purāna and Tantra is an encomiast. From parents of those classes sprung the Gopa (2), if the Purāna may be believed; but the Tantra describes the Gopa as a true Sūdra, and names Gopajīvi (3) a mixed class using the same profession, and springing from Tantravaya Manibandha classes.

9 and 10. Vaideha and Ayāgava; the occupation of the first, born of a Brāhmaṇa by a man of the commercial class, is waiting on women; the second, born of a Vaissya woman by a man of the servile class, has the profession of a carpenter.

11. Cśatttri or Cśatta, sprung from a servile man by a woman of the military class, is employed in killing and confining such animals as live in holes. The same origin is ascribed by the Purāna to the Carmacāra or smith, and Dāsa or mariner; the one is mentioned in the Tantra without specifying the classes from which he sprung; and the other has a different origin, according to the Sāstra and Tantra.

(1) Mālācāra
(2) Gopa
(3) Gopajīvi, Gopa

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All authorities concur in deriving the Chándala from a Súdra father and Brabmeni mother. His profession is carrying out corpses and executing criminals; and officiating in other abject employments for publick service.

A third set of Indian classes originate from the intermarriages of the first and second set: a few only have been named by Menu; and excepting the Abbira or milkman, they are not noticed by the other authorities to which I refer. But the Purána names other classes of this set.

A fourth set is derived from intercourse between the several classes of the second set: of these also few have been named by Menu; and one only of the fifth set, springing from intermarriages of the second and third set; and another of the sixth set, derived from intercourse between classes of the second and fourth set. Menu adds, to these classes, four sons of outcasts.

The Tantra enumerates many other classes, which must be placed in lower sets,* and ascribes a different origin to some of the classes in the third and fourth sets.

These differences may be readily apprehended from the comparative table annexed. To pursue a verbose comparison would be tedious and of little use, perhaps of none; for I suspect that their origin is fanciful; and except the mixed classes named by Menu, that the rest are terms for professions rather than classes; and they should be considered as denoting companies of artisans rather than distinct races. The mode, in which Améresiñha mentions the mixed classes and the professions of artisans, seems to support this conjecture.

* See the annexed rule formed by our late venerable President.
However, the Jātimāla expressly states the number of forty-two mixed classes springing from the intercourse of a man of inferior class with a woman of superior class. Though, like other mixed classes, they are included under the general denomination of Sūdra, they are considered as most abject, and most of them now experience the same contemptuous treatment as the abject mixed classes mentioned by Menu. According to the Rudrayāmala, the domestick priests of twenty of these classes are degraded. "Avoid," says the Tantra, "the touch of the Chandāla and other abject classes, and of those who eat the flesh of kine, often utter forbidden words, and perform none of the prescribed ceremonies; they are called Molēcbebba, and going to the region of Yavana have been named Yavanas."

"These seven, the Rajaca, Chermacāra, Natā, Baruēla, Caiverta, and Médabbilla, are the last tribes. Whoever associates with them, undoubtedly falls from his class; whoever bathes or drinks in wells or pools which they have caused to be made, must be purified by the five productions of kine; whoever approaches their women, is doubtless degraded from his class."

"For women of the Natā and Capāla classes, for prostitutes, and for women of the Rajaca and Napita tribes, a man should willingly make oblations, but by no means dally with them."

I may here remark, that according to the Rudra-Yamala, the Natā and Natāca are distinct, but the professions are not discriminated in that Tantra: if their distinct occupations as dancers and actors are accurately supplied, dramas are of very early date.

The Pundraca and Pataśutrācāra or feeder of silk worms and silk twister,
deserve notice; for it has been said, that silk was the produce of China solely, until the reign of the Greek Emperor Justinian; and that the laws of China jealously guarded the exclusive production. The frequent mention of silk in the most antient Sanscrit books would not fully disprove that opinion; but the mention of an Indian class, whose occupation, it is to attend silk worms, may be admitted as proof, if the antiquity of the Tantra be not questioned. I am informed, that the Tantras collectively are noticed in very antient compositions; but, as they are very numerous, they must have been composed at different periods, and the Tantra which I quote, might be thought comparatively modern. However, it may be presumed, that the Rudra-Yamala is among the most authentick, and, by a natural inference, among the most antient, since it is named in the Durgacabata, where the principal Tantras are enumerated.*

In the comparative tables, to which I have referred, the classes are named with their origin and the particular professions assigned to them. How far every person is bound, by original institutions, to adhere rigidly to the profession of his class, may merit some enquiry. Lawyers have largely discussed the texts of law concerning this subject; and some difference of opinion occurs in their writings. This, however, is not the place for entering into such disquisitions; I shall therefore briefly state what appears to be the best established opinion, as deduced from the texts of Menu, and other legal authorities.

The regular means of subsistence for a Brâhmana, are assisting to sacrifice,

* Thus enumerated, Càlí-Tantra, Māndūkā, Tàrā, Nirvâna-Tantra, Serou-sirun, Bīr-Tantra, Sing-gār-chana, Bhâta-Tantra, Uddhān and Câlicâcalpa, Bhairavi-Tantra and Bhairavâcalpa, Tâdala, Mâtri-nârâyanârâja, Mâya-Tantra, Bîr-phala, Bîr-sûrata, Samayâ-Tantra, Brahma-Yâmala-Tantra, Rudra-yâ mala-Tantra, Sarvâyâmala-Tantra, Gâyatri-Tantra, Câlicâcalpa Serou-sirun, Câlâynastrava, Tâjini-Tantra, and the Tantra Mebhânamardana. These are here universally known, oh Bhairavi greatest of souls! And many are the other Tantras uttered by Sambohu.
teaching the Védas, and receiving gifts; for a Çabhatriya, bearing arms; for a Vaishya, merchandize, attending on cattle, and agriculture; for a Súdra, servile attendance on the higher classes. The most commendable are, respectively for the four classes, teaching the Védas, defending the people, commerce, or keeping herds and flocks, and servile attendance on the learned and virtuous priests.

A Bráhmana, unable to subsist by his duties, may live by the duty of a soldier; if he cannot get a subsistence by either of those employments, he may apply to tillage and attendance on cattle, or gain a competence by traffick, avoiding certain commodities. A Çabhatriya, in distress, may subsist by all these means, but he must not have recourse to the highest functions. In reasons of distress, a further latitude is given; the practice of medicine and other learned professions, painting and other arts, work for wages, menial service, alms and usury are among the modes of subsistence allowed both to the Bráhmana and Çabhatriya. A Vaishya, unable to subsist by his own duties, may descend to the servile acts of a Súdra. And a Súdra, not finding employment by waiting on men of the higher classes, may subsist by handicrafts; principally following those mechanical occupations, as joinery and masonry, and practical arts, as painting and writing, by following which he may serve men of superior classes: and, although a man of a lower class is in general restricted from the acts of a higher class, the Súdra is expressly permitted to become a trader or a husbandman.

Besides the particular occupations assigned to each of the mixed classes, they have the alternative of following that profession, which regularly belongs to the class from which they derive their origin on the mother's side: those, at least have such an option, who are born in the direct order of the classes, as the Murduúbisbiéta, Ambashta, and others. The mixed classes are also per-
mitted to subsist by any of the duties of a Śūdra, that is, by menial service, by handicrafts, by commerce, or by agriculture.

Hence it appears, that almost every occupation, though regularly it be the profession of a particular class, is open to most other classes; and that the limitations, far from being rigorous, do in fact reserve only one peculiar profession, that of the Brāhmaṇa, which consists in teaching the Vēda and officiating at religious ceremonies.

The classes are sufficiently numerous, but the subdivisions of classes have further multiplied distinctions to an endless variety. The subordinate distinctions may be best exemplified from the Brāhmaṇa and Cāyastha, because some of the appellations, by which the different races are distinguished, will be familiar to many readers.

The Brāhmaṇas of Bengal are descended from five priests invited from Canyakubja by Ḍisura king of Gaura, who is said to have reigned about three hundred years before Christ. These were Bhāṭṭā Neraṇya of the family of Sanḍila, a son of Casyapa; Dacsha also a descendant of Casyapa; Vedagarva of the family of Vatsa Chandra of the family of Saverna, a son of Casyapa; and Śri Hershu a descendant of Bhavadvaja.

From these ancestors have branched no fewer than a hundred and fifty-six families, of which the precedence was fixed by Balla-la Sena, who reigned in the twelfth century of the Chriṣṭian era; one hundred of these families settled in Varṇendra, and fifty-six in Rara. They are now dispersed throughout Bengal, but retain the family distinctions fixed by Balla-la Sena; they are denominated from the families to which their five progenitors belonged, and are still considered as Canyakubja Brāhmaṇas.
At the period when these priests were invited by the king of Gaura, some Sāresewata Brāhmanas, and a few Vaidicas resided in Bengal. Of the Brāhma- nas of Sāresewata none are now found in Bengal; but five families of Vaidicas are extant, and are admitted to intermarry with the Brāhmanas of Rāra.

Among the Brāhmanas of Vairendra, eight families have pre-eminence, and eight hold the second rank*; among those of Rāra, six hold the first rank†.

The distinctive appellations of the several families are borne by those of the first rank, but in most of the other families they are diffused; and Serman or Sermā, the addition common to the whole tribe of Brāhmanas, is assumed. For this practice, the priests of Bengal are censured by the Brāhmanas of Mitbilā and other countries, where that title is only used on important occasions, and in religious ceremonies.

* Vā'ri'endra Brāhmanas.

Culi'na 8.


of Ca'li. of Sandya'l.


The last was admitted by election of the other seven.

Sudha Sro'tri' 8.

Casta Sro'tri' 84.

The names of these families seldom occur in common intercourse.

† Ra'ri'ya Brāhmanas.

Culi'na. 6.

Ganguli. Canjilala.


Sro'tri 50.

The names of these families seldom occur in common intercourse.
In Mitbihá, the additions are fewer, though distinct families are more numerous. No more than three surnames are in use in that district. Thácurga, Misra, and Ojhá; each appropriated in any families.

The Cáyaśf'bas of Bengal claim descent from five Cáyaśf'bas who attended the priests invited from Canyakubja. Their descendants branched into eighty-three families; and their precedence was fixed by the same prince Balla'la Se'na, who also adjusted the family rank of other classes.

In Benga and Decshina Rára, three families of Cáyaśf'bas have pre-eminence, eight hold the second rank*.

The Cáyaśf'bas of inferior rank generally assume the addition of Dája common to the tribe of Sádras, in the same manner as other classes have similar titles common to the whole tribe. The regular addition to the name of Cfhratriya is Verman; to that of a Vaishya, Gupta; but the general title of Déva is commonly assumed; and with a feminine termination, is also borne by women of other tribes.

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**CA'YAST'HAS OF DECSHINA RÁRA AND BENGA.**

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<td>Vulg. Bo'se.</td>
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<tr>
<td>Sanmaulica 8</td>
<td></td>
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<td>Da'.</td>
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<td>Se'na.</td>
<td>Sinha.</td>
<td>Da'sa.</td>
</tr>
<tr>
<td>Maulica 72</td>
<td></td>
<td>Guha.</td>
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<td>Gana.</td>
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<tr>
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<td>Put.</td>
<td>Pa'la.</td>
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<td>Sya'ma, &amp;c.</td>
<td>Rudra.</td>
<td>Aditya.</td>
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<td>Te'ja, &amp;c.</td>
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*The others are omitted for the sake of brevity; their names seldom occur in common intercourse.*
The distinctions of families are important in regulating intermarriages. Genealogy is made a particular study; and the greatest attention is given to regulate the marriages according to established rules: particularly in the first marriage of the eldest son. The principal points to be observed are not to marry within the prohibited degrees; or in a family known by its name to be of the same primitive stock; nor in a family of inferior rank; nor even in an inferior branch of an equal family: for, within some families, gradations are established. Thus, among the Cuhina of the Cāyast'har, the rank has been counted from thirteen degrees; and in every generation, so long as the marriage has been properly ascertained, one degree has been added to the rank. But should a marriage be contracted in a family of a lower degree, an entire forfeiture of such rank would be incurred.

The subject is intricate; but any person desirous of acquiring information upon it, may refer to the writings of Gaurtácas or genealogists, whose compositions are in the provincial dialect, and are known by the name of Culaśh.
Some Account of the Sculptures at Mahabalipoorum, usually called the Seven Pagodas.—By J. Goldingham, Esq.

These curious remains of antiquity situate near the sea, are about thirty-eight English miles southerly from Madras, a distant view presents merely a rock, which on a near approach is found deserving of particular examination; the attention passing over the smaller objects, is first arrested by a Hindu pagoda, covered with sculpture, and hewn from a single mass of rock; being about twenty-six feet in height, nearly as long, and about half as broad, within is the Lingam, and a long inscription on the wall in characters unknown.

Near this structure, the surface of the rock, about ninety feet in extent, and thirty in height, is covered with figures in bas-relief; a gigantic figure of the god Krishna is the most conspicuous, with Arjuna his favorite in the Hindu attitude of prayer, but so void of flesh, as to present more the appearance of a skeleton, than the representation of a living person; below is a venerable figure said to be the father of Arjuna, both figures proving the sculptor possessed no inconsiderable skill. Here are the representations of several animals, and of one which the Brāhmens name Singam, or lion, but by no means a likeness of that animal, wanting the peculiar characteris-
tic, the mane; something intended to represent this is indeed visible, which has more the effect of spots; it appears evident, the sculptor was by no means so well acquainted with the figure of the lion as with that of the elephant and monkey, both being well represented in this group. This scene I understand is taken from the Mababarar, and exhibits the principal persons, whose actions are celebrated in that work.

Oposite and surrounded by a wall of stone, are pagodas of brick, said to be of great antiquity. Adjoining is an excavation in the rock, the mafy roof seemingly supported by columns, not unlike those in the celebrated cavern in the island of Elephanta, but have been left unfinished; this was probably intended as a place of worship; a few paces onward, is another and a more spacious excavation, now used, and I suppose originally intended, as a shelter for travellers; a scene of sculpture fronts the entrance, said to represent CHRISTHIN attending the herds of ANANDA, one of the group represents a man diverting an infant by playing on a flute, and holding the instrument as we do; a gigantick figure of the god, with the Gopis, and several good representations of nature are observed; the columns supporting the roof are of different orders, the base of one is the figure of a Sphynx; on the pavement is an inscription (see inscrip.). Near, is the almost deserted village which still retains the ancient name Mababalipoorum, the few remaining BRAB-MENS visit the traveller, and conduct him over the rock.

In the way up the rock, a prodigious circular stone is passed under, so placed by nature on a smooth and sloping surface, that you are in dread of its crushing you before you clear it, the diameter of this stone is twenty-seven feet. The top of the rock is strewed with fragments of bricks, the remains as you are informed of a palace anciently standing on this site; a rectangular polished
slab, about ten feet in length, the figure of a Singam couchant at the south end, is shown you as the couch of the Dherma rajah; a short way further, the bath used by the females of the palace is pointed out; a tale I suspect fabricated by the Brâhmins to amuse the traveller; that some of their own cast had chosen this spot, retired among rocks, and difficult of access, to reside in, and that the bath, as it is called, which is only a rough stone hollowed, was their reservoir for water, would have an air of probability: the couch seems to have been cut from a stone accidentally placed in its present situation, and never to have made a part of the internal furniture of a building; the Singam, if intended as a lion, is equally imperfect with the figures of the same animal before mentioned.

Descending over immense beds of stone, you arrive at a spacious excavation, a temple dedicated to Śiva, who is represented in the middle compartment, of a large stature and with four arms; the left foot rests on a bull couchant; a small figure of Brahma on the right hand, another of Vishnu on the left, where also the figure of his goddess Parvati is offered; at one end of the temple, is a gigantic figure of Vishnu, sleeping on an enormous Cobra de Capella, with several heads, and so disposed as to form a canopy over the head of the god; at the opposite end is the goddess Śiva, with eight arms, mounted on a Singam, opposed to her is a gigantic figure with a buffalo's head and human body, between these is a human figure suspended with the head downwards; the goddess is represented with several warlike weapons, and some armed dwarf-attendants, while the monster is armed with a club: in the character of Durga, or protector of the virtuous, the goddess is rescuing from the Yem'rajah (the figure with the buffalo's head), the suspended figure fallen improperly into his hands; the figure and action of the goddess are executed in a masterly and spirited style;
over this temple at a considerable elevation is a smaller wrought from a single mass of stone; here is seen a slab similar to the Dherma rajah's couch; adjoining is a temple in the rough, and a large mass of rock, the upper part roughly fashioned for a pagoda, if a conclusion may be drawn from these unfinished works, an uncommon and astonishing perseverance was exerted in finishing the structures here, and the more so, from the stone being a species of granite, and extremely hard.

The village contains but few houses, mostly inhabited by Brāhmens, the number of whom has however decreased of late, owing to a want of the means of subsisting; the remains of several stone edifices are seen here, and a large tank lined with steps of stone; a canopy for the pagoda attracts the attention as by no means wanting in magnificence or elegance; it is supported by four columns, with base and capital, about twenty-seven feet in height, the shaft tapering regularly upwards, is composed of a single stone, though not round, but sixteen-sided, measuring at bottom about five and a half feet.

East of the village and washed by the sea, which perhaps would have entirely demolished it before now, but for a defence of large stones in front, is a pagoda of stone, and containing the Lingam was dedicated to Śiva; besides the usual figures within, one of a gigantic stature is observed stretched on the ground, and represented as secured in that position, this the Brāhmens tell you is designed for a rajah who was thus secured by Viṣṇu; probably alluding to a prince of the Viṣṇu cast having conquered the country and taken its prince. The surf here breaks far out over, as the Brāhmens inform you, the ruins of the city, which was incredibly large and magnificent, many of the masses of stone near the shore, appear to have been wrought. A Brāhmen about fifty years of age, native of the place, whom I have had an
opportunity of conversing with, since my arrival at Madras, informed me, his grandfather had frequently mentioned having seen the gilt tops of five pagodas in the surf, no longer visible. In the account of this place by Mr. William Chambers, in the first volume of the *Asiatick Researches*, we find mention of a brick pagoda, dedicated to Śrīva, and washed by the sea; this is no longer visible; but as the Brāhmens have no recollection of such a structure, and as Mr. Chambers wrote from memory, I am inclined to think, the pagoda of stone mentioned above, to be the one he means, however it appears from good authorities, that the sea on this part of the coast is encroaching by very slow, but no less certain steps, and will perhaps in a lapse of ages entirely hide these magnificent ruins.

About a mile to the southward, are other structures of stone, of the same order as those north, but having been left unfinished, at first sight appear different: the southernmost of these is about forty feet in height, twenty-nine in breadth, and nearly the same in length, hewn from a single mass; the outside is covered with sculpture (for an account of which see inscriptions); the next, is also cut from one mass of stone being in length about forty-nine feet, in breadth and height twenty-five, and is rent through the middle from the top to the bottom; a large fragment from one corner is observed on the ground, no account is preserved of the powerful cause which produced this destructive effect: beside these, are three smaller structures of stone, here is also the Singam or lion, very large, but except in size, I can observe no difference from the figures of the same animal northerly; near the Singam, is an elephant of stone about nine feet in height, and large in proportion; here, indeed, we observe the true figure and character of the animal.
The Brāhmen before mentioned informed me, that their Puranas contained no account of any of the structures here described, except the Stone Pagodas near the sea, and the pagodas of brick at the village, built by the Dherma rajas, and his brothers, he, however, gave me the following traditional account. That a northern Prince (perhaps one of the conquerors) about one thousand years ago, was desirous of having a great work executed; but the Hindu sculptors and masons refused to execute it on the terms he offered; attempting force I suppose, they in number about four thousand fled with their effects from his country hither, where they resided four or five years, and in this interval executed these magnificent works, the Prince at length discovering them, prevailed on them to return, which they did, leaving the works unfinished as they appear at present.

To those who know the nature of these people, this account will not appear improbable, at present we sometimes hear of all the individuals of a particular branch of trade deserting their homes, because the hand of power has treated them somewhat roughly and we observe like circumstances continually in miniature. Why the Brāhmens resident on the spot keep this account secret I cannot determine, but am led to suppose they have an idea, the more they can envelop the place in mystery, the more people will be tempted to visit and investigate, by which means they profit considerably.

The difference of style in the architecture of these structures and those on the coast hereabouts (with exception to the pagodas of brick at the village, and that of stone near the sea, both mentioned in the Puranas and which are not different,) tends to prove that the artists were not of this country, and the resemblance of some of the figures and pillars to those in the Elephanta cave, seems to indicate they were from the northward; the fragments
of bricks at the top of the rock, may be the remains of habitations raised in this place of security by the fugitives in question; some of the inscriptions however, all of which were taken by myself with much care, may throw further light on this subject.

**INSCRIPTIONS at Mahabalipoorum, on the lower division of the Southern Structure, and the Eastern Face.**

Above a female figure, with one breast, (as at the cave in Elephanta island); four arms are observed, in one of the hands a battle axe, a snake coiled up on the right side.

Above a male figure, with four arms.

Above a male figure with four arms; a battle axe in one of the hands.

K. 2
Southern Front.

Above a male figure with four arms.

Above a male figure.

On the middle division Eastern Face.

Above a male.

Above a male, bearing a weapon of war on the left shoulder.
Northern Face.

Above a male with four arms, leaning on a bull, the hair plaited and rolled about the head; a string across the left shoulder, as the Brâhmen's string of the present day.

Above two figures, male and female; the former has four arms, and the string as above, is leaning on the latter who seems to stoop from the weight; the head of the male is covered with a high cap, while the hair of the female is in the same form as that of the female figures at Elephanta.

Above two figures male and female; the former has four arms, and the string.
Above a male figure with four arms, and the Brāhmaṇical string.

Southern Face.

Above a male figure with four arms.

Above a male figure with four arms, leaning on a female, seeming to stoop under the weight.

Above a male with four arms, a scepter appears in one hand. This inscription being very difficult to come at, is perhaps not quite correct.
881

Above a male figure with four arms.

West Front.

Over a male; the string over the left shoulder, and a warlike weapon on the right.
Another figure on this face, but no inscription above it.

On the upper division.

Each front of this division is ornamented with figures different in some respects from those below, all however of the same family.
On the Eastern front is a male figure, (two arms only) he has two strings or belts one crossing the other over the shoulders.
Over him is the following inscription, the only one on this division.


The characters of this inscription bear a strong resemblance to those of the inscription in the stone pagoda near the village, mentioned in the first part of the account of the place.


This inscription is on the pavement of the choultry near the village, very roughly cut, and apparently by different artists from those who cut the former.
THE
Hindoostance Horal Diagram.
V.

ACCOUNT of the HINDUSTANEE HOROMETRY.

BY JOHN GILCHRIST, ESQ.

The inhabitants of Hindustan commonly reckon and divide time, in the following manner, which exhibits a horography so imperfect however, that its inaccuracy, can only be equalled by the people's general ignorance of such a division, that with all its imperfections and absurdities, must nevertheless answer the various purposes of many millions in this country; I shall therefore explain and illustrate so complex and difficult a subject, to the best of my ability and information from the natives, without presuming in the discussion here to encroach on the province of the chronologist or astronomer, who may yet investigate this matter with higher views, while my aim, is in the mean time, perhaps not less usefully confined, to ordinary cases and capacities entirely.

60 Til or Unopul, (a sub-division of time, for which we have no relative term but thibds, as the series next to *seconds*) are one Bipul.

On this principle, one minute of ours, being equal to 24 pah, and one moment to 24 bipul; it is neither easy nor necessary to trace and mark the coincidence of such diminutives any farther; I may, however add, what the Furching Kardane contains, relative to these hourly divisions, as follows:—

4 Rentu, constitute 1 pulak; 16 pulaks, 1 kof, ba; 30 kof, has, 1 kula; 30 kulas, 1 gahun; 60 gahun, 1 dund; 2 dunds, 1 g. bha; 30 dunds, 1 din; 60 dunds, din o rat. From this work it is evident, that there exist various modes of dividing time in India, because a little farther on, the author states the following also, viz.

60 Zurr, 1 Dun; 60 dums, 1 Lumbu, &c. which as well as the many local modes in use, it would be superfluous to enumerate, I shall therefore attend only to the former, so far as they agree with our text. The kof, ba is equal to 4 tilis, the kula, or two bipuls, the gahun and pul are the same, so are the dund and (kuchee) g. bhae, but the learner must advert to the g. bhae in this note, being pachets, or two of the former, as this distinction is frequently used, when they allot only four g. bhaes to the pubur, and pachet or double is always understood.
60 Bipul, (which corresponds progressively only, with our seconds or moments) one pul.

60 Pul, (correlative as above, in this sexagesimal scale with our minutes or primes) one g.buree; and 60 g.burees, (called also d.und, which we may here translate bourn) constitute our twenty-four hours, or one whole day; divided into 4 pubur din, diurnal watches; 4 pubur rat, nocturnal watches.

During the equinoctial months, there are just 30 g.burees in the day, and 30 also in the night; each g.buree properly occupying a space, at all times, exactly equal to 24 of our minutes; because 60 g.burees of 24 English minutes each, are of course 24 English hours of 60 English minutes each. For nations under or near the equator, this horological arrangement will prove convenient enough, and may yet be adduced as one argument for ascertaining, with more precision, the country whence the Hindus originally came, provided they are, as is generally supposed, the inventors of the system under consideration here. The farther we recede from the line, the more difficult and troublesome will the present plan appear; and as in this country, the artificial day commences with the dawn, and closes just after sunset, it becomes necessary to make the puburs or watches contract, and expand occasionally, in proportion to the length of the day, and the consequent shortness of the night, by admitting a greater or smaller number of g.burees, into these grand diurnal and nocturnal divisions alternately, and according to the sun's pro-

* Lamba and dum, perhaps answer to our minutes and seconds, as the constituent parts of the hour, 24 of which are said to constitute a natural day, and are reckoned from 1 o'clock after midday regularly on through the night, also up to 24 o'clock the next noon, as formerly was the case and which is still observed in some places on the continent, or like ours from 1 afternoon to 12 at midnight, and again from 1 after midnight to 12 o'clock the next noon. Whether those few who can talk of the fahmt at all, have learnt this entirely from us or not, is a point rather dubious to me, but I suspect they have it from the Arabians, who acquired this with other sciences from the Greeks.
gress to or from the tropicks. The summer solstitial day, will therefore consist of 34 g. burrees, and the night of 26 only, or vice versa; but what is most singular in the Indian horometry, their g. burrees are unequally distributed among the day and night watches; the former varying from 6 to 9 in the latter, which are thus prevented from any definite coincidence with our time, except about the equinoctial periods only, when one pubur nearly corresponds to 3 English hours. I say nearly, because even then, the four middle watches have only 7 g. burrees, or 2 hours 48 minutes of ours, while the extremes have 8 g. burrees a piece, or 24 English minutes more than the others, and consequently agree with our 3 hours 12 minutes; while at other times, the pubur is equal to no less than 3 hours 36 minutes; a fact, which I believe, has never yet been stated properly, though many writers have already given their sentiments to the public on the subject before us, but they were probably misled by saying 4-3s. are 12 hours for the day, and the same for the night, without considering, the sexagesimal division we must first make of the whole 24 hours or 8 watches, 4 of which during both equinoxes having 7 g. burrees only give 28, and the other 4 extreme watches consisting at these periods also of 8 g. burrees each, form 32—60 in all; not 64 g. burrees*, as some calculators have made it, who were not aware that the g. burree or dund, never can be more nor less than 24 of our minutes, as I have proved above.

* One of those vulgar errors, originating in the crude and superficial notions which none take the trouble to examine or correct, and being thus implicitly adopted, are not so easily eradicated; nay this very idea of sixty-four may be supported from an old dictum.

At ub pubur chaun sut g. burree, k burree pokaroon pee.
Jee niks; jo pee mile; nikus ja,e yih jee.

But I answer, the Bard seems a sorry astronomer, or he would not have followed, the erroneous opinion of their being 8 g. burrees in each of the eight puburs, and 64 in the natural day; though this prevails among the illiterate Indus uncontroverted to the present hour, and were I not to expose it here, might continue a stumbling block for ever, and in this random way have we also imbibed the doctrine that 4 puburs of three hours each, are twelve of course, and 8 of these must give 24. A brief but truly incorrect mode of settling the account.

L 2
by considering that 24 multiplied by 60, or 60 by 24, must be alike, and which I shall make still more evident hereafter. In judicial and military proceedings, the present enquiry may sometimes assume considerable importance, and as an acquaintance with it may also facilitate other matters, I have endeavored to exhibit the Indian horometrical system contrasted with our own, upon a dial or horal diagram calculated for one natural day of 24 hours, and adjusted to both the equinoctial and solstitial seasons comprising four months of the twelve, that these may serve as some basis or data for a general coincidence of the whole, at any intermediate period, until men who are better qualified than the writer of this paper to execute such a task, with precision, condescend to undertake it for us. He is even sanguine enough to hope that some able artist in Europe, may yet be induced to construct the dials of clocks, &c. for the Indian market, on the principles delineated here, and in Persian figures also; but we must now proceed to an explanation of the horal diagram, adapted to the meridian of Patna, the central parts of the Benares Zemindarry, and the middle latitudes of Hindustan. The two exterior rings of this circle, contain the complete 24 English hours, noted by the Roman letters, I. II. III. IV. &c. and the minutes are marked in figures 24, 48, 12, 36, 60, agreeably to the sexagesimal scale, whereon the equidistant intersections of this dial are founded, the meridional semicircles of which, represent our semidian watch plates, and for obvious reasons with the modern horary repetition; see the note in page 82.

I have distinguished the eight (4 diurnal and 4 nocturnal) watches or puburs from I. to IV, by Roman letters also, with the obime (gujur) or number of bells struck at each, in large figures below the pubur letter to which they belong, and in the same reiterated way, but these instead of ranging from the meridian, like the English hours, commence with the equatorial and
tropical lines alternately, as their situation and spaces must regularly accord with the rising and setting of the sun, at the vernal and autumnal equinoxes, as also at the summer and winter solstices. The days then differ in length alternately from 34 to 26 g,burees, as noted by the chime figures of every watch, all of which will be more evident from the mode of inserting them, and the manner that the plate has been shaded, to illustrate these circumstances fully: II. pubur however, never varies, and being upon the meridional line, it of course constantly falls in with our XII. day and night. The fourth ring from the circumference, shows the g,burees, when the day is longest running with the sun to the top, and from this to VI. P. M. for these subdivisions of the day, and in the same manner by the bottom onwards for those of the night, throughout these concatenated circular figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 2, &c. q. v. in the plate. Still more interiorly appear the equinoctial g,burees, and on the same principles exactly; within these come the winter solstitial g,burees so clearly marked, as to require no further elucidation here, except that in the three series of convergent figures now enumerated here, the reader will recollect when he comes to the highest number of g,burees in any pubur, to trace the latter, and its chime or number of bells out, by the g,buree chord. For instance, when the days are shortest, begin 48 minutes after VI. A. M. and follow the coincident line inward to the centre, till you reach 9, and 34 for the closing g,buree and gijur of the night, thence go round in succession upwards with the day g,burees 1, 2, 3, 4, 5, 6, 7, the chord of which last terminates 36 minutes after IX. and has 7 upon it for 7 bells, and 1. for ek pubur din, the first watch of the day. In this way the whole may be compared with our time; allowing not only for the different meridians in this country, but for the several intermediate periods, and the difficulty of precisely ascertaining the real rising of the sun, &c. Nearest the centre, I have
inferred the prime divisions or puls of every g,buree, viz. 60; 50—15, 30, 45; 60, in two spaces only, because these are the invariable constituent minute parts of the g,buree, at all seasons of the year, and consequently apply (though omitted to prevent confusion) as in the plate, to every one of the horal sections delineated there, into which the whole dial is equally divided. The intelligent reader may now consult the diagram itself, and I trust with much satisfaction, as it in fact was the first thing that gave me any accurate knowledge of the arrangement and coincidence of the Hindu stance with the English hours, or of the rules on which their economy is founded. I certainly might have traced out, and inferred the whole, for a complete year, had not the apprehension of making the figure too intricate, and crowded for general utility, determined me to confine it to the elucidation of four months only; especially as the real and artificial variations can be learned from an Indian astronomer by those who may wish to be minutely accurate on this subject whence every one will have it in his own power to note the exact horal coincidences at any given period, by extending the present scheme only a little farther, because the natives never add nor subtract a g,buree, until the 60 puls of which it consists, are accumulated, but with their usual apathy continue to distribute and reduce the constant encreasing and decreasing temporal fractions among or from the several puburs with little or no precision: Nay they often have recourse to the last of the diurnal or nocturnal subdivisions for this purpose, when the grand horologist himself is about to inform them, that now is the time to wait for the whole of their lost minutes, before they proceed on a new score, at the risk perhaps of making the closing g,buree of the day or night, as long as any two of the rest. On the other hand, when they have previously galloped too fast with time, the same ill fated hindmost g,buree may be reduced to a mere shadow, that the G,buree,alee may found the exact number, without regard-
ing its disproportion to the rest, in the same puhur at all. So much this, and
similar freedoms have been and can be taken with time in Hindustan, that
we may frequently hear the following story: While the fast of Rumuzan
lasts, it is not lawful for the Mussulmans, to eat or drink in the day, though
at night, they not only do both, but can uninterruptedly enjoy its other
pleasures also, and upon such an occasion, a certain Omra, sent to enquire of
his G.buree,alee, if it was still night, to which the complaisant bellman re-
plied, in the true style of oriental adulation: "Rat to bo chookee mugut
peer moorbid ke swaste do g.buree myn luga rukhee," "Night is past to be
sure, but I have yet two hours in reserve for his worship's conveniency."
The apparatus with which the hours are measured, and announced, consists
of a shallow bell metal pan, named from its office G.buree,al, and suspend-
ed so as to be easily struck, with a wooden mallet by the g.buree,alee, who
thus strikes the g.burees as they pass, and which he learns from an empty
thin brass cup (kutoree) perforated at bottom, and placed on the surface of
water, in a large vessel, where nothing can disturb it, while the water gra-
dually fills the cup, and sinks it in the space of one g.buree, to which this
hour cup or kutoree has previously been adjusted astronomically by an astro-
labe, used for such purposes in India. These kutorees are now and then
found with their requisite divisions, and subdivisions, very scienti-
fically marked in Sanscrit characters, and may have their uses for the
more difficult and abstruse operations of the mathematician or astro-
loger, but for the ordinary occurrences of life, I believe the simple
rude horology described above, suffices (perhaps divided into the fourths of
of a g.buree) the Asiatics in general, who by the bye, are often wonderfully
uniformed, respecting every thing of this kind. The whole indeed appears,
even to the better sorts of people, so perplexing and inconvenient, that they
are very ready to adopt our divisions of time when their residence among or
near us puts this in their power: whence we may in great measure account for the obscurity and confusion, in which this subject has hitherto remained among the Indians themselves, and the consequent glimmering light, that preceding writers have yet afforded in this branch of oriental knowledge, which really seems to have been slurred over, as a drudgery entirely beneath their notice and enquiry. The first $g_{,}buree$ of the first $pubur$, is so far sacred to the Emperor of Hindustan, that his $G_{,}buree_{,}alee$ alone, strikes once for it, the second $g_{,}buree$ is known by two blows on the $G_{,}buree_{,}al$, and so on, one stroke is added for every $g_{,}buree$ to the highest, which (assuming the equinoctial periods for this statement) is eight, announced by eight distinct blows for the past $g_{,}burees$, after which with a slight intermission, the $gujur$ of eight bells is struck or rung, as noted in the diagram by the chime figure 8, and then one hollow sound publishes the first or $ek$ $pubur$ $din$ or rat, as this may happen, and for which consult the plate. In one $g_{,}buree$, or 24 of our minutes after this, the same reiteration takes place, but here stops at the seventh or meridional $g_{,}buree$, and is then followed with its $gujur$, or chime of 15; of which, 8 are for the first watch, and 7 for the second or $do$ $pubur$, now proclaimed by two full distinct sounds. We next proceed with 7 more $g_{,}burees$, exactly noting them as before, and ringing the $gujur$ of 22 strokes after the seventh $g_{,}buree$ or $teen$ $pubur$, also known by three loud sounds. The fourth $pubur$, has like the first 8 $g_{,}burees$, and differs in no other respect than having a $gujur$ of 30, after the equatorial $g_{,}buree$ has been struck, the whole being closed by four loud blows on the $g_{,}buree_{,}al$, for $char$ $pubur$ $din$ or rat; the repetition being the same, day and night, during the equinoctial periods, which I have here given, merely as an example more easy for the scholar’s comprehension at first than the rest. The extreme $gujurs$ may be properly termed the evening and morning bell, and in fact the word seems much restricted to these, as $pubur$ alone is more
commonly used for the middle *chimes*, than *gujur* appears to be. Six or eight people are required to attend the establishment of a *g.buree*, four through the day, and as many at night, so that none but wealthy men or grandees can afford to support one as a necessary appendage of their consequence and rank; which is convenient enough for the other inhabitants, who would have nothing of this sort to consult, as (those being excepted which are attached to their armies,) I imagine there are no other publick (*g.burees*) clocks in all *India*.
VI.

On Indian Weights and Measures.

By H. T. Colebrooke, Esq.

Commentators reconcile the contradictions of ancient authors on the subject of weights and measures by a reference to different standards. To understand their explanations I have been led to some inquiries, the result of which I shall state concisely to alleviate the labour of others, who may seek information on the same subject; omitting, however, such measures as are of very limited use.

Most of the authorities, which I shall quote, have not been consulted by myself, but are assumed from the citations in a work of Gopala Bhatta on numbers and quantities, which is entitled Sanc'hyaparimana.

Menu, Ya'jnyawaleya and Narada trace all weights from the least visible quantity, which they concur in naming trasarénu, and describing as "the very small mote, which may be discerned in a sunbeam passing through a lattice." Writers on medicine proceed a step further and affirm, that a trasarénu contains thirty paránunus or atoms; they describe the trasarénu in words of the same import with the definition given by Menu; and they furnish another name for it, vasți. According to them, eighty-six vashti make one marichi, or sensible portion of light.

M 2
The legislators above named proceed from the trasarēnu, as follows:

- 8 trasarēnus = 1 līsba, or minute poppy seed.
- 3 līsbas = 1 rāja ferśbapa, or black mustard seed.
- 3 rāja ferśbapas = 1 gau-ra ferśbapa, or white mustard seed.
- 6 guara ferśbapas = 1 yava, or middle sized barley corn.
- 3 yavas = 1 criśbala, or seed of the gunjā.

This weight is the lowest denomination in general use, and commonly known by the name of retti corrupted from retticā*, which, as well as rāčiā denotes the red seed, as criśbala indicates the black seed of the gunjā creeper. Each retti, used by jewellers, is equal to \( \frac{1}{4} \) of a carat. The seeds themselves have been ascertained by Sir William Jones, from the average of numerous trials, at \( 1\frac{1}{2} \) grain. But fictitious rettis in common use should be double of the gunjā seed; however, they weigh less than two grains and a quarter. For the ficca weight contains 179\(\frac{3}{4} \) grains nearly; the māśba 17\(\frac{1}{2} \) nearly; the retti 2\(\frac{3}{2} \) nearly.

Writers on medicine trace this weight from the smallest sensible quantity, in another order.

- 30 paramānus, or atoms = 1 trasarēnu, or vanśi.
- 86 vanśis = 1 maricbi, or sensible quantity of light.
- 6 maricbis = 1 rājicā, or black mustard seed.
- 3 rājicās = 1 ferśbapa, or white mustard seed.
- 8 ferśbapas = 1 yava, or barley corn.
- 4 yavas = 1 gunjā or račiā.

* Afsatek Researcher.—vol. 2, page 154.
WEIGHTS AND MEASURES.

A retticā is also said to be equal in weight to four grains of rice in the husk; and Gopa'la Bhatta' affirms, that one seed of the gunjā, according to writers on astronomy, is equal to two large barley-corns. Notwithstanding this apparent uncertainty in the comparison of a seed of the gunjā to other productions of nature, the weight of a retticē is well determined by practice, and is the common medium of comparison for other weights. These I shall now state on the authority of Menu, Ya'jnyawāleya and Na'reda.

WEIGHTS OF GOLD.

\[5 \text{ cṛśīnālas or račticās} = 1 \text{ māśba, māśhaca, or mēśkica.}\]
\[16 \text{ māshas} = 1 \text{ cārshā, aēśha, tōlāca, or swernas.}\]
\[4 \text{ cārshas or sūvernas} = 1 \text{ pāḷa (the same weight which is also denominated nēśhca).}\]
\[10 \text{ pālas} = 1 \text{ dbarana of gold.}\]

Ya'jnyawāleya adds, that five sūvernas make one pāḷa (of gold) according to some authorities.

WEIGHTS OF SILVER.

\[2 \text{ račticās, or seeds of the gunjā} = 1 \text{ māśhaca of silver.}\]
\[16 \text{ māśhacas} = 1 \text{ dbarana of silver, or purana.}\]
\[10 \text{ dbaranas of silver} = 1 \text{ sataṃana or pala of silver.}\]

But a cārshā or eighty račticās of copper is called a pana or cārsbēpema.

Commentators differ on the application of the several terms. Some consider cṛśīnāla as a term appropriated to the quantity of one račticā of gold; but Cullu'ca Bhatta' thinks the sūverna only peculiar to gold, for which metal it is also a name. A pana or cārsbēpema is a measure of silver.
as well as of copper. There is a further diversity in the application of the terms; for they are used to describe other weights. Na’reda says, a māśba may also be considered as the twentieth of a cārobāpana; and Vrihaspati describes it as the twentieth part of the pala. Hence we have no less than four māśbas: one māśba of five raśicás; another, of four raśicás (according to Na’reda); a third of sixteen raśicás (according to Vrihaspati); and a fourth (the māśba of silver) consisting of two raśicás; not to notice the māśba used by the medical tribe, and consisting of ten, or, according to some authorities, of twelve raśicás, which may be the same as the jeweller’s māśba of six double rettis. To these I do not add the māśba of eight raśicás, because it has been explained, as measured by eight silver retti weights, each twice as heavy as the seed.

Yet as a practical denomination it must be noticed. Eight such rettis make one māśba; but twelve māśbas compose one tōla. This tōla is no where suggested by the Hindu legislators. Allowing for a difference in the retti, it is double the weight of the legal tōla, or 210 grains instead of 105 grains.

A nisbca, as synonymous with pala, consists of five suvernas, according to some authors, it is also a denomination for the quantity of hundred and fifty suvernas. Other large denominations are noticed in dictionaries.

108 suvernas, or tölacas of gold, constitute an urubhāśana, pala, or dināra.
100 pala, or nisbca, make one tula; 20 tulas or 2000 pala; one bhāra; and 10 bhāra, one acbita.
200 pala or nisbcas, constitute one bhāra.

According to Dānayogiswara, the tenth of a bhāra is called ad’bhāra, which is consequently synonymous with bāra, as a term for a specific quantity of gold.
WEIGHTS AND MEASURES.

Go'pá la Bhatta also states other weights, without mentioning by what classes they are used. I suspect an error in the statement, because it reduces the mása to a very low denomination; and I suppose it to be the jeweller’s weight.

6 rájicas (raśicás) = 1 mása, kéma or vánaca.
4 vánacas = 1 sala, dharana, or tanca.
2 tancas = 1 cóna.
2 cónas = 1 carda.

Probably it should be raśicás instead of rájicas, which would nearly correspond with the weights subjoined, giving twenty-four retticas for one dharana in both statements. It also corresponds with the tables in the Ayén Acberi (vol. 3, p. 94,) where a tânc of twenty-four rettis, fixed at ten barley-corns to the retti, contains two hundred and forty barley corns; and a mása of eight rettis, at seven and a half barley corns each, contains sixty rettis; consequently four másbas are equal to one tanca, as in the preceding table; and six jeweller’s rettis are equal to eight double rettis as used by goldsmiths.

The same author (Go’pá la Bhatta') observes, that weights are thus stated in astronomical books:

2 large barley corns = 1 feed of the gunjâ.
3 gunjâs = 1 balla.
8 ballas = 1 dbarana.
2 dbarana = 1 alaca.
1000 alaca = 1 dbatâca.

The tale of shells, compared to weight of silver, may be taken on the authority of the Lâlavatî.
20. capardacas, shells, or cowries = 1 cäcini.
4. cäcini = 1 pana, cárshápana, or carśbica.
16. pana (i.e. 1 purána of shells) = 1 bherma [of silver].
16 bhermas = 1 nisbca [of silver].

It may be inferred, that one shell is valued at a one ractica of copper; one pana of shells, at one pana of copper; and sixty-four panas, at one tölaca of silver, which is equal in weight to one pana of copper. And it seems remarkable, that the comparative value of silver, copper and shells is nearly the same at this time, as it was in the days of Bhäścara.

On the measures of grain Göpä'la Bhatta' quotes the authority of several Puránas.

VARA'HA purána: 1 mussi or handful = 1 pala.
2. palas = 1 präśriti.
8 mussis = 1 cunbi.
8 cunbis = 1 pusecala.
4. pusecalas = 1 d'd'haça.
4. d'd'hacás = 1 dröna.

BHAWISHYA purána: 2 palas = 1 präśriti.
2. präśritis = 1 cudava.
4. cudavas = 1 präśtha.
4. präśthas = 1 d'd'haça.
4. d'd'hacás = 1 dröna.
2. drönas = 1 cumb'ha or fūrpa.
16 drönas = 1 c'hārī, or fārī.

* The comparative value of silver and copper was the same in the reign of Acañu. For the döm, weighing five räca or twenty mäbhar of copper, was valued at the fortieth part of the jélīli rüpiya weighing twelve mäbhar and a half of pure silver; whence we have again the proportion of sixty-four to one.
WEIGHTS AND MEASURES.

Padme purâna:

4 palas = 1 cudava.
4 cudavas = 1 pras'ba.
4 pras'bas = 1 ãd'haca.
16 ãd'hacases = 1 drôna.
20 drônas = 1 cumb'ba.
10 cumb'bas = 1 bâba, or load.

Scanda purâna:

2 palas = 1 prasriti.
2 prasritis = 1 cudava.
4 cudavas = 1 pras'ba.
4 pras'bas = 1 ãd'haca.
4 ãd'hacases = 1 drôna.
20 drônas = 1 cumb'ba, according to some.
20 drônas = 1 cumb'ba, according to others.

From these may be formed two tables. The first coincides with the texts of the Varâha purâna, and is preferred by Raghunandana; the second, formed on the concurrent authority of the Bhavishya, Padme, and Scanda purânas, is adopted in the Calpateru, rejecting however the cumb'ba of two drônas, and making the pala equal to the weight of three tólacas and a half.

Table I.

8 mushtis, or handfuls = 8 palas = 4 prasritis = 1 cunchi.
8 cunchis = 1 puscalas.
4 puscalas = 1 ãd'haca.
4 ãd'hacases = 1 drôna.
20 drônas = 1 cumb'ha.
### TABLE II.

| 4 pālas = 2 pṛasṛiti = 1 cudava, or sēticā. | 14 tōlas. |
| 4 cudavas = 1 pṛast'ha. | 56 — |
| 4 pṛast'has = 1 ṛd'bac. | 224 — |
| 4 ṛd'bacas = 1 ḍrōna. | 896 — |
| 20 dōnas = 1½ c'hāris = 1 cumb'ha. | 17,920 — |
| 10 cumb'bas = 1 bāba, | 1,79,200 — |

But some make two drōnas equal to one cumb'ha.

Would it be unreasonable to derive the English comb of four bushels from the cumb'ha of the Hindus? The c'hāri subsequently described contains 5,832 cubic inches, if the cubit be taken at eighteen inches. It would consequently be equal to two bushels, two pecks, one gallon and two thirds; and the cumb'ha, equal to one c'bārī and a quarter, will contain three bushels and three gallons nearly. According to Lācshmiḍhera's valuation of the pala at three tōlacas and a half, the c'bārī weighs 14,336 tōlacas or 215 lb., avoirdupois nearly, and the cumb'ha 17,920 tōlacas or 268 lb., which corresponds nearly to the weight of a comb of good wheat: and a bāba will be nearly equal to a wry or a ton in freight.

The name of Sēticā, for the fourth of a pṛast'ha, is assumed from the Va-rāha purāna; and Hemādri, accordingly, declares it synonymous with cudava: the Calpateru, Smṛitisara, Reṭnācara, and Samayapradīpa also make the sēticā equal to the cudava, or a quarter of the pṛast'ha, but it contains twelve pṛasṛiti according to these commentaries; and the pṛasṛiti is described, in the Dānacānda, by Lācshmiḍhera, author of the Calpateru, as the quantity held in both hands by a man of the common size. Twelve
such handfuls fill a *cudava*, described as a vessel four fingers wide and as many deep, which is used in measuring small wood, canes, iron and other things: But Vāchespata Timīśra adopts this *cudava* of twelve *prafīśas*, whence we have a third table of legal measures in general use.

**Table III.**

<table>
<thead>
<tr>
<th>12 double handfuls</th>
<th>=</th>
<th>1 <em>cudava</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>4 <em>cudavas</em></td>
<td>=</td>
<td>1 <em>prafīśa</em></td>
</tr>
<tr>
<td>4 <em>prafīśas</em></td>
<td>=</td>
<td>1 <em>ādīhaca</em></td>
</tr>
<tr>
<td>4 <em>ādīhacas</em></td>
<td>=</td>
<td>1 <em>drōna</em></td>
</tr>
<tr>
<td>20 <em>drōnas</em></td>
<td>=</td>
<td>1 <em>cumbha</em></td>
</tr>
</tbody>
</table>

Besides the difference already noticed on the subject of the *cumbha*, commentators have suggested wider differences. According to Culluca Bhatta, it contains twenty *drōnas*; but this *drōna* contains two hundred *palas*.

In the Dāna vivēca, the *cumbha* is flated at one thousand *palas*; in the Reśnācara, at twenty *prafīśas*. But, according to Jātucarna, five hundred and twelve *palas*, only, constitute a *cumbha*. This may be the same quantity with the *drōna*, as a measure or weight estimated by the hand: it should consist of four *ādīhacas*, each equal to four *prafīśas*, and each of these weighing, according to the Athārava vēda, thirty-two *palas* of gold. This, again, seems to be the *prafīśa* of Magadhā, described by Gopathā Brahmana;

<table>
<thead>
<tr>
<th>4 <em>crīśnaḥalas</em></th>
<th>=</th>
<th>1 <em>māśa</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>64 <em>māśas</em></td>
<td>=</td>
<td>1 <em>pala</em></td>
</tr>
<tr>
<td>32 <em>palas</em></td>
<td>=</td>
<td>1 <em>prafīśa</em> as used in Magadhā.</td>
</tr>
</tbody>
</table>
Since the pala of the gold weighs 420 troy grains, the prafha contains one pound avoirdupois, fourteen ounces and three quarters nearly. The drona last mentioned contains 30 lb. 5 oz. and a fraction, and a cumbha of twenty such dronas, 614 lb. 6 oz. and a half nearly.

The measures of grain in common use are probably derived from the ancient cumbha and drona; but their names are not suggested by any of the preceding tables. Twenty catbas make one bisi; and sixteen bisis one paati. The size of the catba varies in different districts, in some containing no more than two and a half ser of rice, in others five ser (80 secca weight) or even more. In the southern districts of Bengal, a measure of grain is used, which contains one ser and a quarter. It is called rec. Four recs make one pali; twenty palis one solis; and sixteen solis one caben.

The Vribat Rajamartanda specifies measures, which do not appear to have been noticed in other Sanscrit writings:

\[
\begin{align*}
24 \text{ tolacas} &= 1 \text{ ser}, \\
2 \text{ ser} &= 1 \text{ prabh}.
\end{align*}
\]

It is mentioned in the Ayen Ackberi, that the ser formerly contained eighteen dam in some parts of Hindustan, and twenty-two dams in others; but that it consisted of twenty-eight dams at the commencement of the reign of Aceber, and was fixed by him at thirty dams. The dam was fixed at five tanes or twenty moshas, or, as stated in one place, twenty moshas and seven rettis. The ancient ser noticed in the Ayen Ackberi therefore coincided nearly with the ser stated in the Rajamartanda. The double ser is still used in some places, but called by the same name (panchasiri) as the weight of five ser used in others.
WEIGHTS AND MEASURES.

For measures used in Mitkila and some other countries, we have the authority of Chandraseuara, in the Bala bhushana: they differ from the second table, interposing a manica equal to a fourth of a churi, and making the baba equal to twenty churi.

4 palas = 1 cudava.
4 cudavas = 1 prashta.
4 prashtas = 1 adhaca.
4 adhacas = 1 drona.
4 dronas = 1 manica.
4 manicas = 1 churi.
20 churi = 1 baba.

Go pond Bhatta states another set of measures, without furnishing a comparison to any determinate quantity otherwise known.

4 ayus = 1 kaschha,
4 sacshhas = 1 bilva,
4 bilvas = 1 cudava,
4 cudavas = 1 prashta,
4 prashtas = 1 churi,
4 churi = 1 goni,
4 gonis = 1 dronica.

I have already quoted a comparison of the cudava to a practical measure of length; and we learn from the Lilaavati, that the churi or churica of Magadhha should be a cube measured by one cubit: "a vessel measured by a cubit in every dimension is a ghanahosta, which, in Magadhha, is called churica; it should be made with twelve corners, or angles formed by surfaces, (that is, it should be made in the form of a solid with six faces)."
The c'bárica of Utcála is in general use on the south of the river Gó dáveri; there the dróna is the sixteenth part of a c'bárt (as in the second table); the ad'baca, the fourth of a dróna; the praś'ba, the fourth of an ad'baca; and the cudava, a quarter of a praś'ba, but the cudava, formed like a ghanabhata, should be measured by three fingers and a half in every dimension. This vessel must be made of earth or similar materials; for such alone is a cudava.

Both by this statement, and by the second table, a c'bárt consists of 1026 cudavas; and since the cubit must be taken at twenty-four fingers or angulas, a solid cubit will contain 13,824 cubick angulas or fingers, and one cudává, thirteen and a half cubick angulas. Its solid contents, therefore, are the half of a cube whose side is three fingers: a slight change in the reading would make the description quoted from the Līlavātī coincide with this computation, and the c'bárica of Utcála and Magad'ha would be the same.

However, Lacshmi'dhéra has described the cudava as a vessel four fingers wide and as many deep; which makes a cudava of sixty-four cubick angulas or twenty-seven cubick inches.

This will exhibit an ad'baca of 432 inches, similar to a dry measure used at Madras, which is said to contain 423 cubick inches and is the eighth part of a mercal of 3,384 cubick inches, nearly double to the dróna of 1,728 cubick inches. If the cudava of Utcála be a cube whose side is three and a half fingers, containing forty-three cubick angulas nearly or eighteen cubick inches and a fraction, the c'bárica of Utcála contains 44,118 cubick angulas, or 18,612 cubick inches, taking the cubit at eighteen inches.
WEIGHTS AND MEASURES.

On the measures of space Go'pala Bhātta quotes a text from Vriddha Menu, which traces these from the same minute quantity as weights.

8 trāsarēnas = 1 rénu.
8 rénu = 1 bálagra, or hair's point.
8 bālāgras = 1 lisha, or poppy seed.
8 lishas = 1 yūca.
8 yūcas = 1 yava, or very small barley-corn.
8 yavas = 1 angula, or finger.

From this Menu proceeds to larger measures.

12 angulas, or fingers = 1 vīlesī, or span.
2 vīlesīs, or spans = 1 besā, or cubit.

In the Ma'rcandēya purāna measures are traced from atoms.

8 para sushmas = 1 tretārēna.
8 tretārēnas = 1 mhiraja's, grain of sand or dust.
8 grains of sand = 1 bālāgra, or hair's point.
8 bālāgras = 1 lisha.
8 lishas = 1 yūca.
8 yūcas = 1 yava.
8 yavas = 1 angula, or finger.
6 fingers = 1 pada, or breadth of the foot.
2 paddas = 1 vīlesī, or span.
2 spans = 1 cubit (besā)
2 cubits = the circumference of the human body.
4 cubits = 1 dhānushā, denda, or flaff.
2 dendas = 1 naricā, (or nādi)
In another place the same purāṇa notices two measures, one of which is often mentioned in rituals.

21 breadths of the middle of the thumb = 1 retni.
10 ditto = 1 pradesya, or span from the tip of the thumb to the tip of the fore-finger.

But, according the Calpateru, it should be ten breadths of the thumb and a half. And we learn from the Aditya purāṇa, that, according to Vyāsa, it should be measured by the breadth of the thumb at the tip. The same purāṇa makes two retnis (or 42 thumbs) equal to one cishcu; but Hariṭa compares the cishcu to the cubit, four of which it contains according to his statement; and four cishcus make one nalwa. Here again the Aditya purāṇa differs making the nalwa to contain thirty dhanush. It concurs with authorities above cited, in the measures of the cubits denda, and nādi; the first containing twenty-four fingers; the second, ninety-six fingers; and the nādi, two dendas.

The same purāṇa notices the larger measures of distance.

2000 dhanush = 1 cōśa,
2 cōśas = 1 gavyuti,
8000 dhanush = gavyutis = 1 yōjana.

On one reading of the Vishnu purāṇa, the cōśa contains only one thousand dhanush; accordingly Gopāla Bhatta quotes a text, which acquaints us, that “Travellers to foreign countries compute the yōjana, at four thousand dhanush” but he adduces another text, which states the measures of the cōśa, gavyuti, and yōjana, as they are given in the Aditya purāṇa. The Līlāvatī confirms this computation.
WEIGHTS AND MEASURES.

8 barley-corns = 1 finger's breadth.
24 fingers = 1 henna, or cubit.
4 cubits = 1 dana (= 1 dhanush).
2000 dandas = 1 rostra*.
4 rostras = 1 yojana.

The Lilañity also informs us of the measures used for arable land, which are similar to those now in use.

10 hands = 1 vanasa, or bamboo cane.
20 vanasas (in length and breadth) = 1 miranga of arable land.

Divisions of time are noticed in the first chapter of Menu (v. 64):

18 nimòhas, or twinklings of an eye = 1 caksu'hà,
30 cásh'has = 1 calà,
30 calás = 1 shana,
12 shanaras = 1 muhùrta,
30 muhùrtas = 1 day and night, (according to mean solar time.)

From this he proceeds to the divisions of the civil year.

15 days and nights (abhrātra) = 1 paesba, or interval between the sūryagies.
first and last paesba = 1 month.

* If the cubit be taken at eighteen inches, then 4000 yards = 1 standard rostra = 2 miles and a quarter nearly; and 2000 yards = 1 computed rostra = 1 mile and one eighth; and Major Rennel states the rostra as fixed by Acer at 5000 feet = 4757 yards = 2 British miles and 5 furlongs; and the average common rostra at one statute mile and nine-tenths.
2. months = 1 season (ṛtuo)
3 seasons = 1 ayana (half year).
2. ayanas = 1 year.

According to the Sūrya śidhbánta (see As. Ref. vol. 2, p. 230).
6 respirations (praná) = 1 vicalā.
60 vicalās = 1 danda.
60 dandas = 1 sidereal day.

The Vishnu purāna states a mode of subdividing the day, on which Gopa'la Bhatta remarks, that "it is founded on astronomy," and subjoins another mode of subdivision.

Ten long syllables are uttered in one respiration (prand.)
6 respirations = 1 vinādicā.
60 vinādicās = 1 dbatā.
60 dbatās = 1 day and night (or solar day.)

Proceeding to another table, he says, the time, in which ten long syllables may be uttered, is equal to one respiration.

6 respirations = 1 pala.
60 palas = 1 ghaticā.
60 ghaticās = 1 day and night.
30 days and nights = 1 month.
12 months = 1 year.

The Varā'ha purāna concurs with the Sūrya śidhbánta in another subdivision of time.
WEIGHTS AND MEASURES.

| 60 cāhanas | = 1 lāva. |
| 60 lāvas   | = 1 nimēśha. |
| 60 nimēśhas| = 1 cāśht'hā. |
| 60 cāśht'hās| = 1 atipala. |
| 60 atipalas| = 1 vipala. |
| 60 vipalas | = 1 pala. |
| 60 palas   | = 1 danda. |
| 60 dandas  | = a night and day. |
| 60 nights and days | = 1 rītu or season. |

But the Bhavishya purāna subdivides the nimēśha otherwise.

1 twinkling of the eye; while a man is easy and at rest = 30 tatpanas, or moments.

1 tatpanda = 1000 trutis.
1 truti = 1000 jā mercenaries.

Raghunandana, in the Jyotishtatwa, gives a rule for finding the planets which preside over hours of the day called hōrā; doubling the ghati elapsed from the beginning of the day (or sun rises at the first meridian) and dividing by five, the product shews the elapsed hours or hōrās the sixth planet, counted from that which gives name to the proposed day, rules the second hour, the sixth counted from this, rules the third, and so on for the hours of the day, but every fifth planet is taken for the hours of the night.

The order of the planets is \( \alpha \, \beta \, \gamma \, \delta \, \epsilon \, \zeta \). Consequently on a Sunday, the regent of the several hours of the day and night are:

**Day,**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>?</td>
<td>?</td>
<td>a</td>
<td>c</td>
<td>h</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

O 2
As the days of the week are found by taking every fourth in the same series, we might proceed by this rule to the first bόra of the subsequent day, whose regent, the fourth from 0, is ɛ; and thence proceed by the above-mentioned rule to the regents of bόrás for Monday.

I subjoin the original passage, which was communicated to me by Mr. Davis, and add a verbal translation:

बास्पूरते धार्चीकाल्द्विनिति कलाकाहोरोपणं शषयुपूर्वः
दीननिति युतबारस्त्त्वः निजानांतो गैतापुस्त्तः
वेषापूर्वा परमो इराञ्च सूर्यावम लेक्ष्य । प्रोक
देशानुम योजनातिक विषालविक पारम्परिणाभि ॥ २ ॥

"The Ghaticas, elapsed from the beginning of the day, being doubled and divided by (five) arrows, show the cords of time called bόra; in the day these cords are regulated by intervals of (five) seasons counted from the particular regent of the day proposed, in the night by intervals of (five) arrows.

"The commencement of the day at preceding or subsequent meridians, before or after sunrise at the first meridian, is known from the interval of countries, or distance in longitude, measure by yόjanas, and reduced into ghatas after deducting a fourth from the number of yόjanas."
The coincidence of name for the hour of twenty-fourth part of the day is certainly remarkable. But until we find the same division of time noticed by a more ancient author than Raghunandana, it must remain doubtful whether it may not have been borrowed from Europe in modern times.
VII.

Of the City of Pegue, and the Temple of Shoemadoo Praw.

By Captain Michael Symes.

The limits of the ancient city of Pegue, may still be accurately traced, by the ruins of the ditch and wall that surrounded it. From these it appears to have been a quadrangle, each side measuring about a mile and a half, in several places the ditch is nearly filled by rubbish that has been cast into it, or the falling in of its own banks, sufficient however still remains to shew that it once was no contemptible defence. The breadth I judged to be about sixty yards, and the depth ten or twelve feet; except in those places where it is choaked up from the causes I have mentioned, there is still enough of water to impede a siege, and I was informed, that when in repair, it seldom in the hottest season, sunk below the depth of four feet.

The fragments of the wall likewise prove that this was a work of considerable magnitude and labour; it is not easy to ascertain precisely what was its exact height, but we conjectured it to have been at least twenty-five feet, and in breadth at the base not less than forty; it is composed of brick, badly cemented with clay mortar; small equidistant bastions about 300 yards asunder, are still discoverable, but the whole is in a state so ruinous, and so covered with weeds and briars, that it requires close inspection to determine the extent and nature of the defences.
In the center of each side there is a gateway about thirty feet wide, these gateways were the principal entrances; the passage across the ditch is on a mound of earth which serves as a bridge, and was formerly defended by a retenchment of which there are now no traces.

Nothing can exhibit a more striking picture of desolation than the inside of these walls. Alompraw, when he carried the city by assault, in the year 1757, razed every dwelling to the ground, and dispersed or led into captivity all the inhabitants. The pagodas or Pras, which are very numerous, were the only buildings that escaped the fury of the conquerors, and of these the great pagoda of Shoemadoo has alone been attended to and repaired.

After the demolition of the city, Alompraw carried the captive monarch with his family to Ava, where he remained many years a state prisoner. Yangoon or Rangoon, founded about this time, was by a royal mandate constituted the seat of provincial government, and Pegue entirely abandoned.

The present king of the Birmans, whose government has been less disturbed than that of any predecessor of his family, entirely altered the system which had been adopted by his father, and observed during the successive reigns of his two brothers Namdogee Praw and Sembuun Praw, and of his nephew Chenguza; he has turned his attention to the population and improvement rather than the extension of his dominions, and seems more desirous to conciliate his new subjects by mildness, than to rule them through terror. He has abrogated several severe penal laws imposed upon the Talien or Peguer; justice is now distributed impartially, and the only distinction at present between a Birman and Talien, consists in the exclusion of the latter from all publick offices of trust and power.
No act of the Birman government is more likely to reconcile the Taliens to the Birman yoke, than the restoration of their ancient place of abode, and the preservation and embellishment of the pagoda of Shoemadoo; so sensible was the king of this, as well as of the advantages that must accrue to the state, from an increase of culture and population, that five years ago he issued orders to rebuild Pegue, encouraged new settlers by liberal grants, and invited the scattered families of former inhabitants to return and repopulate their deserted city.

The better to effect this purpose, his Birman majesty, on the death of Taomangee, the late Mayoone or viceroy, which happened about five years ago, directed his successor Mainila no Rethee to quit Rangoon, and make Pegue his future residence, and the seat of provincial government of the thirty-two provinces of Henzawudy.

These judicious measures have so far succeeded, that a new town has been built within the site of the ancient city, but Rangoon possesses so many superior advantages, and holds out such inducements to those who wish to dwell in a commercial town, that adventurers do not resort in any considerable numbers to the new colony. The former inhabitants are now nearly extinct, and their families and descendants settled in the provinces of Tanghoo, Martaban, and Talowmeou, and many live under the protection of the Siamese. There is little doubt, however, that the restoration of their favorite temple of worship, and the security held out to them, will in the end accomplish the wise and humane intentions of the Birman monarch.

Pegue, in its renovated state, seems to be built on the plan of the former city, it is a square, each side measuring about half a mile. It is fenced round
by a stockade, from ten to twelve feet high, there is one main street running east and west, which is intersected at right angles, by two smaller streets, not yet finished; at each extremity of the principal street, there is a gate in the stockade, which is shut early in the evening, after that hour entrance during the night, is confined to a wicket, each of these gates is defended by a sorry piece of ordnance and a few musqueteers, who never post sentinels, and are usually asleep. There are also two other gates on the north and south side of the stockade.

The streets of Pegue are spacious, as are the streets in all Birman towns that I have seen. The road is carefully made with brick, which the ruins of the old town plentifully supply; on each side of the way there is a drain that serves to carry off the water; houses even of the meanest peasants of Pegue, and throughout all the Birman empire, possess an advantage over Indian dwellings, by being raised from the ground either on wooden posts, or bamboos, according to the size of the building, the dwellings of the Rabaans, or priests, and higher ranks of people, are usually elevated eight or ten feet; those of the lower classes from two to four.

The houses of the inhabitants of Pegue are far from commodious agreeably to European notions of accommodation, but I think they are at least as much so as the houses of Indian towns, there are no brick buildings either in Pegue or Rangoon, except such as belong to the king, or are dedicated to Gaudma; the king has prohibited the use of brick or stone in private buildings, from the apprehension, I was informed, that if people got leave to build brick houses, they might erect brick fortifications dangerous to the security of the state, the houses therefore are all made of mats or sheathing boards, supported on bamboos or posts; being composed of
such combustible materials, the inhabitants are under continual dread of fire, against which they take every precaution; the roofs are lightly covered, and at each door stands a long bamboo with a hook at the end to pull down the thatch, also another pole with a grating of split bamboo at the extremity, about three feet square, to suppress flame by pressure; almost every house has earthen pots of water on the roof, and there is a particular class* of people whose business it is to prevent and extinguish fires.

The Mayoon's habitation is a good building in comparison with all the other houses of Pegue; it is raised on posts ten feet high, there seems from an outside view, to be many apartments besides the hall in which he gives audience, it is in the centre of a spacious court, surrounded by a high fence of bamboo mats; there is in the hall, at the upper end, a small elevation in the floor, on which the viceroy sits when he receives visits in form.

The object in Pegue that most attracts and most merits notice, is the temple of Shoemadoo †, or the Golden supreme; this extraordinary edifice

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* These people are called Paguwa, they are slaves of government, men who have been found guilty of theft, and through mercy had their lives spared, they are distinguished by a black circle on each cheek caused by punctuation, also by having on their breast, in Birman characters, the word Thief, and the name of the article stolen, as on one that I asked an explanation of—Pa-tchoo Ktboe, Cloth-Thief.

These men patrol the streets at night to put out fires and lights after a certain hour, they act as constables, and are the public executioners.

† Sho is the Birman word for golden, and there can be little doubt that Madoo is a corruption of the Hindu Maha Deva, or Deo. I could not learn from the Birman the origin or etymology of the term, but it was explained to me as importating a Promontory that overlooked land and water; Prasw signifies lord, and is always annexed to the name of a sacred building, it is likewise a sovereign, and facetious title, and frequently used by an inferior when addressing his superior, the analogy between the Birman and the ancient Egyptians in the application of this term, as well as in many other instances, is highly differing notice.

Phara was the proper name under which the Egyptians first adored the Sun, before it received the allegorical appellation of Osiris, or author of time, they likewise prefixed it on their kings and priests, in the first book of Moses, chap. 41, Pharaoh gives, "Joseph to wife the daughter of Poti-Pheba, or
is built on a double terrace, one raised upon another; the lower and greater
terrace, is above ten feet above the natural level of the ground, it is qua-
drangular; the upper and lesser terrace, is of a like shape, raised about twenty
feet above the lower terrace, or thirty above the level of the country. I
judged a side of the lower terrace to be 1391 feet, of the upper 684; the
walls that sustained the sides of the terraces, both upper and lower, are in a
state of ruin, they were formerly covered with plaister wrought into various
figures, the area of the lower is strewed with the fragments of small decayed
buildings, but the upper is kept free from filth, and in tolerable good order.

There is a strong presumption, that the fortress is coeval with this build-
ing, as the earth of which the terraces are composed, appears to have been
taken from the ditch, there being no other excavation in the city, or its neigh-
bourhood, that could have afforded a tenth part of the quantity.

These terraces are ascended by flights of stone steps, broken and negle-
ced; on each side are dwellings of the Rabaans or priests, raised on timbers
four or five feet from the ground, their houses consist only of a single hall,
the wooden pillars that support them are turned with neatness, the roof is
of tile and the sides of sheathing boards, there are a number of bare bench-
es in every house, on which the Rabaans sleep, we saw no other furniture.

Shoemadoo is a pyramid, composed of brick and plaistered with fine
shell mortar, without excavation or aperture of any sort, octagonal at the
base, and spiral at top, each side of the base measures 162 feet; this im-

the priest of On:" in the book of Jeremiah, a king of Egypt is styled "Pharaoh Ophra," and it is not a very improbable conjecture, that the title Pharaoh given to successive kings of Egypt, is a corruption of the word Perā or Phara, in its original sense signifying the Sun, and applied to the sovereign and the priesthood as the representatives on earth of that splendid luminary.
menfe breadth diminishes abruptly, and a similar building has not unaptly been compared in shape to a large speaking trumpet *.

Six feet from the ground there is a wide ledge which surrounds the base of the building, on the plane of which are fifty-seven small spires of equal size and equidistant, one of them measured twenty-seven feet in height and forty in circumference at the bottom; on a higher ledge there is another row, consisting of fifty-three spires of similar shape and measurement.

A great variety of mouldings, encircles the building, and ornaments somewhat resembling the fleur de lys, surround what may be called the base of the spire, circular mouldings likewise gird this part to a considerable height, above which there are ornaments in stucco not unlike the leaves of a Corinthian capital, and the whole is crowned by a tee, or umbrella of open iron work, from which rises an iron rod with a gilded penant.

The tee, or umbrella, is to be seen on every sacred building in repair, that is of a spiral from. The raising and consecration of this last and indispensible appendage is an act of high religious solemnity, and a season of festivity and relaxation.

The present king bestowed the tee that covers Shoemadoo, it was made at the capital; and many of the principal nobility came down from Unmerapoora to be present at the ceremony of putting it on.

The circumference of the tee is fifty-six feet, it rests on an iron axis fixed in

* Vide Mr. Hunter's account of Pegus.
the building, and is farther secured by large chains strongly riveted to the spire.

Round the lower rim of the umbrella are appended a number of bells, of different sizes, which agitated by the wind, make a continual jingling.

The tee is gilt, and it is said to be the intention of the king to gild the whole of the spire; all the lesser pagodas are ornamented with proportionable umbrellas, of similar workmanship, which are likewise encircled by small bells.

The extreme height of the building from the level of the country is 364 feet, and above the interior terrace 331 feet.

On the south east angle of the upper terrace, there are two handsome saloons or Keouns lately erected: the roof is composed of different stages, supported by pillars. I judged the length of each saloon to be about sixty feet, and the breadth thirty. The ceiling of one of them is already embellished with gold leaf, and the pillars lacquered; the other, is not yet completed. They are made entirely of wood, the carving on the outside is very curious, we saw several unfinished figures, intended to be fixed on different parts of the building; some of them not ill shapen, and many exceedingly grotesque. Splendid images of Gaudma, the Birman object of adoration, were preparing, which we understood were designed to occupy the inside of these Keouns.

At each angle of the interior terrace is a pyramidal pagoda sixty-seven feet in height, resembling in miniature the great pagoda; in front of the one in the
south-west corner, are four gigantic representations in masonry of Pallco, or the man-destroyer, half beast half human, seated on their hams, each with a large club on the right shoulder. The Pundit who accompanied me said, that they resembled the Rakuss of the Hindus; they are guardians of the temple.

Nearly in the center of the east face of the area, are two human figures in stucco, beneath a gilded umbrella. One standing, represents a man with a book before him, and a pen in his hand, he is called Thagiamee, the recorder of mortal merits, and mortal misdeeds; the other, a female figure, kneeling, is Maha Sumdere, the protectress of the universe, as long as the universe is doomed to last, but when the time of general dissolution arrives, by her hand the world is to be overwhelmed and destroyed everlastingly.

A small brick building near the north east angle contains an upright marble slab four feet high and three feet wide, on which is a long and legible Birman inscription, I was told it was a recent account of the donations of pilgrims.

Along the north face of the terrace, there is a wooden shed for the convenience of devotees who come from a distance to offer up their prayers at Shoemadoo.

On the north side of the great pagoda are three large bells of good workmanship, suspended near the ground between pillars, several deers horns are strewned around. Those who come to pay their devotions, first take up one of the horns and strike the bell three times, giving an alternate stroke to the ground, this act I was told is to announce to the spirit of Gaudma, the ap-
proach of a suppliant; there are several low benches near the bottom of the pagoda on which the person who comes to pray places his offering, which generally consists of boiled rice, a plate of sweetmeats, or cocoa-nut fried in oil; when it is given, the devotee cares not what becomes of it, the crows and pariah dogs commonly eat it up in presence of the donor, who never attempts to prevent, or molest the animals; I saw several plates of victuals devoured in this manner, and understood, it was the case with all that were brought.

There are many small pagodas on the areas of both terraces, which are neglected and suffered to fall into decay.

Numberless images of Gaudma lie indiscriminately scattered; a pious Birman who purchases an Idol, first procures the ceremony of consecration to be performed by the Rabaans, then takes his purchase to whatever sacred building is most convenient, and there places it, either in the shelter of a Keoun, or on the open ground before the temple, nor does he ever after seem to have any anxiety about its preservation, but leaves the divinity to shift for itself.

Some of those idols are made of alabaster which is found in the neighbourhood of the capital of the Birman dominions, and admits of a very fine polish.

On both the terraces are a number of white cylindrical flags,* which are used by the Rabaans alone, and are considered as emblematic of purity.

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* These flags are made of long stripes of white cloth sewed together at the sides, and extended by hoops of thin bamboo.
and their sacred function; on the top of the staff there is commonly the figure of a *benza* or goofe; the symbol both of the Birman and Pegue nations.

From the upper ledge that surrounds the base of Shoemadoo, the prospect of the country is extensive and picturesque, but it is a prospect of nature in her rudest state; there are few inhabitants, and scarcely any cultivation; the hills of Martaban rise to the eastward, and the Sitang river, winding along the plains, gives here, and there, an interrupted view of its waters; to the north north west, above forty miles, are the Galladzeet hills, whence the Pegue river takes its rise; hills remarkable only for the noisome effects of their atmosphere; in every other direction the eye looks over a boundless plain, chequered by a wild intermixture of wood and water.

Previous to my departure from Pegue, I paid a visit to the Siredaw, or superior Rabaan of the country; his abode was situated in a shady grove of tamarind trees, about five miles south east of the city; every object seemed to correspond with the years and dignity of the possessor, the trees were lofty, a bamboo railing protected his dwelling from the attack of wild beasts, a neat reservoir contained clear water, a little garden gave him roots, and his retreat was well stocked with fruit trees; a number of younger Rabaans lived with him and administered to his wants with pious respect; though extremely emaciated, he seemed lively, and in full possession of his mental faculties; he said his age was eighty-seven. The Rabaans, although supported by charity, never accept of money, I therefore presented this venerable prelate of the order with a piece of cloth, which was repaid by a grateful benediction; he told me that in the convulsions of the Pegue empire, most of their valuable records had been destroyed, but it was traditionally believed that the temple of Shoemadoo was founded two thousand three hundred years ago by two
brothers, merchants, who came to Pegue from Talowmeou, one day’s journey east of Martaban. These pious traders raised a pagoda of one Birman cubit (twenty inches and a half) in height; Sigeamee, or the spirit that presides over the elements, and directs the thunder and lightning, in the space of one night, increased the size of the pagoda to two cubits; the merchants than added another cubit, which Sigeamee likewise doubled in the same short time. The building thus attained the magnitude of twelve cubits, when the merchants desisted; that the pagoda was afterwards gradually increased by successive monarchs of Pegue, the registers of whose names, and the amount of their contributions had been lost in the general ruin, nor could he inform me of any authentic archives that survived the wreck.

Of the deficiency of the foregoing account of the city of Pegue, and the temple of Shoemadoo, I am fully sensible; authentic documents were not to be procured, and the stories related in answer to oral enquiries, were too extravagant to merit attention. That Pegue was once a great and populous city, the ruins of buildings within the walls, and the vestiges of its extensive suburbs, still extant, sufficiently declare; of the antiquity of Shoemadoo there is no reason to doubt, and as a pile of building, singular in its construction, and extraordinary for its magnitude, it may justly be numbered amongst the most curious specimens of oriental architecture.
VIII.

Description of the Tree, called by the Burmas Launzan.

By Francis Buchanan, Esq. M. D.

Before my setting out to accompany the late deputation to the Court of Ava, I received some seeds, which had been sent to Sir John Shore from Pegue. It was conceived, that they might be usefully employed to yield oil, with which they seemed to abound. I was therefore particular in making my enquiries after the plant producing them; I soon learned that they were produced only in the upper provinces of the kingdom, and on my arrival there, I found myself still at a distance from the tree, on which they grow. It is said only to be found on the mountains, and these I had nowhere an opportunity of examining. With some difficulty, however, I procured, whilst at Amerapora, some young shoots with abundance of the flowers, and several young plants in a growing state; and while at Pagam on our return I procured many branches with the young fruit. Unluckily all the young plants died before I reached Bengal, otherwise, I believe they might have been an acquisition of some value. The tree is said to be very lofty, and from what I saw, must produce immense quantities of the fruit, as may readily be conceived from looking at the drawings, where it must be observed, that the fruit-bearing branch has had by far the greater part of its produce shaken off by the carriage. In times of plenty, little use is made of the fruit except for yielding oil, as had
been expected; and besides a small quantity of the seeds are gathered and sent to all parts of the empire, where they are used for nearly the same purposes that almonds are amongst us, but the demand in this way cannot be considerable. It is in times of scarcity, that the fruit becomes valuable. It is said when ripe to be red, and like a peach, consists of a succulent outer flesh, containing a hard shell, in which there is a single seed; the outer fleshy part is said to be agreeably acid, and safe to eat, when that is removed the shells by a slight beating split into two, and are thus easily separated from the kernel, these kernels taste very much like a walnut, but are rather softer, and more oily. As they can, at these places where the trees grow, be afforded very cheap, in times of scarcity they are carefully gathered, and when boiled with a little rice or Indian-corn, furnish a great part of the food of the lower class of the natives. I shall now add such a botanical description of the plant, as will enable it to be reduced into the vegetable system; although not in every respect complete, owing to my not having seen the tree, or the ripe fruit. I believe it will be found to constitute a new genus; but I do not venture to give it a name, till the European botanists have ascertained, whether or not it be reducible to any known genus of plants. In the botanical description I use the Latin language, as I am not yet sufficiently acquainted with the technical terms, introduced into the English by the Litchfield Society, to use them with facility.

**Character Essentialis:** Cal. 1 phyll, petala 5, receptaculo inserta, stamina 10 receptaculo inserta. Nect. 5 maximum, orbiculatum, 10 fulcnum, germen involvens. Styli 5, conniventes. Drupa monosperma, nuce bivalvi. Habitat in montosis regni Barmanorum.

**Arbor clata ramis fuscis nudis; ramulis foliis. Ramuli floriferi glabri, rubicundi, viride-punctati; fructiferi rimosi.
Folia approximata, alterna, petiolata, oblonga, basi attenuata, integra, integerrima, retusa, glabra, venis reticulata.

Fulcra, petiolus ances, acutangulus, brevissimus, glaber. Stipulae, pubes, arma cirrhii nulla.


Cor: petala quinque, rarius sex, receptaculo inferta, sessilia, sublineararia, obtusa, revoluta.


Stam: Filamenta decem, subulata, erecta, petalis breviorae, receptaculo inferta, antherae parvae, ovatae.


Per: Drupa compressa, obovata, obtusa, obtuso-carinata, unilocularis.

Sem: Nux unilocularis, compressa, sub-bivalvis, dehiscens; semen solitarium, hinc acutum, inde erassum carinatum.

Affinis, ordine naturali, terminalis proximus habitu, generi a Roxburgio Barro mamaday die co, sed nectar longissima, characterem habet non nihil similem generi altero, a Roxburgio ebitraca die co, sed habitus diversi; singularis est drupa monosperma cum stylis quinque; simile aliquod tamen occurrit in genere Roxburgiano odina.

A Saponaria diversum genus, drupae unilocularis.
Specimen of the Language of the People inhabiting the Hills in the vicinity of Bhagulpoor; communicated in a Letter to the Secretary.

BY MAJOR R. E. ROBERTS.

PERCEIVING that the very full and satisfactory account of the people inhabiting the hills in the vicinity of Bhagulpoor, by Lieut. Shawe, in the fourth volume of the Asiatick Researches, is unaccompanied by any specimen of their language, should the following one be acceptable as a supplement to that account, or you deem it deserving the notice of the Society, I shall be obliged by your laying it before them, as I can rely on the correctness of it.

Mr. Shawe having observed that these people have no writing character, I just beg leave to add, that when I was on duty at Rajabmahl several years ago, a hill chief sent a verbal message to the commanding officer, expressing a wish to wait upon him. Being desired to appoint a day for that purpose, he transmitted a straw with four knots upon it, which was explained by the messenger who brought it, to intimate that his master would come on the fourth day.
<table>
<thead>
<tr>
<th>Part of Body</th>
<th>Male Language</th>
<th>Female Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Head</td>
<td>Cook.</td>
<td>Eyelash</td>
</tr>
<tr>
<td>Eyebrow</td>
<td>Cunmudbá.</td>
<td>Cheek</td>
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<tr>
<td>Nose</td>
<td>Mocée.</td>
<td>Chin</td>
</tr>
<tr>
<td>Throat</td>
<td>Cuffer.</td>
<td>Tooth</td>
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<tr>
<td>Armpit</td>
<td>Buddee puckda.</td>
<td>An Arm</td>
</tr>
<tr>
<td>Blood</td>
<td>Keefs.</td>
<td>Breast (of a woman)</td>
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<tr>
<td>A Finger</td>
<td>Angillee.</td>
<td>Doodah.</td>
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<tr>
<td>The Breast</td>
<td>Bookah.</td>
<td>Heel</td>
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<td>Belly</td>
<td>Coochah.</td>
<td>Flesh</td>
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<tr>
<td>Loins</td>
<td>Cudmah.</td>
<td>A Fever</td>
</tr>
<tr>
<td>Back</td>
<td>Cookah.</td>
<td>Headake</td>
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<tr>
<td>A Vein</td>
<td>Nároo.</td>
<td>Cholick</td>
</tr>
<tr>
<td>A Toe</td>
<td>Cuddah angillee.</td>
<td>A Tiger</td>
</tr>
<tr>
<td>Hair</td>
<td>Tullee.</td>
<td>Dog</td>
</tr>
<tr>
<td>An Eye</td>
<td>Cun.</td>
<td>Ant</td>
</tr>
<tr>
<td>Ear</td>
<td>Kydoob.</td>
<td>Kite</td>
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<tr>
<td>The Countenance</td>
<td>Teesoo.</td>
<td>Paroquet</td>
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<tr>
<td>Beard</td>
<td>Pácchoodee.</td>
<td>A Fly</td>
</tr>
<tr>
<td>Throat</td>
<td>Tood,</td>
<td>A Bee</td>
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<tr>
<td>Shoulder</td>
<td>Dupna.</td>
<td>Heaver</td>
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<tr>
<td>A Nail (of finger)</td>
<td>Ooruk,</td>
<td>A Star</td>
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<tr>
<td>A Lip</td>
<td>Boocootooda.</td>
<td>A Cloud</td>
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<td>Navel</td>
<td>Cood.</td>
<td>A Cow</td>
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<tr>
<td>Buttock</td>
<td>Moodooocudmullá,</td>
<td>A Jackal</td>
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<tr>
<td>Liver</td>
<td>Cuckâlee,</td>
<td>A Cat</td>
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<tr>
<td>The Foot</td>
<td>Chupta.</td>
<td>A Cock</td>
</tr>
<tr>
<td>A Bone</td>
<td>Coochul.</td>
<td>A Crow</td>
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<tr>
<td>Forehead</td>
<td>Neepee.</td>
<td>A Dove</td>
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<td></td>
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<td>A Pigeon</td>
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</tbody>
</table>

| A Scorpion | Teelah.     | A Horse | Turband    | Heesco           |
| A Buffalo | Mung.       | A Tree  | Linen Cloth | Doomee, Cocudee  |
| A Deer    | Chutreedah. | A House | North      | Looka.           |
| A Bat     | Cheedgoo.   | West    | Adâ.       | Colah.           |
| A Snake   | Neer.       | A Peacock | Purrubmoha, |                  |
| A Fish    | Meen.       | Sweet   | Beerhotroo. |                  |
| Male, masculine | Peechâlah. | Sour    | Choobah.   |                  |
| Sunshine  | Beer.       | Prayer, worship | Ameebade. |                  |
| Moonshine | Beelah.     | Hindustan | Câdkah.   |                  |
| Lightning | Chudkah.    | Wheat   | Seeteed.   |                  |
| Light     | Abublee.    | To sleep | Aydeecootee. |                  |
| Earth     | Kycul.      | To beget, procreate | Coler. |                  |
| A Stone   | Cháchah.    | To sleep | Gyhoom.   |                  |
| An Arrow  | Chår.       | To go    | Cooda.     |                  |
| A Bone    | Eedut.      | To tear  | Keena.     |                  |
| Water     | Oom.        | To squeeze, press out | Aycoocoo. |                  |
| Grass     | Doobah.     | To grind | Aleechee. |                  |
| Food      | Jacoo.      | To know, understand | Tudyecâ. |                  |
| Bread     | Putteca.    |         | Boojee een. |                  |
| Cloth     | Durjâ.      |         |           |                  |
| Black     | Fudcooroa.  |         |           |                  |
| White     | Cheen burroo. |         |           |                  |
| Red       | Kyfroo.     |         |           |                  |
| Yellow    | Balcoo.     |         |           |                  |
| Rice      | Teckeel.    |         |           |                  |
|           |             |         |           |                  |
To break
To sound
To laugh
To weep
To pull, draw
A river
Salt
A cup
Below, under
A tent rope
High
A door
A flower
Game (beasts of)
An idiot
The world
A mat
Before
Why
Me, to me

Turra.
Ahootee.
Alkee.
Boolkee.
Bundra.
Abeen.
Beek.
Coree.
Tuttà.
Jumkâ.
Arkâ.
Dowaree.
Kâdah.
Cubbree.
Bootah.
Oorahâ.
Tâlee.
Moodâhee.
Pundreek.
Aykee.

This
Him
They
Ignorant
Justice
Which
A liar
A rope, cord
A hill
Sick
A sheet
Left (hand, or side)
Crooked
Sand
Accusation, complaint
Mâsee.

Bhee.
Naheen.
Nuckeed.
Oo cullee mulla.
Muzcoor.
Chuchee.
Puffeearee.
Meer.
Tookah.
Chootah.
Chuppooodah.
Akio.
Deeza.
Balah.

Mâsee.

Joolée.
Bhudder.
Sujar.
Mookah.
An Account of the Discovery of Two Urns in the vicinity of Benares.

By Jonathan Duncan, Esq.

I herewith beg leave to deliver to the Society, a stone and a marble vessel, found the one within the other, in the month of January 1794, by the people employed by Baboo Jug Gout Sing, in digging for stones from the subterraneous materials of some extensive and antient buildings in the vicinity of a temple called Sarnath, at the distance of about four miles to the northward of the present city of Benares.

In the innermost of these cases (which were discovered after digging to the depth of eighteen bauls or cubits under the surface) were found a few human bones, that were committed to the Ganges, and some decayed pearls, gold leaves, and other jewels of no value, which cannot be better disposed of than by continuing in the receptacle in which they must have so long remained, and been placed upon an occasion, on which there are several opinions among the natives in that district; the first, that the bones found along with them may be those of the consort of some former rajah or prince, who having devoted herself to the flames on the death of her husband, or on some other emergency; her relations may have made, (as is said to be not unprecedented) this deposit of her remains, as a permanent place of lodgment; whilst others have suggested, that the remains of the deceased, may have probably only been meant to be thus temporarily disposed of, till a proper time or opportunity.
should arrive of committing them to the Ganges, as is usually observed in respect to these pushpa or flowers, a term by which the Hindus affect to distinguish those residuary vestiges of their friends dying natural deaths, that are not consumed by the fire, to which their corpses are generally exposed according to the tenets of their religion.

But I am myself inclined to give the preference to a conclusion, differing from either of the two former, viz. that the bones found in these urns, must belong to one of the worshippers of Buddha, a set of Indian heretics, who having no reverence for the Ganges, used to deposit their remains in the earth, instead of committing them to that river; a surmise, that seems strongly corroborated by the circumstance of a statue or idol of Buddha, having been found in the same place under ground, and on the same occasion with the discovery of the urns in question, on which was an inscription, as per the accompanying copy of the original, ascertaining that a temple had between 7 or 800 years ago been constructed there for the worship of that Deity.
Two Urns in the vicinity of Benares.

Copy of the Original Inscription referred to in the preceding paper.

नमोबुद्राय वाराणसीसमस्या गुरवः श्रीधामग्राशिपादाः
आराध्यनमितनृपति श्रीरामसे: श्रीबलाकीर्तम् १
भूपाल चित्र य प्रादि कीर्तिनरदधराचयः
गीदाधिपो महीपालः काश्याशीमानकारुणः २
सहजी कृत पांडित्यो वादारावनवत्मिना
या धर्म राजिकं सागं धर्मचक्रं पुनर्नमम् १
कृत वंता च नवीन मेघमहाश्यांशीलराजकुटीम्
एनाः श्री स्वर पालो वसंतपालेनुजः श्रीमान ४
समन्त १० ६३ चाषण दिन १९

[Diagram]

सधर्मितेन प्रकोऽहेतुं तेषां तथापलोहा वदनः
तेषां चयोविरोधं एवं वादी महाश्रमणाः
XI.

ACCOUNT OF SOME ANCIENT INSCRIPTIONS.

The President lays before the Society a fac simile of some ancient inscriptions received from Sir Charles Ware Mallet. They were taken by Mr. Wales, a very ingenious artist, who has employed himself, in making designs of the excavations and sculptures at Ellura, and other parts on the western side of India. To the ingenuity of Lieut. Wilford, the Society is indebted for an explanation of the inscriptions. They are, as he observes, of little importance, but the publication of them, may assist the labours of others in deciphering more interesting manuscripts or inscriptions. The following extract of a letter from Lieut. Wilford, containing his translation of the inscriptions accompanies them.

I have the honor to return to you the fac simile of the several descriptions with an explanation of them. I despaired at first of ever being able to decipher them: for as there are no ancient inscriptions in this part of India, we never had, of course, any opportunity to try our skill and improve our talents in the art of deciphering; however after many fruitless attempts on our part, we were so fortunate as to find at last an ancient sage, who gave us the key, and produced a book in Sanscrit, containing a great many ancient alphabets formerly in use in different parts of India; this was really a fortunate discovery, which hereafter may be of great service to us. But let us proceed.
Number II and VI are pure Sanscrit, and the character though uncouth, is Sanscrit also.

The other numbers, viz. I, III, IV, and V, are written in an ancient vernacular dialect, and the characters, though very different from those now in use, are nevertheless derived from the original or primæval Sanscrit, for the elements are the same.

I have exhibited these numbers in one sheet; the inscriptions are first written in their original dialect, but in Sanscrit characters: to this is annexed a translation in Sanscrit; and both the original dialect and the Sanscrit translation are exhibited in English characters.

The numbers I, III, IV, and V, relate to the wanderings of Yudishtira and the Pandovas, through forests and uninhabited places. They were precluded by agreement from conversing with mankind, but their friends and relations, Vidura and Vyasa, contrived to convey to them such intelligence and information, as they deemed necessary for their safety: this they did by writing short and obscure sentences on rocks or stones in the wilderness, and in characters previously agreed upon betwixt them. Vyasa is the supposed author of the Puranas.

No. I.

Consists of four distinct parts which are to be read separately. In the first part (I), either Vidura or Vyasa informs Yudishtira, of the hostile intentions of Durvodhen.

"From what I have seen of him (Durvodhen), and after having fully considered (the whole tenor of his conduct), I am satisfied that he is a wicked man, keep thyself concealed, O chief of the illustrious!"
In the 2d part of No. I.
"Having first broken the stone (that clofes thy cave) come here secretly; old man, that thou mayft obtain the object of thy desire. Thy sufferings vex me sore."

In the 3d part of No. I.
"O most unfortunate! the wicked is come."

In the 4th part of No. I.

Yudishtira and his followers being exhausted with their sufferings, made overtures of peace through Vidura and Vyasa; they had at first some hope of success, when suddenly an end was put to the negotiation, and affairs took another turn. This piece of intelligence they conveyed to Yudishtira, in the following manner.

4th, "Another word:"

This expression in an adverbial form is still in use to express the same thing.

No. III.
"O worthy man! O Hara-bara (Hara-bara the name of Mahadeva, twice expressed, is an exclamation used by people in great distress) ascend into thy cave—hence send letters—but into thy cave go secretly."

No. IV.
"Thou wilt soon perceive that they are leagued together, and that their bellies (appetites) are the only rule of their conduct. Decline their friendship—see the door of yon cave—break it open, (and conceal thyself therein.)"

No. V.
"Go into the town immediately—but do not mix with them—keep thy—S
"self separate as the Lotos (from the waters in which it floats)—Get
into the house of a certain ploughman, and first remain concealed
there; but afterwards keep thyself in readiness."

The two following numbers allude to the worship of *Buddha*:

No. II.

"Here is the statue of Sa’cya-Uda’raca (now a form of *Buddha*)
but who was before a *Brabmachari*, called Sri’-Sohila."

No. VI.

"Sa’cya-Pa’daracarata made this statue."

My learned friends here insist, that these inscriptions were really written
by the friends of *Yudishtira*, I doubt this very much; these inscriptions
certainly convey little or no information to us; still our having been able to
decypher them is a great point in my opinion, as it may hereafter lead to
further discoveries, that may ultimately crown our labours with success.
Indeed your sending them to me, has really been the occasion of my disco-
verying the abovementioned book, which I conceive to be a most fortunate
circumstance.

F. WILFORD.
Ancient Inscriptions.

No. I.

बदलाचल  वरण्युपन्नभ  कुर्विनरव  दरवरा
प्रकटवर्तरथ  पार्वस्वदुकित  िेपे  ताने
गुप्तसुप्रीतिप  वराप्पुर्पुरालवद्रहा  ग्रहचर्वा चबा
बाबलाआह  पातर्बरचतुतापा तहा  िापि
िापि  िरातूपाम  वरताम

The same in Sanscrit.

बदलात्रस्वप्रकटरू:  वरण्युप्पम्बुद्य  कररत्न  अत्र्य दा
मुख्यस्वप्रीतिप  प्रस्तरसंकृतिताद  प्राप
परा ताना िपताि  वरताि  अन्यािाम
बाबला स्तराना स्प्रिता सरताि  वरताि  अन्या िाम
पुराि  िपताि  वरताि  अन्या िाम

No. III.

रुबरा हर्बरा  िुबरा हराहरा  गुहाम रुबरा िेःही
रुबरा लेहे  िुबरा लेहे  गुहाम रुबरा िेःही
रुबरा गुहा िगु  िुबरा गुहा िगु  गुहाम रुबरा िेःही
रुबरा गुहा िगु  िुबरा गुहा िगु  गुहाम रुबरा िेःही
रुबरा गुहा िगु  िुबरा गुहा िगु  गुहाम रुबरा िेःही
रुबरा गुहा िगु  िुबरा गुहा िगु  गुहाम रुबरा िेःही

No. IV.

कालुक्कतििरहारफरस्चरििरार्यशुद्धजल
कालुक्कतििरहारफरस्चरििरार्यशुद्धजल
cala-i jaṭhē rubbāi tābāi ibē saēhāra arnē bhagubadara laxā.

The same in Sanscrit.

जाम्बारक्ष्मान्तःप्रतिश्रव्यं के श्रमान्द्रुद्धरंसिप

The same in Sanscrit.

7dbi jaṭhē rubāi tādāh prabītam ichehāni jēhām ṛāhāra ीदागभā ीदāram ीii

8 2
No. V.

The same in Sanscrit.

अम्ब्रवतिः श्री ऋग्ब्राह्मणिग्रिविवि वशसनधर
बनवसे अधापि प्रसाधु पवित्रान्वयोगुंकुर

Abha eva tiṣṭita sīghram grāmam jhātīti praviṇahalad' bhar
dvapatī adhyāpi gatvā guptaḥ tiṣṭita puṣṭi eḥit udhyogam
cara.

Pure Sanscrit.

No. II.

श्री सोहिलान रह
चारिणि श्राब्धरास्तु
रक्षमातिरत्यु

Sri Sobila Brabma-
chirhunab Śāyānda-
raṭa praśimāya.

Pure Sanscrit.

No. VI.

श्री कायादामयानुस्तात्ता प्रातिमा.

Śāyā Pādābraṭa ceta praśimā.
No. 1.

From Verool or Ellora.

No. 2.

Verool or Ellora.

No. 3.

Ekvira or 'Sibire.

No. 4.

Ekvira or 'Sibire.

No. 5.

Salsette.

No. 6.

Verool or Ellora.
XII.

OBSERVATIONS on the ALPHABETICAL SYSTEM of the LANGUAGE of Āwā and Rāc’hain.*

BY CAPTAIN JOHN TOWERS.

THE annexed plate † is a specimen of the alphabet of the language of Āwā and Rāc’hain, agreeably to the arrangement adopted by the Brāimmas and Mūrāmās, or natives of those kingdoms.

To avoid tedious and perplexing reference, it was thought advisable to place under each symbol its characteristic representative in Roman letters. In doing this, more than common attention has been paid to preserve the notation laid down in the elegant and perspicuous *system and dissertation * on the orthography of Asiatick words in Roman letters,* commencing the first volume of the researches of the Society, at least, as far as its typical arrangement corresponded with the system under discussion; and where a variation rendered it necessary, new combinations or symbols have been introduced, and observations subjoined for their elucidation.

The abecedary rules, as taught by the natives, are, in their aggregate capacity, called Sānbru, or the system of instruction. They are classified under

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* Ava and Arakan. † Plate I.
three distinct heads, and these again divided into thirty subordinate divisions by the inflection of the primary letters, or alphabet, properly so called with the three classes of vowels ārwi, āsāiñe, and āsāîciñe, and four other marks. The instruction commences however with eighteen sounds to prepare the pupil, as it is said, for the greater difficulties that are to follow. These sounds are included in what is taught subsequently, though ten of their symbols are not, which are therefore subjoined in the annexed plate.

I.

Of the several series as they occur in the plate, the first is cāgriñhe or the alphabet, respecting which there is little to observe. In certain cases to facilitate utterance, c is permuted with g, ch with j, the second d with the second t, p with b, and conversely. Of those sounds that have more than one symbol, the first c'b, ch'b, l; second t, d, n; and third t'b are in general use; also the second p'b, except in those instances where it does not associate with the four marks that will appear under the following head.

II.

These are the four marks alluded to above. Their names, as they occur in the plate, are āpāh; ārāiñ; bhrīc'bwe, bhrīc'bwe, &c. according to the letter it is associated with; and swāc'bwe.

ĀPĀH.

The mark of this symbol is y, though it might more properly, and sometimes more conveniently, be marked by our third vowel, commencing a dipthong. The letters to which it is affixed, are c, c'b (1*), g, t (2) p, p'b (1), b, m, l (1), s. To this last it gives nearly the sound of our jā.

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* These figures refer to the archetype in the plate.
which notation it is necessary to preserve, though probably not conformable to the strict rules of analogy: possibly the constituent parts of this sound are the palatal sibilant, and a coalescing with a following vowel.

\[ \text{Arait.} \]

This mark is typified by \( r \), and is always prefixed to the letters with which it associates. These are \( c, c'b (1), g, n, cb'h (1), t (2), p, p'b (1), b, m \). With \( cb'b \) it forms a very harsh combination; but it is to be observed, that it is the nature of this, as well as of all the marks, either separately or in their several combinations, to coalesce into one sound with the associated letter as nearly as the organs of articulation will admit. Its name, \( \text{Arar} \), designates its natural form—meaning erect, or upright.

\[ \text{Hmarch\'hwe.} \]

This extraordinary mark forms a new class of aspirates. Its name signifies suspended from its situation with respect to the letter. The letters under which it is placed, are \( n, ny, n (2), m, r, l (1), w, s \); before the first seven of which its type is \( \text{b}^* \). It hardens into \( z \), the appropriate symbol, or adds a syllable to the inherent vowel, as \( \text{sami} \) a daughter, which may be either written with the mark before us, or by \( m^+ \). In the introductory part to the system, it says, 'when the breath is obstructed by the pressure of the tongue (against the roots of the upper teeth, or probably against the palate), and forced between the teeth on either side of it, a liquid is formed.

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* The aspirate so evidently precedes the letter in pronunciation, that however inclination may lead to make the symbol follow the letter, as is usual in the other aspirates; in this instance it cannot be done without an offensive violation of all analogy.
+ See Plate I, a.
† That commences the first volume of the researches of the Society. For the sake of brevity, it will be quoted throughout by this title.
terminate those words. It need scarcely be observed, that hence each letter of the alphabet properly so called is used as a syllabic initial, and never as a medial or final, if we except the nasals. But here we only speak as far as pronunciation is concerned. There is reason to suppose that this singularity is not peculiar to the language we are treating of, but that the Chinese is formed upon the same principle; and probably some of the African dialects, if the analogy observable in the mode in which some natives of that quarter of the globe pronounce exotic words, and that of the Mūrūmās be sufficient ground for the suggestion. Whether the language of Tibet be not also, a member of the Society may be possibly able to determine. A native of Arakan of naturally strong parts and acute apprehension with whom more than common pains have been taken for many months past to correct this defect, can scarcely now with the most determined caution articulate a word or syllable in Hindustāni that has a consonant for a final, which frequently occasions very unpleasant, and sometimes ridiculous, equivocations: and such is the force of habit, even to making the most simple and easy things difficult, that as obvious as the first elementary sound appears to our comprehension, in an attempt that was made to teach him the Nāgari character of which it is the inherent vowel, a number of days elapsed before he could be brought to pronounce it, or even to form any idea of it, and then but a very imperfect one.

The plate, as has been already observed, shews the alphabetical arrangement adopted by the natives. It will be more convenient however in treating of the three series of vowels and nasal marks to throw them into classes; not only for the sake of perspicuity: but to avoid the irksome task of endless repetition.
The first are accented in the same proportion as a and a only with somewhat less force. The last is pronounced with an effort unusually harsh by a strong inflection of the centre part of the tongue towards the palate. It seems to form a sound between the third vowel of the system and the actual articulation of its final letter, with which a foreigner from mere oral knowledge would most probably be induced to write it. No doubt, however, exists of its being a vowel, as attention to the mode in which a native pronounces it will fully demonstrate. The constituent sound in aπαν being our third vowel, in the inflection of those letters, which take that mark with the three vowels before us, the variation in their associated and unassociated capacity is not easily discernable at first, but the difference is discovered in a day or two's practice by the assistance of a native.
u, ü, up.

The grave and acute accents of the last series characterize the two first of the present; the third being formed by a sudden reciprocation of the tongue with an appulse nearly of the lips so as to convey an idea of fulness, or, if the expression may be allowed, a remarkable roundness of sound united to an uncommonly obtuse and abrupt termination, a peculiarity that marks those vowels of the series äfaire and äfaicri that have mutes for the double letter. To this observation, however, there is an exception, which will be taken notice of in its proper place. The sound of the letter when associated with Wach'howe, and inflected by the two first of these vowels remains the same as in its unassociated form: but the sigma in this case appears to be considered by the natives themselves as redundant, for it has hitherto only been met with in their abecedary system.

e, è.

The first is the e of the system. It has two types—the seventh of the first series, and the last but one of the second; and which are often abreviated in writing, as in the verbal terminations ze and rue in the plate*. By a strange irregularity it is frequently written for i. The second is distinguished by the grave accent of the preceding series.

ao, aò; o, ò.

These vowels seem to be thus distinguished in the system: "by pursing up our lips in the least degree, we convert the simple element into another sound of the same nature with the first vowel, and easily confounded with it, in a broad pronunciation: when this new sound is lengthened, it ap-

* Plate I, b.
proaches very nearly to the fourth vowel, which we form by a bolder and stronger roundness of the mouth.” The two first may be often mistaken for the last; and, in some words, even for á and ō when inflecting the other letters with which we suspended. Like u, û, the symbol in association with which we when inflected with these four vowels, is redundant.

āit, āip; aich, aic.

Our diphthong in oy, or joy, which seems to be compounded of the broad vowel in all, or rather its correspondent short one, followed by the third, pronounced with the acute piercing accent described in treating of the first vowel, constitutes the sound of the two first of the present class of vowels; while the narrower sound in eye or my, with the obtuse abrupt termination mentioned under the third class of vowels, peculiarizes the two last. Taken in two’s, as they appear above separated by the semicolon, their sounds are congenial. The two first form the exception taken notice of under the third class of vowels.

auce.

The diphthong of the first and fifth vowels already so fully described in the system, with the guttural termination of āe, is the sound of this vowel. It is sometimes abbreviated, by an elision of the final letter, when a point above is substituted in its room.

The nasals are now only left for discussion. Their peculiar vowels, as well as most of their nasal terminations, are to be found either in the system or in the foregoing observations. The only thing therefore that remains, is arranging them into classes, and making a few trifling strictures.
No elucidation is here necessary. A species of abbreviation is sometimes observable in writing, when the double letter is placed above, instead of preceding, the following letter; as in the word सानबुरेि.

िि.

The sigma of this nasal in the original is not deduced analogously, its powers as a syllabic initial being that of the dental nasal, which sound is altogether excluded from this language as a final.

ौम, उन.

The first of these is the regular symbol. Both sounds have but one type in the original, that as a labial appearing to be restricted to those instances where a labial follows; as नुङ्खुप, a small eminence, or rising ground. The nasal is frequently represented by a point above the letter.

अिन, अिन, आिम; आिन आिन.

The vowels of these nasals are in the same proportion as आि, आिच, pronounced without the acute accent and abrupt termination by which they are respectively distinguished. The obscure nasal, formed by a slight inclination of the tongue towards the palate, with a trifling aid from the other organ, and which is so frequently to be met with in Persian and Hindi vocables, is the sound of the two first; the purpose of the third being seemingly to take their place when a labial follows, as in the word काम्पिः the earth. It

* See Plate I. d.
† This nasal appears to hold a middle place between the dental and guttural nasals considered as finals; with the last of which it has but one common type in the system.
‡ See Plate I. c, where it may be observed the double letter has the one which should follow it subtended to it, and takes the vowel with which it is inflected, the distinguishing mark आि being suppressed; an abbreviation very common in the vowels and nasal marks formed by double letters, particularly where the double letter is the same with that which immediately follows it.
may be proper to observe here, that, like the Hindi, there is a slight nasality perceivable in the pronunciation of some words for which there is no symbol.

The diphthongs of aň and aňt are permuted with ē and ē when inflecting ny, y and the whole class of aťăn; as nyēň, nyēň, &c. and aňt, when inflecting those letters with wâch'ňe suspended, and the class āpān-wâch'ňe; as nyēň, &c. This last nasal, by an anomaly not to be accounted for, is very often written for ē.

aňt, aňt.

These compounds, formed of the first and fifth vowels and guttural nasal, close the three series of vowels and nasal marks, and with them the abecedary rules of this language.

There is, however, one observation more requisite that could not have been introduced before without inconvenience, and which has therefore been reserved for this place. ŏ, considered in its syllabic initial capacity, in its inflections of ārwi and āsairte with wâch'ňe suspended, is preceded by the fourth vowel, which, in this instance only, forms the symbol for wâch'ňe. The notation, therefore, for this deviation should be as follows: oâ, oã, oä, oac, oañ, oañ; o'i, o'i; o'e, o'ē; o'aĩt, o'aĩp, o'āĩn, o'āĩn, o'āĩt; o'āicht, o'āic, o'āiň, o'āiň. There is a farther deviation observable in the first six, the primary vowel being changed in the present case into the simple element, with which the incipient letter coalesces into a diphthong. In the rest, the initial vowel is articulated separately, as the comma between indicates. As for u, ŏ; ao, ao; o, ŏ; they retain the same sound, as has been already observed, either with or without wâch'ňe.
The following extract taken from a book entitled Manu Saṅgawaḥ, or the Iron ring of Manu, is offered merely as a specimen of the notation here laid down. It scarcely from its insignificance, deserves a translation; however one is subjoined.

Māhasamādā mān gri chācā crāwāla sānkyā praṅ braṅ tāṅ dāṅ piṭ, tā tāṅchā braṅ cḥhaṅt chhe zāo tācchhe āhaṅ'pā zāo thimmasāṅt chāṅ gā do go cā loś lo mūga nāṅ nāc cṛī gā bhūṛā, lā b[ri] zo myāc b'[n]a mūrve tāmūṅ chā b'[n]a myāc'b'[h]i myāc'b'[n]a chāṅ dēwāṅ pā na ekhe graṅ'ruve chāṅ gre jwā coāc cō su'[p] sāṅ ruve sāṅ hālā jwā zāo cō phāṅ tāṅt chā tāṅchā cḥhaṅt b'[h]i zāo āmyo le'bā pārtī sāṅ do b'[n]ā che we chāṅ b'[n]ā lāṅ lāc up chhe b'[n]ā rādānā jumā go b'[h]i ch'ruve brām'ma chā zāo nātī sigrā do go b'[h]i ch' tāṅt dāṅ u b'[n]ā bhūṛā i tācchhe āhaṅ'pā thimmasāṅt tārā chāṅ gā go māhasamādā māṅ gri a cā pe lo zāo b'[n]ā.

And Manu said, "Oh, mighty Prince, Māhasamādā! if thou hast an inclination to hear and understand the words of the eighteen holy books which I brought from the gate of Chāc'crāwāla† that enclose and form a barrier (to the earth), from thy palace with thy face turned towards the east, cleaning thy teeth, washing thy eyes, mouth, cheeks, and ears, and wiping thy body and hands, and with a purified person, and having put on thy apparel and eat; and with the four friends‡ assembled and forming a circle, clapping thy hands and making obeisance to the three ineft-

* For the original, see plate II.
† Steep and stupendous mountains fabled to surround the earth, and beyond which no mortal can pass.
‡ Man; the two classes of supernatural beings Nāt and Sṛka, supposed to possess the peculiar guar-
dership of mankind; and Bṛānma, through an attribute, it would seem, of ubiquity.
nimble jewels* and prostrating thyself before Braimma, (and the two classes of beneficent genii) Nait and Sigra and making known to them thy grievances (having performed all these acts, then) will I present unto thee, illustrious monarch, Mahasamada, and cause thee to hear the words of these eighteen books of Divine ordinances”.

It is difficult to refrain observing that the arrangement not only of the alphabet but of the first series of vowels (eight of which have distinct characters† which are not inflected) of the foregoing system has a striking similitude to the Devanagari. In the alphabet, for instance, wherever it is defective, such deficiency is supplied by double, and in one case, quadruple, symbols for the same sound; the first part being arranged into classes of four each terminated by a nasal, forming together the number twenty five, which exactly corresponds with the Devanagari.

From information, there appears to be scarcely room to doubt, but that the Siamese have one common language and religion with the Braimmas and Maramases; and that in manners and customs the three nations form, as it were, one great family. How far these observations may extend to the inhabitants of Asam, we shall be able to judge on the publication of the history of that country.

It may be sufficient to observe in this place, that there is one sad impediment to attaining a critical knowledge of the idiom of the language of Awa

* Phuri, Tara Sancba,—The Incarnate Deities, Divine Justice, and the Priests.
† See Plate I, figure 6.
and Aracan, without which we may in vain expect from any pen accurate information respecting the religion, laws, manners, and customs, of these kingdoms; and that is, that there is no regular standard of orthography, or the smallest trace of grammatical enquiry to be found among the natives.* Much, however, may be done by patience and attention. The field is ample; and he who has leisure and perseverance to attain a just knowledge of its boundaries, will probably find his labours rewarded beyond his most fanequine expectation.

*Every writing that has hitherto come under observation has been full of the grossest inaccuracies; even those blamed by the highest authority—such as official papers from the king of Ava to our government. How far the Pali, or sacred language in which their religious ordinances are written, may be exempted from this remark, it is impossible to say. The Prijia, are almost the only people conversant in it, and few even among them are celebrated for the accuracy and extent of their knowledge; between Rama and Jt mabid, only one person has been heard of, and to him access has not hitherto been obtainable. Enquiry seems to favor an opinion that an acquaintance with both languages is absolutely necessary to effect the important purposes that at present introduce themselves to our notice; and which are, to prove the inhabitants of Siam, Ava, and Aracan to be one and the same people in language, manners, laws and religion; and features of the strongest resemblance between them and those of Afan, Nepal, and Tibet; and eventually to add another link to the chain of general knowledge by furnishing materials for filling up the interval that seems at present to separate the Hindus from the Chinese.
XIII.

Some Account of the Elastic Gum Vine of Prince of Wales's Island, and of experiments made on the milky juice which it produces; with hints respecting the useful purposes to which it may be applied.—By James Howison, Esq. communicated by John Fleming, Esq.

Our first knowledge of the plant being a native of our Island arose from the following accident. In our excursions into the forests it was found necessary to carry cutlassses for the purpose of clearing our way through the underwood. In one of those an elastic gum vine had been divided, the milk of which drying upon the blade, we were much surprized in finding it possess all the properties of the American Caout-chouc.

The vine which produces this milk, is generally about the thickness of the arm and almost round; with a strong ash coloured bark much cracked and divided longitudinally; has joints at a small distance from each other, which often send out roots but seldom branches; runs upon the ground to a great length, at last rises upon the highest trees into the open air. It is found in the greatest plenty at the foot of the mountains, upon a red clay mixed with sand, in situations completely shaded, and where the mercury in the thermometer will seldom exceed summer heat.

In my numerous attempts to trace this vine to its top I never succeeded; for after following it in its different windings, sometimes to a distance of
two hundred paces, I lost it, from its ascending among the branches of
trees that were inaccessible either from their size or height. On the west
cost of Sumatra, I understand they have been more successful: Dr.
Roxburgh having procured from thence a specimen of the vine in flowers,
from which he has classed it; but whose description I have not yet seen.

With us, the Malays have found tasting of the milk the best mode of
discriminating between the elastic gum vine and those which resemble it in
giving out a milky juice, of which we have a great variety; the liquid from
the former being much less pungent or corrosive, than that obtained from
the latter.

The usual method of drawing off the milk is by wounding the bark
deeply in different places, from which it runs but slowly, it being full em-
ployment for one person to collect a quart in the course of two days. A
much more expeditious mode, but ruinous to the vine, is cutting it in
lengths of two feet, and placing under both ends vessels to receive the milk.
The best is always procured from the oldest vines. From them it is often
obtained in consistence equal to thick cream, and which will yield two
thirds of its own weight in gum.

The chemical properties of this vegetable milk, so far as I have had an
opportunity of examining, surprizingly resembles those of animal milk.

From its decomposition, in consequence of spontaneous fermentation or
by the addition of acids, a separation takes place between its caseous, and
ferous parts, both of which are very similar to those produced by the same
processes from animal milk. An oily or butyrous matter is also one of its.
component parts, which appears upon the surface of the gum, so soon as the latter has attained its solid form. The presence of this considerably impeded the progress of my experiments, as will be seen hereafter.

I was at some trouble in endeavouring to form an extract of this milk so as to approach to the consistence of new butter, by which I hoped to retard its fermentative stage, without depriving it of its useful qualities: But as I had no apparatus for distilling, the surface of the milk that was exposed to the air instantly formed into a solid coat, by which the evaporation was in a great degree prevented. I however learned, by collecting the thickened milk from the inside of the coats and depositing it in a jelly pot, that if excluded from the air, it might be preserved in this state for a considerable length of time.

I have kept it in bottles without any preparation, tolerably good, upwards of one year; for notwithstanding the fermentation soon takes place, the decomposition in consequence is only partial, and what remains fluid, still retains its original properties although considerably diminished.

Not having seen M. Fourcroy's memoir on Cuiriot-couze, I could not make trials of the methods proposed by him for preserving the milk unaltered.

In making boots, gloves, and bottles of the elastic gum, I found the following method the best: I first made moulds of wax as nearly of the size and shape of what they represented as possible. These I hung separately upon pins, about a foot from the ground, by pieces of cord wrought into the wax. I then placed under each a soup plate, into which I poured as much
of the milk as I thought would be sufficient for one coat. Having dipped my fingers in this, I completely covered the moulds one after another, and what dropped into the plates was used as part of next coat. The first I generally found sufficiently dry in the space of ten minutes when exposed to the sun, to admit of a second being applied. However, after every second coat, the oily matter beforementioned was in such quantity upon the surface, that until washed off with soap and water, I found it impossible to apply any more milk with effect; for if laid on, it kept running and dividing like water upon wax.

**Thirty coats,** I in common found sufficient, to give a covering of the thickness of the bottles which come from America. This circumstance may however at any time be ascertained, by introducing the finger between the mould and gum, the one very readily separating from the other.

I found the fingers preferable to a brush, or any instrument whatever, for laying on the milk; for the moment a brush was wet with that fluid the hair became united as one mass. A mode, which at first view would appear to have the advantage of all others for ease and expedition, in covering clay and wax moulds with the gum, viz. immersing them in the milk, did not at all answer upon trial, that fluid running almost entirely off, although none of the oily matter was present; a certain degree of force seeming necessary, to incorporate by friction the milk with the new formed gum.

When upon examination I found that the boots and gloves were of the thickness wanted, I turned them over at the top and drew them off, as if from the leg, or hand, by which I saved the trouble of forming new moulds. Those of the bottles being smallest at the neck, I was under the necessity of dissolving in hot water.
The inside of the boots and gloves which had been in contact with the wax being by far the smoothest, I made the outside. The gloves were now finished unless cutting their tops even, which was best done with scissors. The boots however in their present state more resembled stockings, having as yet no soles. To supply them with these, I poured upon a piece of gunny, a proper quantity of milk, to give it a thick coat of gum. From this when dry, I cut pieces sufficiently large to cover the sole of the foot; which, having wet with the milk, I applied; first replacing the boot upon the mould to keep it properly extended. By this mode the soles were so firmly joined, that no force could afterwards separate them. In the same manner I added heels and straps, when the boots had a very neat appearance. To satisfy myself as to their impermeability to water, I stood in a pond up to their tops for the space of fifteen minutes, when upon pulling them off, I did not find my stockings in the least damp. Indeed from the nature of the gum, had it been for a period of as many months, the same result was to have been expected.

After being thus far successful, I was greatly disappointed in my expectations with regard to their retaining their original shape, for on wearing them but a few times, they lost much of their first neatness, the contractions of the gum being only equal to about seven-eighth of its extension.

A second disadvantage arose from a circumstance difficult to guard against, which was, that if by any accident the gum should be in the smallest degree weaker in one place than another, the effect of extension fell almost entirely on that part, and the consequence was that it soon gave way.

From what I had observed of the advantage gained in substance and uniformity of strength by making use of gunny as a basis for the soles, I was
led to suppose, that if an elastic cloth, in some degree correspondent to the elas-
ticity of the gum were used for boots, stockings, gloves, and other articles, where that property was necessary, that the defects above-mentioned might in a great measure be remedied. I accordingly made my first experiment with Cassimbarz stockings and gloves.

Having drawn them upon the wax moulds, I plunged them into vessels containing the milk, which the cloth greedily absorbed. When taken out they were so completely distended with the gum in solution, that upon becoming dry by exposure to the air, not only every thread, but every fibre of the cotton had its own distinct envelope, and in consequence was equally capable of resisting the action of foreign bodies as if of solid gum.

The first coat by this method was of such thickness, that for stockings or gloves nothing farther was necessary. What were intended for boots, required a few more applications of milk with the fingers, and were finished as those made with the gum only.

This mode of giving cloth as a basis I found to be a very great improvement; for, besides the addition of strength received by the gum, the operation was much shortened.

Woven substances that are to be covered with the gum, as also the moulds on which they are to be placed, ought to be considerably larger than the bodies they are afterwards intended to fit; for being much contracted from the absorption of the milk, little alteration takes place in this diminution in size, even when dry, as about one third only of the fluid evaporates before the gum acquires its solid form.
Great attention must be paid to prevent one part of the gum coming in contact with another while wet with the milk, or its whey, for the instant that takes place, they become inseparably united. But should we ever succeed in having large plantations of our own vine, or in transferring the American tree, (which is perhaps more productive) to our possessions, so that milk could be procured in sufficient quantity for the covering of various cloths, which should be done on the spot, and afterwards exported to Europe, then the advantages attending this singular property of the milk, would for ever balance its disadvantages. Cloths and coverings of different descriptions might then be made from this gum cloth, with an expedition so much greater than by the needle, that would at first appear very surprizing. The edges of the separate pieces only requiring to be wet with the milk or its whey, and brought into contact, when the article would be finished and fit for use. Should both milk and whey be wanting, a solution of the gum in ether can always be obtained, by which the same end would be accomplished.

Of all the cloths upon which I made experiments, nankeen, from the strength and quality of its fabric, appeared the best calculated for coating with the gum. The method I followed in performing this was, to lay the cloth smooth upon a table; pour the milk upon it, and with a ruler to spread it equally; but should this ever be attempted on a larger scale, I would recommend the following plan. To have a cistern for holding the milk a little broader than the cloth, to be covered with a cross bar, in the center, which must reach under the surface of the milk and two rollers at one end. Having filled the cistern, one end of the piece of cloth is to be passed under the bar and through between the rollers; the former keeping the cloth immersed in the milk, the latter pressing out what is superfluous, so that none may be lost. The cloth can be hung up at full length to dry, and the operation re-
peated until of whatever thickness wanted. For the reasons above-mentioned, care must be taken that one fold does not come in contact with another while wet.

Having observed that most of the patent catheters and bougies made with a solution of the elastic gum, whether in ether or in the essentinal oils, had either a disagreeable stickiness, or were too hard to admit of any advantage being derived from the elasticity of the gum; I was induced to make some experiments with the milk towards removing these objections.

From that fluid by evaporation, I made several large sized bougies of pure gum, which from their over-flexibility were totally useless. I then took some slips of fine cloth covered with the gum which I rolled up until of a proper size, and which I rendered solid by soaking them in the milk and then drying them. These possessed more firmness than the former, but in no degree sufficient for the purpose intended: pieces of strong catgut coated with the gum, I found to answer better than either.

Besides an effectual cloathing for manufacturers employed with the mineral acids, which had been long a desideratum, this substance under different modifications might be applied to a number of other useful purposes in life, such as making hats, great coats, boots, &c. for sailors, soldiers, fishermen, and every other description of persons who from their pursuits are exposed to wet stockings; for invalids who suffer from dampness; bathing caps, tents, coverings for carriages of all kinds, for roofs of houses, trunks, buoys, &c.

This extraordinary vegetable production in place of being injured by water,
at its usual temperature * is preserved by it. For a knowledge of this circumstance I am indebted to the Chinese. Having some years ago commissioned articles made of the elastic Gum from China, I received them in a small jar filled up with water in which state I have since kept them without observing any sign of decay.

Should it ever be deemed an object to attempt plantations of the elastic Gum Vine in Bengal, I would recommend the foot of the Chittagong, Rajmabul, and Baulipore hills as situations, where there is every probability of succeeding, being very similar in soil and climate to the places of its growth on Prince of Wales's Island. It would, however, be advisable to make the first trial at this settlement, to learn in what way the propagation of the plant might be most successfully conducted. A farther experience may also be necessary, to ascertain the season when the milk can be procured of the best quality, and in the greatest quantity, with the least detriment to the Vine.

* From an account of experiments made with the elastic Gum by M. Grosbary, inserted in the Annals de Chimie for 1792, it appears that water when boiling has a power of partially dissolving the gum so as to render one part capable of being finally joined to another by pressure only.
A Botanical description of Urecola clasifica, or Caout-chouc Vine of Sumatra and Pullo-pinang, with an account of the properties of its inspissated juice, compared with those of the American Caout-chouc.—By William Roxburgh, M. D.

For the discovery of this useful vine, we are, I believe, indebted to Mr. Howison, late Surgeon at Pullo-pinang; but it would appear he had no opportunity of determining its botanical character. To Dr. Charles Campbell, of Fort Marlborough, we owe the gratification arising from a knowledge thereof.

About twelve months ago, I received from that gentleman by means of Mr. Fleming, very complete specimens, in full foliage, flower, and fruit; from these I was enabled to reduce it to its class, and order in the Linnean System. It forms a new genus in the class Pentandria, and order Monogyne and comes in immediately after Tabernamontana, consequently belongs to the thirtyeth natural order, or class called Contortae by Linneus, in his natural method of classification, or arrangement: one of the qualities of the plants of this order is, their yielding on being cut, a juice which is generally milky, and for the most part deemed of a poisonous nature.

The generic name Urecola which I have given to this plant, is from the structure of the corol, and the specific name from the quality of its thickened juice.
So far as I can find, it does not appear that ever this vine has been taken notice of by any European till now: I have carefully looked over the Hortus Malabaricus, Rumphius's Herbarium Amboinense, &c. &c. Figures of Indian plants, without being able to find any one that can with any degree of certainty be referred to. A substance of the same nature and probably the very same was discovered in the island of Mauritius by Mr. Poivre, and from thence sent to France, but, so far as I know, we are still ignorant of the plant that yields it.

The impropriety of giving to Caout-chouc the term gum, resin, or gum-resin, every one seems sensible of, as it posseess qualities totally different from all such substances as are usually arranged under those generic names: yet it still continues, by most authors I have met with, to be denominated elastic Resin or elastic Gum; some term it simply Caout-chouc, which I wish may be considered as the generic name of all such concrete vegetable juices (mentioned in this memoir) as posseess elasticity, inflammability, and are soluble in the esential oils without the assistance of heat.

In a mere definition it would be improper to state what qualities the object does not posseess, consequently, it must be understood that this substance is not soluble in the menstruums which usually dissolve resins and gums.

East India Caout-chouc would be a very proper specific name for that of Urecola elastica, were there not other trees which yield juices so similar, as to come under the same generic character; but as this is really the case, I will apply the name of the tree which yields it for a specific one. E. G. Caout-chouc of Urecola elastica. Caout-chouc of Ficus Indica, Caout-chouc of Artocarpus integrifolia, &c &c.
DESCRIPTION of the PLANT

URCEOLA,

PENTANDRIA MONOGYNIA.

Gen. Char; calyx beneath five-toothed; corol one-petal'd, pitcher-shaped, with its contracted mouth five-toothed; nectary entire, surrounding the germs; follicles two round drupaceous; seeds numerous, immersed in pulp.

URCEOLA ELASTICA.

Shrubby, twining, leaves opposite, oblong, panicles terminal.

Is a native of Sumatra, Pullo-pinang, &c. Malay countries.

Stem, woody, climbing over trees, &c. to a very great extent, young shoots twining and a little hairy, bark of the old woody parts thick, dark coloured, considerably uneven, a little scabrous, on which I found several species of moss, particularly large patches of Lichen; the wood is white light and porous.

Leaves, opposite, short-petioled, horizontal, ovate-oblong, pointed, entire, a little scabrous, with a few scattered white hair on the under side.

Stipules, none.

Panicles, terminal, brachiate, very ramous.

Flowers, numerous, minute, of a dull greenish colour, and hairy on the out side.

Bracts, lanceolate, one at each division and subdivision of the panicle.

Calyx, perianth one-leaved, five-toothed, permanent.

Corol, one-petal'd, pitcher-shaped, hairy, mouth much contracted five-toothed, divisions erect, acute, nectary entire, cylindrick, embracing the lower two thirds of the germs.

Stamens, filaments five, very short, from the base of the corol. Anthers X
arrow-shaped, converging, bearing their pollen in two grooves on the inside near the apex, between these grooves and the insertions of the filaments they are covered with white soft hairs.

Pistil, germs two, above the nectary they are very hairy round the margins of their truncated tops. Style single, shorter than the stamens. Stigma ovate, with a circular band, dividing it into two portions of different colours.

Per. Follicles two, round, laterally compressed into the shape of a turnip, wrinkled, leathery, about three inches in their greatest diameter, one-celled, two-valved.

Seeds very numerous, reniform, immersed in firm fleshy pulp.

EXPLANATION OF THE FIGURES.

1. A branchlet in flower natural size.
2. A flower magnified.
3. The same laid open, which exposes to view the situation of the stamens inserted into the bottom of the corol. The nectarium surrounding the lower half of the two germs their upper half with hairy margins, the style and ovate party coloured, stigma appearing above the nectary.
4. Outside of one of the stamens, much magnified.
5. Inside of the same,
6. The nectarium laid open, exposing to view the whole of the pistil.
7. The two seed vessels, (called by Linnæus follicles), natural size, half of one of them is removed, to show the seeds immersed in pulp, a portion thereof is also cut away which more clearly shows the situation and shape of the seed.

From wounds made in the bark of this plant there oozes a milky fluid, which on exposure to the open air, separates into an elastic coagulum, and
watery liquid, apparently of no use. After the separation takes place, this coagulum is not only like the American Caout-chouc, or Indian rubber, but possesses the same properties, as will be seen from the following experiments and observations made on some which had been extracted from the vine about five months ago. A ball of it now before me, is to my sense, totally void of smell, even when cut into, is very firm, nearly spherical, measures nine and a half inches in circumference, and weighs seven ounces and a quarter, its colour on the outside is that of American Caout-chouc; when fresh cut into of a light brown colour till the action of the air darkens it; throughout there are numerous small cells, filled with a portion of the light brown watery liquid above mentioned. This ball in simply falling from a height of fifteen feet, rebounds about ten or twelve times; the first is from five to seven feet high, the succeeding ones of course lessening by gradation.

This substance is not now soluble in the abovementioned liquid contained in its cells, although so intimately blended therewith when first drawn from the plant, as to render it so thin, as to be readily applied to the various purposes, to which it is so well adapted when in a fluid state.

From what has been said, it will be evident that this Caout-chouc possesses a considerable share of solidity and elasticity in an eminent degree. I compared the last quality, with that of American Caout-chouc by taking small slips of each, and extending them till they broke, that of Urceola was found capable of bearing a much greater degree of extension, (and contraction) than the American; however this may be owing to the time the respective substances have been drawn from their plants.

The Urceola Caout-chouc rubs out the marks of a black-lead pencil, as X 2
readily as the *American*, and is evidently the substance of which the *Chinese* make their elastic rings.

It contains much combustible matter, burning entirely away, with a clear flame, emitting a considerable deal of dark coloured smoke, which readily condenses into a large proportion of exceeding fine foot, or lamp-black; at the same time it gives but little smell, and that not disagreeable, the combustion is often so rapid, as to cause drops of a black liquid, very like tar, to fall from the burning mass; this is equally inflammable with the rest, and continues when cold in its semisolid state, but totally void of elasticity. In *America* the *Caoout-choue* is used for torches, ours appears to be equally fit for that purpose.

Exposed in a silver spoon to a heat, about equal to that which melts lead or tin, it is reduced into a thick, black, inflammable liquid, such as drops from it during combustion, and is equally deprived of its elastic powers, consequent-ly rendered unfit for those purposes, for which its original elasticity rendered it so proper.

It is insoluble in spirits of wine, nor has water any more effect on it, except when assisted by heat, and then it is only softened by it.

Sulphuric acid reduced it into a black, brittle, charcoal-like substance, beginning at the surface of the *Caoout-choue*, and if the pieces are not very thin, or small, it requires some days to penetrate to their centre, during the process, the acid is rendered very dark-coloured, almost black. If the sulphuric acid is previously diluted, with only an equal quantity of water, it does not then appear to have any effect on this substance, nor is the colour of the liquid changed thereby.
Urceola Elastica, or Caout-chouc Vine.

Nitric acid reduced it in twelve hours to a soft, yellow, unelastic mass, while the acid is rendered yellow: at the end of two days, the Caout-chouc had acquired some degree of friability, and hardness. The same experiment made on American Caout-chouc was attended with similar effects. Muriatic acid had no effect on it.

Sulphuric ether only softened it, and rendered the different minute portions it was cut into, easily united, and without any seeming diminution of elasticity.

Nitric ether I did not find a better menstruum than the vitriolic, consequently if the ether I employed was pure, of which I have some doubt, this substance must differ essentially from that of America, which Berniard reports to be soluble in nitric ether.

Where this substance can be had in a fluid state, there is no necessity for dissolving, or softening it, to render it applicable to the various uses for which it may be required, but where the dry Caout-chouc is only procurable, sulphuric ether promises to be an useful medium by which it may be rendered so soft as to be readily formed into a variety of shapes.

Like American Caout-chouc, it is soluble in the essential oil of turpentine, and I find it equally so in Cajeput oil, an essential oil, said to be obtained from the leaves of Melaleuca Leucadendron. Both solutions appear perfect, thick and very glutinous; spirits of wine added to the solution in Cajeput oil, soon united with the oil and left the Caout-chouc floating on the mixture, in a soft, semifluid state, which on being washed in the same liquor, and exposed to the air, became as firm as before it was dissolved,
and retained its elastic powers perfectly. While in the intermediate states between semifluid and firm, it could be drawn out into long, transparent threads, resembling, in the polish of their surface, the fibres of the tendons of animals: when they broke, the elasticity was so great, that each end instantaneously returned to its respective mass; through all these stages the least pressure with the finger and thumb united different portions, as perfectly, as if they never had been separated, and without any clamminess, or sticking to the fingers, which renders most of the solutions of Caout-chouc, so very unfit for the purposes for which they are required. A piece of catgut covered with the half inspissated solution, and rolled between two smooth surfaces, soon acquired a polish, and consistence, very proper for bougies. Cajeput oil I also found a good menstruum for American Caout-chouc, and was as readily separated by the addition of a little spirit of wine, or rum, as the other, and appears equally fit for use; as I covered a piece of cat-gut with the washed solution, as perfectly as with that of Urceola. The only difference I could observe, was a little more adhesiveness from its not drying so quickly. The oil of turpentine had greater attraction for the Caout-chouc, than for the spirits of wine, consequently remained obstinately united to the former, which prevented its being brought into that state of firmness fit for handling, which it acquired when Cajeput oil was the menstruum.

The Cajeput solution employed as a varnish did not dry, but remained moist and clammy, whereas the turpentine solution dried pretty fast.

Expressed oils of olives and linseed proved imperfect menstruaums while cold, as the Caout-chouc in several days, was only rendered soft, and the oils viscid, but with a degree of heat equal to that which melts tin, continued for about twenty-five minutes, it was perfectly dissolved, but the solutions re-
mained thin, and void of elasticity. I also found it soluble in wax, and in butter in the same degree of heat, but still these solutions were without elasticity, or any appearance of being useful.

I shall now conclude what I have to offer on the Caout-chouc of Urceola elastica, with observing that some philosophers of eminence, have entertained doubts of the American Caout-chouc being a simple vegetable substance, and suspect it to be an artificial production, an idea which I hope the above detailed experiments will help to eradicate, and consequently to restore the histories of that substance by M. Dela Condamine, and others to that degree of credit to which they seem justly entitled; in support of which it may be further observed, that besides Urceola elastica, there are many other trees, natives of the Torrid Zone, that yield a milky juice, possessing qualities nearly of the same nature; as Artocarpus integrifolia (common jack tree; Ficus Religiosa et Indica; Hippomane biglandulosa; Cecropia peltata, &c.

The Caout-chouc of Ficus religiosa, the Hindus consider the most tenacious vegetable juice they are acquainted with; from it their best bird-lime is prepared. I have examined its qualities, as well as those of Ficus Indica and Artocarpus integrifolia, by experiments similar to those above related, and found them triflingly elastic when compared with the American and Urceola Caout-choucs, but infinitely more viscid than either, they are also inflammable, though in a less degree, and show nearly the same phenomena when immersed in the mineral acids, solution of caustic alkali, alkobol, fat and essental oils; but the solutions in Cajeput oil could not be separated by spirits of wine, and collected again like the solutions of the Urceola and American Caout-choucs.
XV.

Some account of the Astronomical Labours of Jayasinha, Rajah of Ambhere, or Jayanagar.

By William Hunter, Esq.

While the attention of the learned world has been turned towards the state of science in remote ages and countries and the labours of the Asiatick Society have been more particularly directed to investigate the knowledge attained by the ancient inhabitants of Hindustan; it is a tribute due to a congenial spirit, to rescue from oblivion those among their descendants in modern times, who rising superior to the prejudices of education, of national pride and religion, have striven to enrich their country with scientific truth derived from a foreign source.

The name of Jayasinha is not unknown in Europe; it has been consigned to immortality by the pen of the illustrious Sir William Jones: but, yet, the extent of his exertions in the cause of science is little known; and the just claims of superior genius and zeal will, I hope, justify my taking up a part of the Society's time with a more particular enumeration of his labours.

Jey-sing or Jayasinha succeeded to the inheritance of the ancient Rajahs of Ambhere, in the year of Vicramaditya 1750, corresponding to 1693 of the Christian era. His mind had been early stored with the knowledge contained in the Hindu writings, but he appears to have peculiarly attached himself to the
mathematical sciences, and his reputation for skill in them stood so high, that he was chosen by the Emperor Mahommed Shah to reform the calendar, which, from the inaccuracy of the existing tables, had ceased to correspond with the actual appearance of the heavens. Javasinha undertook the task, and constructed a new set of tables, which in honor of the reigning prince he named Zeej Mahommedshah. By these almanacks are constructed at Debly, and all astronomical computations made at the present time. The best and most authentic account of his labours for the completion of this work and the advancement of astronomical knowledge is contained in his own preface to the Zeej Mahommedshah, which follows, with a literal translation.

"Praise be to God, such that the minutely discerning genius of the profoundest geometers in uttering the smallest particle of it, may open the mouth in confession of inability; and such adoration, that the study and accuracy of astronomers who measure the heavens, on the first step towards expelling it, may acknowledge their astonishment and utter insufficiency. Let us devote ourselves, at the altar of the King of Kings, hallowed be his name! in the book of the register of whose power the
lofty orbs of heaven are only a few leaves; and the stars and that heavenly courser the sun, a small piece of money in the treasury of the empire of the most high.

If he had not adorned the pages of the table of the climates of the earth with the lines of rivers, and the characters of grasses and trees, no calculator could have constructed the almanack of the various kinds of seeds and of fruits which it contains. And if he had not enlightened the dark path of the elements with the torches of the fixed stars, the planets, and the resplendent sun and moon, how could it have been possible to arrive at the end of our wishes or to escape from the labyrinth, and the precipices of ignorance.

From inability to comprehend the all-encompassing beneficence of his power, Hipparchus is an ignorant clown, who wrings the
hands of vexation; and in the contemplation of his exalted majesty, Ptolemy is a bat, who can never arrive at the sun of truth: The demonstrations of Euclid are an imperfect sketch of the forms of his contrivance; and thousands of Jemshed Cashy, or Nuseer Toosee, in this attempt would labour in vain.'

But since the well-wisher of the works of creation, and the admiring spectator of the theatre of infinite wisdom and providence, Sevai-Jeysing from the first dawning of reason in his mind, and during its progress towards maturity, was entirely devoted to the study of mathematical science, and the bent of his mind was constantly directed to the solution of its most difficult problems; by the aid of the supreme artificer he obtained a thorough knowledge of its principles and rules,—He found that the calculation of the places of the stars as obtained from...
the tables in common use, such as the
new tables of Seid-Goorgane
and Khacane, and the Tusbeelat-
Mula-Chand-Abour-shaehee, and the
Hindu books, and the European ta-
bles, in very many cases, gives them
widely different from those deter-
mined by observation: especially the
appearance of the new moons, the
computation of which does not agree
with observation.

Seeing that very important af-
fairs both regarding religion and
the administration of empire depend
upon these; and that in the time of
the rising and setting of the planets,
and the seasons of eclipses of the sun
and moon, many considerable dif-
agreements, of a similar nature,
were found; he represented it to
his majesty of dignity and power,
the sun of the firmament of felicity
and dominion, the splendor of the
forehead of imperial magnificence,
the unrivalled pearl of the sea of so-
vereignty, the incomparably bright-
e star of the heaven of empire;
whose standard is the sun, whose
retinue the moon; whose lance is
Mars, and his pen like Mercury;
with attendants like Venus; whose
threshold is the sky, whose signet is
Jupiter; whose sentinel Saturn;
the Emperor descended from a long
race of Kings; an Alexander in
dignity; the shadow of God; the vic-
torious king, Mahommed Shah,
may he ever be triumphant in bat-
tle!

He was pleased to reply, since
you, who are learned in the mys-
teries of science, have a perfect know-
ledge of this matter; having assem-
bled the astronomers and geome-
tricians of the faith of Islam and
the Bramins and Pundits, and the
astronomers of Europe, and having
prepared all the apparatus of an ob-
servatory, do you so labour for the
ascertaining of the point in ques-
tion, that the disagreement be-
tween the calculated times of those
phenomena, and the times in which they are observed to happen, may be rectified.

Although this was a mighty task, which during a long period of time none of the powerful Rajahs had prosecuted; nor, among the tribes of Islam, since the time of the martyr-prince, whose sins are forgiven, Mirza Uluga Beg to the present, which comprehends a period of more than three hundred years, had any one of the kings possessed of power and dignity, turned his attention to this object; yet, to accomplish the exalted command which he had received, he (Jeyzing,) bound the girdle of resolution about the loins of his soul, and constructed here (at Debly) several of the instruments of an observatory, such as had been erected at Samarcan, agreeably to the Musulman books: such as Zatzul-buluck, of brass, in diameter three guz of the measure now in use, (which is nearly equal to two cubits of the
Coran) and Zat-ul-fubetein, and
Zat-ul-fubetein and Suds-Fukberi
and Shamlab. But finding that brass
instruments did not come up to the
ideas which he had formed of ac-
curacy, because of the smallness of
their size, the want of division into
minutes, the shaking and wearing
of their axes, the displacement of
the centres of the circles, and the
shifting of the planes of the instru-
ments; he concluded that the rea-
son why the determinations of the
ancients, such as Hipparchus and
Ptolemy proved inaccurate, must
have been of this kind; therefore he
constructed in Dar-ul-kbelat Shab-
Jebanabad, which is the seat of em-
pire and prosperity, instruments of
his own invention, such as Jay-per-
gās and Ram-janter and Semrāt-
janter, the semidiameter of which is
of eighteen cubits, and one minute
on it is a barley-corn and a half;
of stone and lime, of perfect flabi-
ility, with attention to the rules of
geometry, and adjustment to the
meridian, and to the latitude of the
place, and with care in the measur-
ing and fixing of them; so that the
inaccuracies from the shaking of the
circles, and the wearing of their
axes, and displacement of their cen-
tres, and the inequality of the mi-
nutes, might be corrected.

Thus an accurate method of
constructing an observatory was es-
tablished; and the difference which
had existed between the computed
and observed places of the fixed
stars and planets, by means of ob-
serving their mean motions and a-
berrations with such instruments,
was removed. And, in order to
confirm the truth of these observa-
tions, he constructed instruments of
the same kind in Sewal Jeypoor and
Matra, and Benares and Osjein.

When he compared these observa-
tories, after allowing for the differ-
ence of longitude between the pla-
ces where they stood, the observa-
tions and calculations agreed.
Hence he determined to erect similar observatories in other large cities, that so every person who is devoted to these studies, whenever he wishes to ascertain the place of a star, or the relative situation of one star to another, might by these instruments observe the phenomena. But, seeing that in many cases it is necessary to determine past or future phenomena, and also that in the instant of their occurrence, clouds or rain may prevent the observation, or the power and opportunity of access to an observatory may be wanting; he deemed it necessary that a table be constructed, by means of which the daily places of the stars being calculated every year, and disposed in a calendar, may be always in readiness.

In the same manner as the geometers and astronomers of antiquity bestowed many years on the practice of observation, thus, for the establishment of a certain me-
thod, after having constructed these instruments, the places of the stars were daily observed. After seven years had been spent in this employment, information was received, that about this time observatories had been constructed also in Europe, and that the learned of that country were employed in the prosecution of this important work; that the business of the observatory was still carrying on there, and that they were constantly labouring to determine with accuracy, the subtleties of this science. For this reason having sent to that country several skilful persons along with Padre Manuel, and having procured the new tables which had been constructed there thirty years before, and published under the name of Leyyer,† as well as the European tables anterior to those; on examining and comparing the

* Jetting finished his tables in the year of the Hijira 1141, or A. D. 1728.
† De La Hire published the first edition of his tables in 1687, and the second in 1702.
calculations of these tables with actual observation, it appeared there was an error in the former in assigning the moon’s place of half a degree; although the error in the other planets was not so great, yet the times of solar and lunar eclipses he found to come out later or earlier than the truth, by the fourth part of a g. hurry, or fifteen puls. Hence he concluded, that since in Europe astronomical instruments have not been constructed of such a size, and so large diameters, the motions which have been observed with them may have deviated a little from the truth. Since in this place, by the aid of the unerring artificer, astronomical instruments have been constructed with all the exactness that the heart can desire, and the motions of the stars have, for a long period, been constantly observed with them, agreeably to observation, the mean.

† Equal to six minutes of our time. An error of three minutes in the moon’s place would occasion this difference in time; and as it is improbable that La Hire’s tables should be inaccurate to the extent mentioned above, of half a degree, I conceive there must be an error in the original.
motions and equations were established. He found the calculation to agree perfectly with the observation. And although even to this day the business of the observatory is carried on, a table, under the name of his Majesty, the shadow of God, comprehending the most accurate rules, and most perfect methods of computation, was constructed, so that, when the places of the stars, and the appearance of the new moons, and the eclipses of sun and moon, and the conjunctions of the heavenly bodies, are computed by it, they may arrive, as near as possible to the truth, which, in fact, is every day seen, and confirmed in the observatory.

In therefore behoveth those who excel in this art, in return for so great a benefit, to offer up their prayers for long continuance of the power and prosperity of so good a king, the safeguard of the earth, and thus obtain for themselves a blessing in both worlds.
The five observatories constructed by Jayasinha still exist, in a state more or less perfect. Having had the opportunity of examining four of the number, I shall subjoin a short description of them.

The observatory at Debly is situated without the walls of the city, at the distance of one mile and a quarter. It lies S. 32° W. from the Jummah Musjid, at the distance of a mile and three quarters. Its latitude, 28° 37' 37" N., longitude, 77° 2' 27" E. from Greenwich. It consists of several detached buildings.

1. A large Equatorial Dial, of the form represented at the letter A. in Sir Robert Barker's description of the Benares observatory. (Ph. Trans. Vol. LXVII.) Its form is pretty entire, but the edges of the gnomon, and those of the circle on which the degrees were marked, are broken in several places. The length of the gnomon measured with a cord, I found to be 118 feet seven inches. Reckoning its elevation equal to the latitude of the observatory, 28° 37', this gives the length of the base 104 feet one inch, and the perpendicular height fifty-six feet nine inches, but the ground being lower at the north end, the actual elevation of the top of the gnomon above it is more than this quantity. This is the instrument called by Jayasinha Semrat-Yunter (the prince of dials.) It is built of stone, but the edges of the gnomon, and of the arches where the graduation was, were of white marble, a few small portions of which only remain.

2. At a little distance from this instrument, towards the N. W., is another equatorial dial, more entire, but smaller and of a different construction. In the middle stands a gnomon, which, as usual in these buildings, contains a stair up to

* The latitude assigned to it in the Zoij Mahommadsabey is 28° 37',—
the top. On each side of this gnomon are two concentric semicircles, having for their diameters the two edges of the gnomon. They have a certain inclination to the horizon: at the south point, I found it to be twenty-nine degrees, (nearly equal to the latitude); but at some distance from that point it was thirty-three degrees. Hence it is evident, that they represent meridians, removed by a certain angle from the meridian of the place. On each side of this part is another gnomon, equal in size to the former; and to the eastward and westward of them, are the arches on which the hours are marked. The use of the center part, above described, I have never been able to learn. The length of the gnomon, which is equal to the diameter of the outer circle, is thirty-five feet four inches. The length of a degree on the outer circle is $3\frac{1}{2}$ inches. The distance between the outer and inner circle is two feet nine inches. Each degree is divided into ten parts, and each of these is subdivided into six parts, or minutes.

3. The north wall of this building connects the three gnomons at their highest end; and on this wall is described a graduated semicircle, for taking the altitudes of bodies, that lie due east, or due west, from the eye of the observer.

4. To the westward of this building and close to it, is a wall, in the plane of the meridian, on which is described a double quadrant, having for centers the two upper corners of the wall, for observing the altitudes of bodies, passing the meridian, either to the north or south of the zenith. One degree on these quadrants measured $2\frac{1}{2}$ inches, and these are divided into minutes.

5. To the southward of the great dial are two buildings, named
Usuánah. They exactly resemble one another, and are designed for the same purpose, which is, to observe the altitude and azimuth of the heavenly bodies. They are two in number, on purpose that two persons may observe at the same time, and so compare and correct their observations.

These buildings are circular, and in the center of each is a pillar, of the same height with the building itself, which is open at top. From this pillar, at the height of about three feet from the bottom, proceed radii of stone, horizontally, to the circular wall of the building. These radii are thirty in number, the spaces between them are equal to the radii themselves, which increase in breadth as they recede from the pillar, so that each radius, and each intermediate space, forms a sector of six degrees.

The wall of the building, at the spaces between the radii, forms recesses internally, being thinner at those places, than where it joins the radii. In each of these recesses are two windows, one over the other; and in the sides of the recess are square holes, at about the distance of two feet above one another, by means of which a person may climb to the top. On the edges of these recesses are marked the degrees of the sun’s altitude, or rather, the tangents of those degrees shown by the shadow of the center pillar, and numbered from the top, from one degree to forty-five. For the altitude when the sun rises higher, the degrees are marked on the horizontal radii; but they are numbered from the pillar, outwards, beginning with one, so that the numbers here pointed out by the shadow, is the complement of the altitude. These degrees are subdivided into minutes. The spaces on the wall, opposite to the radii, are divided into six equal parts, or degrees, by lines drawn from top to bottom; but these degrees are not subdivided. By
observing on which of these the shadow of the pillar falls, we may determine
the sun’s azimuth. The parts on the pillar, opposite to the radii, and the
intermediate spaces, in all sixty, are marked by lines reaching to the top, and
painted of different colours.

In the same manner that we determine the altitude and azimuth of the
sun, we may also observe those of the moon, when her light is strong enough
to cast a shadow. Those of the moon at other times, or of a star, may also
be found, by placing the eye either on one of the radii, or at the edge of one
of the recesses in the wall (according as the altitude is greater or less than
forty-five degrees,) and moving it along till the top of the pillar is in a line
with the object. The degree at which the eye is placed will give the alti-
tude, or its complement; and the azimuth is known from the number of the
radius to which the eye is applied.

The dimensions of the building are as follow:
Length of the radius, from the circumference of the center pillar
to the wall; being equal to the height of the wall above the
radii, 24. 6
Length of one degree on the circular wall, 00. 5
Which gives for the whole circumference, 172. 6
Circumference of the pillar measured by a handkerchief carried round it: 17. 0
{ Deduced from its coloured divisions 17. 2
{ measured with compasses, 4

I do not see how observations can be made when the shadow falls on the
spaces between the stone radii or sectors; and from reflecting on this, I am in-
clined to think that the two instruments, instead of being duplicates, may be
supplementary one to the other; the sectors in one corresponding to the vacant spaces in the other, so that in one or other, an observation of any body visible above the horizon might at any time be made. This point remains to be ascertained.

6. Between these two buildings and the great equatorial dial, is an instrument called Shamlab. It is a concave hemispherical surface, formed of mason work, to represent the inferior hemisphere of the heavens. It is divided, by six ribs of solid work, and as many hollow spaces, the edges of which represent meridians, at the distance of fifteen degrees from one another. The diameter of the hemisphere is twenty-seven feet five inches.

The next, in point of size and preservation, among those which I have had the opportunity of examining, is the observatory at Oujiein. It is situated at the southern extremity of the city, in the quarter called Jeyingspoorah, where are still the remains of a palace of Jayasingha, who was soubahdar of Malwa, in the time of Mahommed Shah. The parts of it are as follow:

1. A double Mural Quadrant, fixed in the plane of the meridian. It is a stone wall, twenty-seven feet high, and twenty-six feet in length. The east side is smooth, and covered with plaster, on which the quadrants are described; on the west side, is a stair, by which you ascend to the top. At the top, near the two corners, and at the distance of twenty-five feet one inch from one another, were fixed two spikes of iron, perpendicular to the plane of the wall; but these have been pulled out. With these points, as centers, and a radius equal to their distance, two arcs of 90° are described, intersecting each other. These are divided in the manner represented in the margin. One division in the upper circle is equal to six degrees;
in the second one degree, (the extent contained in the specimen) in the third six minutes, and in the fourth one minute. One of these arcs serves to observe the altitude of any body to the north, and the other of any body to the south of the zenith; but the arc which has its center to the south, is continued to the southward, beyond the perpendicular from its center about half a degree, by which the altitude of the sun can at all times be taken on this arc. With this instrument, JAYASINHA determined the latitude of Oujein to be 23° 10' N.

Supposing the latitude here meant to be (as is most probable), that of the observatory, I was anxious to compare it with the result of my own observations; (Asiatick Researches, Vol. IV, p. 150. 152) and for that purpose, I made an accurate measurement from our camp, at SHAH DAWUL's Durgah, to the mural quadrant of the observatory. I found the southing of the quadrant from our camp to be one mile 3.9 furlongs, which makes 1° 17' difference of latitude.

The latitude of the camp by medium of two observations of the sun, is 23° 11' 54".

Deduced from the medium of six observations of fixed stars taken at RANA KAN's garden; at different latitude 7° S. = 23 11 45

From observation of the sun at the same place = 23 11 37

From two observations of α Cy taken at the house in town;

at different latitude 32° S. = 23 11 28

Latitude of SHAH DAWUL'S Durgah, by medium of all observations, = 23 11 41

Difference of latitude camp and observatory, = 1 17

Gives the latitude of the observatory, = 23 10 24

A a 2
A closer coincidence could not be expected, especially as no account is made of seconds in any of the latitudes, given in the Zeej Mabommedshaby. But, if, farther refinement were desired, we might account for the difference, by the Hindu observers not having made any allowance for refraction. Thus, if we suppose the sun’s altitude to have been observed, when on the equator, the result would be as follows:

<table>
<thead>
<tr>
<th>Latitude of the observatory,</th>
<th>23 10 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Its complement, being the true altitude of the sun on the equator,</td>
<td>66 49 36</td>
</tr>
<tr>
<td>Refraction,</td>
<td>24</td>
</tr>
</tbody>
</table>

Sun’s apparent altitude 66 50 00
Latitude of the observatory from observation of the sun upon the equator, without allowing for refraction 23 10 00

But (besides that I do not pretend that the mean of my own observations can be relied on to a less quantity than fifteen seconds,) when we consider, that a minute on the quadrant of the observatory is hardly ⅛ of an inch, without any contrivance for subdivision, we shall find it needless to descend into such minuteness; and as Jayasinha had European observers, it is not likely the refraction would be neglected, especially as the Zeej Mabommedshaby contains a table for that purpose. This table is an exact copy of Mr. De la Hire’s, which may be seen in the Encyclopædia. art. Réfraction.

This instrument is called Yâm-utter-bhiti-Yunter. With one of the same kind at Debly (No. 4, Debly Observatory) in the year 1729, Jayasinha says, he determined the obliquity of the ecliptic to be 23° 28’. In the following year (1730) it was observed by Godin 23° 28’ 20’’.
2. On the top of the mural quadrant is a small pillar, the upper circle of which, being two feet in diameter, is graduated for observing the Amplitude of the heavenly bodies, at their rising and setting. It is called *Agrā-Yunṭer*. The circles on it are very much effaced.

3. About the middle of the wall the parapet to the eastward is encreased in thickness, and on this part is constructed a horizontal dial, called *Purbbā-Yunṭer*. Its length is two feet four inches and a half, but the divisions on it are almost totally effaced.

4. *Dig-ansā-Yunṭer*, a circular building, 116 feet in circumference. It is now roofed with tiles, and converted into the abode of a Hindu deity, so that I could not get access to examine its construction, but the following account of it is delivered in the *Semrāt-Siddbanta*, an astronomical work composed under the inspection of *Jayasinha*.

On a horizontal plane, describe the three concentric circles A, B, C, and draw the north, south, east and west lines, as in the figure. Then,
on A, build a solid pillar, of any height at pleasure; on B, build a wall, equal in height to the pillar at A; and on C, a wall of double that height. From the north, south, east and west points, on the top of the wall C, stretch the threads NS, WE, intersecting each other in the point D, directly above the center of the pillar A. To the center of that pillar fasten a thread, which is to be laid over the top of the wall C, and to be stretched by a weight suspended to the other end of it.

The use of this instrument is for observing the azimuth (Dig-anfā) of the heavenly bodies; and the observations with it are made in the following manner. The observer, standing at the circumference of the circle B, while an assistant manages the thread moveable round the circle C, places his eye so that the object to be observed and the intersection of the threads, NS, WE, may be in one vertical plane; while he directs the assistant to carry the moveable thread into the same plane. Then the degrees on the circle C cut off
by the moveable thread, give the azimuth required. In order to make this observation with accuracy, it seems necessary that the point D, and the center of the pillar A, should be connected by a thread perpendicular to the horizon; but no mention is made of this in the original description.

5. Nāree-Wila-Tunter, or equinoctial dial, is a cylinder, placed with its axis horizontally, in the north and south line, and cut obliquely at the two ends, so that these ends are parallel to the equator (Nāree-Wila). On each of these ends a circle is described, the diameter of which in this instrument, is 3 feet 7½ inches. These are divided into ghurries of six degrees, into degrees, and subdivisions, which are now effaced. In the center of each circle, was an iron pin (now wanting,) perpendicular to the plane of the circle, and consequently parallel to the earth's axis. When the sun is in the southern signs, the hours are shown by the shadow of the pin to the south, and when he is in the northern signs, by that to the north. On the meridian line on both sides are marked the co-tangents, to a radius equal to the length of the centre pin. The shadow of the pin on this line at noon, points out the sun's declination.

6. Semrat-Tunter, also called Nāree-Wila, another form of equinoctial dial. (Fig. A. of Sir Robert Barker's plate) It consists of a gnomon of stone, containing within it a stair. Its length is 43 feet, 3.3 inches; height from the ground, at the south end 3 feet 9.7 inches, at the north end 22 feet, being here broken. On each side is built an arc of a circle, parallel to the equator of 90 degrees. Its radius is 9 feet 1 inch; breadth from north to south 3 feet 1 inch. These arcs are divided into ghurries and subdivisions; and the shadow of the gnomon among them, points out the hours. From the north and south extremities of the intersection of these arcs with the gnomon, are drawn
lines upon the gnomon, perpendicular to the line of their intersecion. These are consequently radii of the arcs; and from the points, on the upper edge of the gnomon where these lines cut it, are constructed two lines of tangents, one to the northward, and another to the southward, to a radius equal to that of the arc. To find the sun's declination, place a pin among these divisions, perpendicular to the edge of the gnomon; and move it backwards and forwards, till its shadow falls on the north or south edge of the arc below: the division on which the pin is then placed, will shew the sun's declination. In like manner, to find the declination (kránti) of a star, and its distance in time, from the meridian (Net-gburry) place your eye among the divisions on the arc, and move it, till the edge of the gnomon cut the star; while an assistant holds a pin among the divisions on the edge of the gnomon, so that the pin may seem to cover the star. Then the division on the arc at which the eye was placed, will shew the distance of the star from the meridian; while the place of the pin, in the line of tangents, will shew its declination.

At Matra, the remains of the observatory are in the fort, which was built by Jayasinha on the bank of the Jumna. The instruments are on the roof of one of the apartments. They are all imperfect, and in general of small dimensions.

1. An Equinoctial Dial, being a circle nine feet two inches in diameter, placed parallel to the plane of the equator, and facing northwards. It is divided into ghurries of six degrees each: each of these is subdivided into degrees, which are numbered as puls 10, 20, 30, 40, 50, 60: lastly, each subdivision is farther divided into five parts, being 12', or two puls. In the center is the remains of the iron style, or pin, which served to cast the shadow.
2. On the top of this instrument is a short pillar, on the upper surface of which is an amplitude instrument, (like that described No. 2, Onjein observatory, called Agra-Yunter,) but it is only divided into octants. Its diameter is two feet five inches.

3. On the level of the terrace is another amplitude instrument, divided into sixty equal parts. Its diameter is only thirteen inches.

4. On the same terrace is a circle, in the plane of the horizon, with a gnomon similar to that of a horizontal dial, but the divisions are equal, and of six degrees each. It must therefore have been intended for some other purpose than the common horizontal dial, unless we may conceive it to have been made by some person who was ignorant of the true principles of that instrument. This could not have been the case with Jayasinha and his astronomers; but the instrument has some appearance of being of a later date than most of the others: They are all of stone or brick, plastered with lime, in which the lines and figures are cut; whereas the plaster of this instrument, though on the level of the terrace, and consequently more exposed to accident than the others, is the freshest and most entire of all.

5. On the east wall, but facing westwards, is a segment, exceeding a semicircle, with the arch downwards. It is divided into two parts, and each of these into fifteen divisions. Its diameter is four feet. On the west wall, facing eastwards, is a similar segment, with the arch upwards, divided in the same way as the former. Its diameter is seven feet nine inches.

The observatory at Benares having been described by Sir Robert Bar-
and Mr. Williams, I have only a few remarks to offer, in addition to the account delivered by those gentlemen.

1. A, (of Sir R. Barker's plate) is the Semrat-Tunter, described Debly observatory, No. 1, and Oujein observatory, No. 6. The arcs on each side are carried as far as ninety-six degrees, which are subdivided into tenth parts. Each space of six degrees is numbered from the bottom of the arc towards the top, sixteen in each arc. Each of these is equal to twenty-four minutes of our time, which answers to the Hindu astronomical ghurry. Besides the stair contained in the gnomon, one ascends along the limb of each arc. The dimensions have been given by Mr. Williams, with an accuracy that leaves me nothing to add on that head. With respect to the reason of the name, I am somewhat in doubt. It may have been given from its eminent utility; but the Rajab had conferred on one of his principal Pandits the title of Semrat or Prince, and perhaps this instrument, as well as the Semrat Siddhanta may have been denominated in compliment to him; as another instrument (which I have not been able to find out) was called Jey-Pergds in allusion to the Rajab's name.

B. is the equinoctial Dial or Naree-Wila of No. 5, Oujein observatory. The name given by the Pandits to Mr. Williams, (gentu-roje) probably ought to be Tunter or Tunter-raj, q. d. the royal Dial.

C. Is a circle of iron, faced with brass, placed between two stone pillars, about the height of the eye, and revolving round one of its diameters, which is fixed parallel to the axis of the world. The breadth of the rim of the circle is two inches, the thickness of iron one inch, of brass three tenths of an inch. The diameter mentioned before, is nearly of the same breadth and
thickness with the rim. The limb is divided into 360 degrees, each degree into four equal parts; and there are larger divisions containing six degrees each. The size of a degree is ⅛ of an inch. Round the center revolves an index of brass; the end of which is formed as in the margin; and the line a b, which produced, passes through the center of the circle, marks the degrees. From this description, it appears that the circle, when placed in a vertical position, is in the plane of the meridian of Benares; when it declines from that position, it represents some other meridian. Were there any contrivance for measuring the quantity of this deviation, it would answer the purpose of an Equatorial Instrument, for determining the place of a star, or any other phenomenon in the heavens. For, by moving the circle and its index, till the latter points exactly to the object, the degrees of deviation from the vertical position, would mark the distance of the object from the meridian; and the degrees on the circle, intercepted between the index and the diameter which is perpendicular to that on which it revolves, would show its declination. This last may indeed be observed with the instrument in its present state; but I am inclined to think that there has been some contrivance, for the former part also; having been informed by a learned Pandit, that in two rings of this kind, in the Jeynagur observatory, such contrivance actually exists. On one of the pillars that support the axis, a circle is described, parallel to the equator, divided into degrees and minutes; to the axis of the moveable circle is fixed an index, which is carried round by the motion of that circle, and thus points out, among the divisions on the immovable circle, the distance from the meridian, of the body to be observed.

**Observations with this instrument cannot have admitted of much ac-**
curacy, as the index is not furnished with sights; and the pin by which it is fixed to the center of the circle is so prominent, that the eye cannot look along the index itself.

The literal meaning of the Sanskrit term *Kranti-writ*, is *circle of declination*, which may with some propriety have been applied to this instrument, as mentioned by Mr. Williams. But this name is, in the Hindu astronomical books, peculiarly appropriated to the ecliptic; and as the *Smrata Siddhanta* contains the description of an instrument, called *Kranti-writ-yunter*, wherein a circle is made, by a particular contrivance, to retain a position parallel to the ecliptic, I am inclined to believe that the appellation has been erroneously given to the ring above described.

D. is the *Dig-anfa-yunter*, No. 4, Oujein observatory. The "iron pins with small holes in them, on the top of the outer wall, at the four cardinal points," are undoubtedly, as the Pandits informed Mr. Williams, for stretching the wires, or threads, the use of which is fully explained above.

The quadrant described by Sir Robert Barker, but not represented in his plate is the *Yam-utter-bbitti-yunter*, described Oujein Observatory, No. 1.

On the south-east corner of the terrace is a small platform raised above its level, so that you mount upon it by a flight of steps. Upon this we find a circle of stone, which Mr. Williams found to be six feet two inches in diameter, in a position inclined to the horizon. Mr. Williams, says it fronts the west, and that he could not learn the use of it. I dare not, without further examination, oppose to this, what I find in my notes, taken in 1786; that it stands in the plane of the equinoctial. If that is the case, it has been
clearly intended for a dial of the same kind as fig. B. and probably, as Mr. Williams says, never completed, as I found no appearance of graduation on the circle.

Having described those among the observatories constructed by Jayasinha which have fallen under my observation, I proceed to give some account of the tables entitled Zeej-Mahommedbaby. But here I should regret, that, not having access to the Tabula Ludovicae of La Hire, I am unable to determine, whether those of Jayasinha are merely taken from the former, by adapting them to the Arabian lunar year; or whether, as he asserts, they are corrected by his own observations; did not the zeal for promoting enquiries of this nature, manifested in the queries proposed to the Asiatick Society by Professor Playfair (to whom I intend to transmit a copy of the Zeej-Mahommedbaby) convince me, that he will ascertain, better than I could have done, the point in question.

1. Tables of the sun, consist of,
   1. Mean longitudes of the sun and of his apogee, for current years of the Hejira, from 1141 to 1171 inclusive.
   2. Mean motions of the sun, and of his apogee for the following periods of Arabian years, viz. 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 600, 900, 1200.
   3. Mean motions of the sun, and of his apogee for Arabian months.
   4. The same for days, from 1 to 31.
   5. The same for hours, 24 to a natural day; but these are continued to 61; so that the numbers answering to them, taken for the next lower denomination, answer for minutes, &c.
   6. The same for years complete of the Hejira, from 1 to 31.
7. The equation of time.

8. The sun's equation, or equation of the orbit. Argument, his mean anomaly, corrected by the equation of time. If this is in the northern signs, the equation is to be subtracted from his place, corrected by the equation of time, if in the southern to be added.

9. The sun's distance, his borary motion and apparent diameter. Argument his equated anomaly.

II. Tables of the moon.

1-6 contain the mean longitudes and motions of the moon, of her apogee and node, for the same periods as the corresponding tables of the sun.

7. The moon's first equation, or elliptic equation. Argument, her mean anomaly, corrected by the equation of time, to be applied to her place corrected by the equation of time, in the same manner as the equation of the sun to his.

8. The moon's second equation, is to be applied in three places; viz. to her longitude and apogee corrected by the first equation, and to the node. It has two arguments.

1. From the moon's longitude once equated, subtract the sun's equated place. The signs and degrees of this are at the top and bottom of the table.

2. From the moon's place once equated subtract the place of the sun's apogee. The signs and degrees of this are on the right and left of the table.

The equation is found at the intersection of the two arguments.

If the second argument is in the first half of the zodiac, and the first argument in the first or fourth quarter, the equation is to be added; in the se-
cond or third, to be subtracted. But, if the second argument is in the second half of the zodiac, and the first argument in the first or fourth quarter, it is subtractive; and in the second or third quarter, it is additive.

9. The moon's third equation, has also two arguments:

1. From the moon's place, corrected by the second equation, subtract the sun's true longitude; the signs and degrees of this are at the top and bottom of the table.

2. The moon's mean anomaly, corrected by the second equation: the signs and degrees are on the right and left of the table.

The equation is found at the intersection of the arguments; and is to be applied to the moon's longitude twice equated, by addition or subtraction, as expressed in the table, to give her true place in the Felek-Mayel or in her Orbit.

10. Equation of the node.

Argument, the moon's longitude thrice equated, diminished by that of the sun. The equation is to be added to, or subtracted from, the place of the node, as expressed in the table.

In the same table is a second column, entitled correction of the node. The numbers from this is to be reserved, and applied farther on.

11. The moon's fourth equation, or reduction from her Orbit to the Ecliptic.

From the moon's longitude thrice equated, subtract the equated longitude of the node, the remainder is the argument of latitude; and this is also the argument of the fourth equation; which is to be subtracted, if the argument is in the first or third quarter, from the moon's place in her Orbit; and if the argument is in the second or fourth quarter, added to the same, to give her longitude in the Mumufil; i.e. reduced to the ecliptic.

12. Table of the moon's latitude; contains two columns; latitude and adjustment of the latitude. Both of these are to be taken out by the signs and degrees of the argument of latitude.
Multiply into one another, the correction of the node and the adjustment of the latitude; and add the product to the latitude of the moon, as taken out of the table to give the latitude correct; which is northern, if the argument of latitude be in the first half of the zodiac, and vice versa.

III. Tables of Saturn.

1.—6. Contain the mean longitudes and motions of Saturn, of his apogee and nodes, for the same periods as the corresponding tables of the sun and moon.

7. First equation. Argument, Saturn's mean anomaly; if in the first six signs, subtractive, and vice versa.

8. Equation of the node. Argument, the argument of latitude, found by subtracting the longitude of the node, from that of Saturn once equated. Additive in the first and fourth quarters, subtractive in the second and third.

9. Saturn's second equation, or reduction of his orbit to the ecliptic. Argument, the corrected argument of latitude, or difference between Saturn's longitude once equated and the equated longitude of the node. This equation to be added to, or subtracted from the planet's longitude once equated, (or his place in his orbit) in the same cases as indicated in the corresponding table of the moon.

10. Table of Saturn's inclination. Argument, the argument of latitude.

11. Table of Saturn's distance. Argument his mean anomaly, corrected by the second equation.

IV. Tables of Jupiter, correspond with those of Saturn, excepting that there is no equation of the node, so that they are only ten in number.
V, VI, VII. Tables of Mars, Venus and Mercury, agree in number, denomination, and use, with those of Jupiter.

For several parts of the foregoing information I am indebted to the grandson of a Pandit, who was a principal co-adjutor of Jayasinha in his astronomical labours. The Rajah bestowed on him the title of Jyotish-ray, or Astronomer-royal, with a jageer which produced 5000 rupees of annual rent. Both of thesedescended to his posterity; but from the incursions and exactions of the Mahrattas the rent of the jageer land was annihilated. The young man finding his patrimonial inheritance reduced to nothing, and that science was no longer held in estimation, undertook a journey to the Decan, in hopes that his talents might there meet with better encouragement; at the same time, with a view of visiting a place of religious worship on the banks of the Nerbudda. There he fell in with Rung Raw Appah, deewan of a powerful family of Powar, who was on his march to join Aly Bahadur in Bundelcund. With this chief the Pandit returned, and arrived at Oujain while I was there. This young man possessed a thorough acquaintance with the Hindu astronomical science contained in the various Siddhantas; and that not confined to the mechanical practice of rules, but founded on a geometrical knowledge of their demonstration. Yet he had inherited the spirit of Jayasinha in such a degree, as to see and acknowledge the superiority of European science. In his possession I saw the translations into Sanscrit of several European works, executed under the orders of Jayasinha; particularly Euclid's Elements, with the treatises of plain and spherical trigonometry, and on the construction and use of logarithms, which are annexed to Cunn's or Commandine's edition. In this translation, the inventor is called Don Juan Napier, an additional presumption that Jayasinha's European astronomers were of the Portuguese nation. This indeed, requires little confirma-
tion, as the son of one of them, Dorn Pedro de Sylva is still alive at \textit{Jayanagar}; and Pedro himself, who was a physician as well as astronomer, has not been dead more than five or six years. Besides these, the Pandit had a table of Logarithms, and of Logarithmic sines and tangents, to seven places of figures; and a treatise on Conic sections.

I have always thought, that after having convinced the eastern nations of our superiority in policy and in arms, nothing can contribute more to the extension of our national glory, than the diffusion among them of a taste for \textit{European} science. And as the means of promoting so desirable an end, those among the natives who have penetration to see, and ingenuity to own its superior accuracy and evidence, ought to be cherished. Among those of the \textit{Islamic} faith, Tuffuzzul Hussein Khan, who by translating the works of the immortal Newton, has conducted those imbued with \textit{Arabick} literature to the fountain of all physical and astronomical knowledge, is above my praise. I hoped that the Pandit Jyotish Ray, following the steps of his ancestor, and of his illustrious master, might one day render a similar service to the disciples of Brahma. But this expectation was disappointed by his sudden death at \textit{Jayanagar}, soon after our departure from \textit{Onjein}: and with him the genius of Javasinha became extinct. \textit{Urania} fled before the brazen-fronted Mars, and the observatory was converted into an arsenal and foundery of cannon.

The Hindu astronomy, from the learned and ingenious disquisitions of Mr. Bally and professor Playfair, appears to carry internal marks of antiquity, which do not stand in need of confirmation by collateral evidence. Else, it is evident from the foregoing account, that such could not be derived from the observatories which have been described by travellers; those being
of modern date, and as probably of European as of Hindu construction. The assistance derived by Jayasinha from European books also inclines me to think, that the treatise entitled *Cibetradersia*, which was inspected by Captain Wilford's Pandit (Asiat. Res. v. 4, p. 178) was not confined to geometrical knowledge, of purely Brahminical origin.
XVI.

DESCRIPTION of a species of Meloë, an insect of the 1st or Coleopterous order in the Linnean system: found in all parts of Bengal, Behar and Oude; and possessing all the properties of the Spanish blistering Fly, or Meloë vesicatorius.—By Captain HARDWICKE, communicated by Mr. W. HUNTER.

ANTENNÆ MONILIFORM, short, consisting of eleven articulations, increasing in size from the second to the apex; the first nearly as large as the last; each a little thicker upwards than at the base and truncated, or as if cut off the last excepted which is egg form.

Palpi—four, unequal club’d the posterior pair of three, and the anterior, of two articulations.

Maxillæ or jaws—four, the exterior horny, slightly curved inwards three toothed—the two inferior teeth very small;—the exterior pair, compressed, and brush like.

Head—gibbous; eyes prominent, large, reticulated; labium or upper lip, hard, emarginated.

Thorax—convex above—broader towards the abdomen and encompassed by a narrow marginal line.

Elytra crustaceous the length of the abdomen, except in flies pregnant with eggs, when they are shorter by one ring; convex above, concave beneath; yellow, with three transverse, black irregular undulated bands; the one at the apex broadest, and that at the base dividing the yellow longitudinally, into two spots: punctated, or ridged; the ridges longitudinal, and parallel.
to the future; in number, three equal, one unequal, the ridges not very prominant.

Also or wings—membranous, a little exceeding the elytra in length, and the ends folded under.

The tarsi of the two first pair of feet consist of five articulations, and of the posterior pair, four only.

Every part of the insect excepting the wings and elytra is black, oily to the touch, and covered more or less with dense hairs; a few scattered hairs are also evident on the elytra. All the crustaceous parts of the insect are pitted minutely. It is about the bigness of the *Meloë Proscarabaeus* of Linn. and a full grown one when dry and fit for use is to the *M. Vesicatorius* in weight as $\frac{4}{5}$ to 1.

They come into season with the periodical rains, and are found from the month of July to the end of October, feeding on the flowers of Cucurbitaceous plants, but more frequently on the species of *Cucumis* called by the natives, Turiey; with a cylindrical, smooth, ten angled fruit. Also on the *Radam Turiey*; or *Hibiscus Esculentus*, *Hibiscus*, *Rosa Sinensis*—and in jungles where these plants are not to be found, they are to be met with on two or species of *Sida*, which flourish in that season.

In the failure of flowers, they will feed on the leaves of all these plants except the *Turiey*—which I have not observed them eat. They are great devourers and will feed as freely in confinement as at large.

In September they are full of eggs, which seems to be the best state in which they can be taken for medicinal use, at that time abounding more a-
bundantly in an acrid yellow oil, in which probably resides their most active property.

This fluid seems the animal's means of rendering itself obnoxious to others: for on the moment of applying the hand to seize it, it ejects a large globule from the knee joint of every leg, and this if suffered to dry on the fingers, soon produces an uncommon tingling in the part, and sometimes a blister. This is the only inconvenience attending the catching of them, for they make no resistance: on the contrary, they draw in the head towards the breast as soon as touched, and endeavour to throw themselves off the plant they are found on.

The female produces about 150 eggs, a little smaller than a caraway seed, white and oblong oval. Their larvæ I have not seen, therefore as yet know not where they deposit their eggs.

Their flight from plant to plant is slow, heavy, and with a loud humming noise, the body hanging almost perpendicular to the wings.

They vary in the colour of the elytra from an orange red, to a bright yellow, but I do not find this variety constitutes any difference in sex.

The natives of this part of the country know the insect by the name Tel-eene expressive of its oily nature, they are acquainted with its blistering properties, but I do not find they make any medicinal use of it.

The drawing which accompanies this description exhibits the fly of its natural size.

Futte-Ghur, September 1796.
Description of a

Report on the Meloë, or Lytta—By W. Hunter, Esq.

The circumstance respecting your new species of Meloë or Lytta, which I lately had occasion to observe, was shortly as follows:

Tincture of them was directed as an external application to a man's arm, which was paralytic in consequence of rheumatism. On the first application several vesications were raised, as completely distended with serum as if a blister had been applied. I am not particularly informed what proportion the flies bore to the menstruum, but think it was something greater than that directed by the London College for the tincture of the officinal kind.

March 9th, 1796.

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Report on the effect produced by a species of Meloë, found in Bengal, Behar and Oude, by W. R. Monroe, Esq.

I received your packet containing the specimens of the new blistering fly, a few days ago, whilst I was busily employed in preparations for my departure from this station. I lost no time however in making a trial of their efficacy, on three different patients who required blistering.

They succeeded in each trial; though the effect was in none produced completely in less than ten hours; and the vesications even then were filled with a serum rather gelatinous than fluid.

As far as these few trials authorise a conclusion, we may safely consider them a valuable substitute for the cantharides; though I should think they will not in general be found so active as the Spanish fly, in its most perfect state of pre-
servation. Captain Hardwicke has certainly however made a most useful addition to our Asiatick Materia Medica; and he may rely on it that if I should inadvertently mention the discovery, I shall not fail to give him also the merit he is so fairly entitled to for it. The country people I find give the fly different names, so that there are I suppose many species of it, the most efficacious of which he will in his account of it particularize.

REFERENCES.

A. A full grown insect of its natural size.
B. The same reversed, to shew the under part of the body and limbs.
C. The Eggs.
D. An Elytron of another fly, to shew the difference of colour and spots at the base.
E. A wing displayed.
F. The head magnified.
G. The labium or lip.
H. The horny, or exterior jaws.
I. The hairy interior ditto.
K. The posterior pair of palpi.
L. The anterior or lesser ditto.
XVII.

A comparative Vocabulary of some of the Languages spoken in the Burma Empire.—By Francis Buchanan, M. D.

To judge from external appearance, that is to say from shape, size, and feature, there is one very extensive nation that inhabits the east of Asia. It includes the eastern and western Tartars of the Chinese authors; the Casmucs, the Chinese, the Japponefe, the Malays, and other tribes inhabiting what is called the peninsula of India beyond the Ganges; and the islands to the south and east of this, as far at least as New Guinea. This however is speaking in a very general sense, many foreign races being intermixed with this nation, and perhaps many tribes belonging to it being scattered beyond the limits I have mentioned.

This nation may be distinguished by a short, squat, robust, fleshy stature, and by features highly different from those of an European. The face is somewhat in shape of a lozenge, the forehead and chin being sharpened, whilst at the cheek bones it is very broad: unless this be what is meant by the conical head of the Chinese, I confess myself at a loss to understand what that is. The eye-brows or superciliary ridges in this nation project very little, and the eyes are very narrow, and placed rather obliquely in the head, the external angles being the highest. The nose is very small, but has not, like that of the negro, the appearance of having been flattened; and
the apertures of the nostrils, which in the European are linear and parallel, ti uhem are nearly circular and divergent; for the septum narium being much thickest towards the face, places them entirely out of the parallel line. The mouths of this nation are in general well shaped; their hair is harsh, lank, and blank. Those of them that live even in the warmest climates, do not obtain the deep hue of the negro or Hindu; nor do such of them as live in the coldest countries, acquire the clear bloom of the European.

In adventitious circumstances, such as laws, customs, government, political maxims, religion, and literature, there is also a strong resemblance among the different states composing this great nation; no doubt arising from the frequent intercourse that has been among them. But it is very surprising, that a wonderful difference of language should prevail. Language, of all adventitious circumstances, is the surest guide in tracing the migrations and connections of nations, and how in a nation, which bears such strong marks of being one radically the same, languages totally different should prevail, I cannot at present pretend to conjecture: but in order to assist in accounting for the circumstance, having, during my stay in the Burma empire, been at some pains to collect a comparative vocabulary of such of the languages spoken in it, as opportunity offered, I have thought it might be curious to publish it. I am sensible of its many imperfections: but it is a beginning, which I hope hereafter to make more compleat, and where I fail, others without doubt will be more successful.

In all attempts to trace the migrations and connections of tribes by means of language, it ought to be carefully remembered, that a few coincidences, obtained by searching through the whole extent of two dictionaries, is by
no means the least proof of affinity: for our organs being only capable of pronouncing a certain, and that a very limited number of sounds, it is to be expected, according to the common course of chance, that two nations in a few instances, will apply the same sound to express the same idea. It ought also to be observed, that in tracing the radical affinities of languages, terms of art, men’s names, religious and law phrases are of all words the most improper: as they are liable constantly to be communicated by adventitious circumstances from one race of men to another. What connection of blood have we Europeans with the Jews, from whom a very great proportion of our names and religious terms are derived? Or what connection have the natives of Bengal with the Arabs or English, from whom they have derived most of their law and political terms? With the former they have not even had political connection: as the phrases in question were derived to them through the medium of the Persians and Tartars. Two languages therefore ought only to be considered as radically the same, when of a certain number of common words chosen by accident, the greater number have a clear and distinct resemblance. A circumstance, to which if antiquarians had been attentive, they would have been saved from the greater part of that etymological folly, which has so often exposed their pleasing science to the just ridicule of mankind.

In the orthography I have had much difficulty. Two people will seldom write in the same way, any word of a language with which they are unacquainted. I have attempted merely to convey to the English reader, without any minute attention to accent, or small variations of vowels, a sound similar to that pronounced: nor have I paid any attention to the orthography of the natives. This in the Burma language I might have done; but as I am not acquainted with the writing of the other tribes, I thought
it the safest method to express the sound merely. The following scheme of vowels, in order to read my vocabulary correctly, must be kept in mind.

A—pronounce as in the English words bad, bat, had, hat.
Aw—or broad Scotch a, as in bawd.
Ay—as the English a, in babe, bake, bare: day, pay, hay,
Ee—in order to avoid confusion, I use for the English e: as they have exactly the same sound.
Æ—I use for the French and Scotch c open.
U—I always found as in the word duck: using oo for its other sound, as in book.
Ou—I found as in found, bound.
Au—is nearly similar but broader, a sound scarcely to be met with in the English language.
Ei—I use as the vowel in bind, find, &c.
Ai—nearly the same, but broader, These two sounds, as far as I remember.
Oe—I use to express the French U, § ber, are not used by the English.

It is to be observed, that the pronunciation among all these tribes, to a stranger appears exceedingly inarticulate. In particular they hardly ever pronounce the letter R; and T, D, Th, S, and Z are almost used indiscriminately. The same may be said of P and B. Thus the word for water, which the Burmas universally pronounce Xæ, is written Rae: and the Pali name for their capital city Amarapóora is commonly pronounced Amáapóoya. This indistinct pronunciation probably arises from the excessive quantity of betel, which they chew. No man of rank ever speaks without his mouth being as full as possible, of a mixture of betel leaf and nut, tobacco, quicklime, and spices. In this state he is nearly deprived of the use of his
tongue in articulation, which although not the only organ of speech, is yet of such use in articulation, as to be commonly considered as such. Hence it is that an indistinct articulation has become fashionable, even when the tongue is at liberty.

I shall begin with the Burma language as being at present the most prevalent. There are four dialects of it: that of the Burma proper, that of Arakan, that of the Yo, and that of Tenasserim.

The people called by us Burmas, Barmas, Vermas, Brimmas, &c. file themselves Myammar. By the people of Pegu, they are named Pummay; by the Karaye, Yoo; by the people of Cuffay, Aewsaw; by the Cuffay Shan, Kamman; by the Chinese of Ynan, Laie meen; and by the Aykobat, Aewsaw. They esteem themselves to be descended from the people of Arakan, whom they often call Myammarogyee, that is to say, great Burmas.

The proper natives of Arakan call themselves Yakain, which name is also commonly given to them by the Burmas. By the people of Pegu they are named Takain. By the Bengal Hindus, at least by such of them as have been settled in Arakan, the country is called Rosfawn, from whence, I suppose, Mr. Rennell has been induced to make a country named Rosfawn occupy part of his map, not conceiving that it could be Arakan, or the kingdom of the Mugs, as we often call it. Whence this name of Mug, given by Europeans to the natives of Arakan has been derived, I know not: but as far as I could learn, it is totally unknown to the natives and their neighbours, except such of them as by their intercourse with us have learned its use. The Mahomedans settled at Arakan call the country Rovingaw, the Persians call it Rekbah.
The third dialect of the Burma language is spoken by a small tribe called *Ye*. There are four governments of this nation, situated on the east side of the Arakan mountains, governed by chiefs of their own, but tributary to the Burmas.

The fourth dialect is that of what we call the coast of Tenasserim, from city now in ruins, whose proper name was Tanayntbaree. These people commonly called by the Burmas, Daswayza and Byeitza, from the two governments of which their country consists, have most frequently been subject to Siam or Pegu; but at present they are subjects of the Burma king.

Although the dialects of these people to one another appear very distinct, yet the difference consists chiefly, in such minute variations of accent, as not to be observable by a stranger. In the same manner as an Englishman at first is seldom able to distinguish even the Aberdeen accent from that of the other shires of Scotland, which to a Scotchman appears so different; so in most cases, I could perceive no difference in the words of these four languages, although among the Burmas, any of the provincials speaking, generally produced laughter, and often appeared to be with difficulty understood. I shall therefore only give a list of the Burma words: those of the other dialects are the same, where the difference is not mentioned.

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The next most prevalent language in India beyond the Ganges, is what we call the Siammese, a word probably corrupted from the Shan of the Burmas. The Siammese race occupies the whole frontier of Yunnan, extending on the east to Tonquin and Cochinchina, and on the south down to the sea. It contains many states or kingdoms, mostly subject or tributary to the Burmas. I have only procured vocables of three of its dialects, which I here give compleat, as they differ considerably.
The first dialect is that of the kingdom of Siam, the most polished people of eastern India. They called themselves to me simply Tai: but Mr. Loubere says, that in order to distinguish themselves from a people to be afterwards mentioned, they add the word Ngy which signifies little. By the Burmas, from the vulgar name of their former capital city, they are called Yowdaya; by the people of Pegu they are named Seeu: and by the Chinese of Yunnan Syanlo or Kyenlo.

The second dialect of the Siammese language, which I shall mention, is that of a people, who to me also called themselves simply Tai. I believe, however they are the Tai-yay, or great Tai, of Mr. Loubere. They have been long subject to the Burmas, who call them Meelaosban. By the people of Pegu they are named Seera: They by the Karayu; Looktai by the Katbesban; Kabo by the people of Katbee or Gussy; Pawgyee by the Chinese; and to me they were named Lau by the Siammese proper. Their country towards the north lies between the west side of Yunnan and the Eravade or great Burma river, descending down its eastern bank for a considerable way: it then extends along the south side of Yunnan till it comes to the Leukiang or river of Martahau, which forms its eastern boundary; on the south it extends to no great distance from Martahau: and on the west it is separated from Burma proper by a chain of mountains, that pass about fifty miles to the east of Ava.

The third dialect of the Siammese language is that of a people called by the Burmas Katbee Shawn; to themselves they assume the name of Tai-loong or great Tai. They are called Maitay Kabo by the Katbee or people of Gussy. They inhabit the upper part of the Kwaynduayn river, and from that west to the Eravade. They have in general been subject to the King of Munypura; but at present are tributary to the Burma monarch.
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The next language, of which I shall give a specimen, is that of the people,

* Kau is rice, and Nam is water. Here therefore we have a nation with no word to express the difference between eating and drinking. The pleasures of the table must be in little request with them.
who call themselves Moitay. Their country is situated between Sylhet in Bengal, and that of the Tailoong above mentioned: to the north of it is Assam; on the south Arakan, and the rude tribes bordering on that kingdom. Their capital city they name Munnypura. By the people of Bengal, they are called Muggaloor, an appellative, with which those we saw at Amarapura were totally unacquainted. This name however, Europeans have applied to the country, turning it at the same time into Meckley. Katbee is the name given to this people by the Burmas, which we also have taken for the name of the country, and corrupted into Cuffay. Mr. Rennel having from Bengal obtained information of Meckley, and from Ava having heard of Cuffay, never conceived that they were the same, and accordingly in his Map of Hindustan has laid down two kingdoms, Cuffay and Meckley; for which indeed he had sufficient room, as by Captain Baker’s account he had been induced to place Ava much too far to the east.

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</table>

In the intermediate space between Bengal, Arakan, the proper Burma, and the Kingdom of Munnypura, is a large mountainous and woody tract. It is occupied by many rude tribes. Among these the most distinguished, is that by the Burmas called Kiayn, from whom is derived the name of the great western branch of the Eravade for Kiaynduayn signifies the fountain of the Kiayn. This people calls itself Koloun, and it seems to be a numerous race, universally spoken of by its neighbours as remarkable for simple honesty, industry, and an inoffensive disposition.
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<tr>
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<td>Seehay</td>
</tr>
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<td>Here</td>
<td>Næa</td>
</tr>
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<td>There</td>
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</tr>
<tr>
<td>Above</td>
<td>Akloengung</td>
</tr>
<tr>
<td>Below</td>
<td>Akoa</td>
</tr>
</tbody>
</table>

Another rude nation, which shelters itself in the recesses of hills and woods from the violence of its insolent neighbours, is named by the Burmas Karayn, and Kadoon by the people of Pegu. They are most numerous in the Pegu kingdom, and like the Kiayn are distinguished for their inno-
By the Burmas they are said to be of two kinds; Burma and Talain-Karayn. Some of them, with whom I conversed, seemed to understand this distinction, calling the former Passooko, and the latter Maploo. This however probably arose from these individuals being better acquainted with the Burma ideas than the generality of their countrymen; for the greater part of those, with whom I conversed, said, that all Karayn were the same, and called them Play. I am however not certain if I understood them rightly; nor do I know, that I have obtained the proper name of this tribe. I have given a vocabulary of each of these, who seemed to understand the distinction of Burma and Talain Karayn, and two of different villages, who did not understand the difference: for in this nation I found the villages differing very much in dialect, even where not distant, probably owing to their having little communication one with another. It must be observed, that in using an interpreter, one is very liable to mistakes; and those I had were often very ignorant.

<table>
<thead>
<tr>
<th>V. English</th>
<th>Passooko</th>
<th>Maploo</th>
<th>Play No. 1</th>
<th>Play No. 2</th>
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<td>Moo</td>
<td>Moomay</td>
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</tr>
<tr>
<td>2 Moon</td>
<td>Law</td>
<td>Law</td>
<td>Poolaw</td>
<td></td>
</tr>
<tr>
<td>3 Stars</td>
<td>Tlaw</td>
<td>Sheeaw</td>
<td>Shaw</td>
<td></td>
</tr>
<tr>
<td>4 Earth</td>
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<td>Kolangkoo</td>
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<td>Lankoo</td>
</tr>
<tr>
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<td>Tee</td>
<td>Tee</td>
<td>Tee</td>
<td></td>
</tr>
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<td>Loung</td>
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<td>Lee</td>
<td>Lee</td>
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<td>Pasha</td>
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<td>To</td>
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<td>Hokoo</td>
<td>Lankoo</td>
<td>Laepanla</td>
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</table>

To the kingdom, the natives of which call themselves Moan, we have given the name of Pegu, a corruption of the vulgar appellation of its capital city Bagpo; the polite name of the city among its natives having been Dum Hanga, as among the Burmas Hanzawade. This people are named Talain by the Burmas and Chinese of Yinan; Lawoo by the Karayn; and Tarain by the Tailoong. Their kingdom extends along the mouths of the two great rivers Eraawade and Thanluayn, or of Ava and Martaban, from the frontiers of Arakan, to those of Siam.

VI. English | Moan | English | Moan |
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FF 2
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</tr>
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<td>Kaffe</td>
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<td>37 Ten</td>
<td>Tfo</td>
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<td>Tsapoun. Poun, I believe is rice.</td>
</tr>
<tr>
<td>39 Drink</td>
<td>Saung naut. Naut is water.</td>
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<tr>
<td>40 Sleep</td>
<td>Steik</td>
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<td>41 Walk</td>
<td>Au</td>
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<td>Taukua</td>
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<tr>
<td>49 Above</td>
<td>Tattoo commoocce</td>
</tr>
<tr>
<td>50 Below</td>
<td>Tauamo.</td>
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</tbody>
</table>

These fix are all the languages of this great Eastern nation, of which during my stay in the Burma empire I was able to procure vocables sufficient for my purpose. Although they appear very different at first sight,
and the language of one race is totally unintelligible to the others; yet I can perceive in them all some coincidences, and a knowledge of the languages, with their obsolete words, their phrases, their inflexions of words, and elisions _euphoniae causa_, would perhaps show many more. Those that have the greatest affinity are in Tab. I. IV. and V. Mr. Gilchrist, whose knowledge of the common dialects in use on the banks of the Ganges is, I believe, exceeded by that of no European, was so obliging as to look over these vocabularies; but he could not trace the smallest relation between the languages.

I shall now add three dialects, spoken in the Burma empire, but evidently derived from the language of the Hindu nation.

The first is that spoken by the *Mohammedans*, who have been long settled in Arakan, and who call themselves Rapinga, or natives of Arakan.

The second dialect is that spoken by the Hindus of Arakan. I procured it from a Brahmen and his attendants, who had been brought to Amarapura by the king's eldest son, on his return from the conquest of Arakan. They called themselves Rassingam, and, for what reason I do not know, wanted to persuade me that theirs was the common language of Arakan. Both these tribes by the real natives of Arakan are called Kulaw Yakan, or stranger Arakan.

The last dialect of the Hindu Stanley which I shall mention, is that of a people called by the Burmas Aykobat, many of whom are slaves at Amarapura. By one of them I was informed, that they called themselves Banga: that formerly they had Kings of their own, but, that in his father's time,
their kingdom had been overturned by the king of *Munnypura*, who carried away a great part of the inhabitants to his residence. When that was taken last by the *Burmas*, which was about fifteen years ago, this man was one of the many captives who were brought to *Ava*. He said also that *Banga* was seven days journey south-west from *Munnypura*. It must therefore be on the frontiers of *Bengal*, and may perhaps be the country called in our maps *Cajbar*.

**Mr. Gilchrist** has been so good as to examine particularly those two dialects, and to mark thus (*) those words, which come nearest the Hindustance spoken on the *Ganges*: and thus (†) those not so evidently in connection with the same, but which shew resemblance by analogy.

<table>
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<th>Rossawm</th>
<th>Bangu.</th>
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<tr>
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<td>Sawn</td>
<td>Sundra</td>
<td>Satkan</td>
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<td>3 Stars</td>
<td>Tara</td>
<td><em>Nokyoetro</em></td>
<td><em>Tara</em></td>
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<td>4 Earth</td>
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<td>Murtika</td>
<td><em>Matee</em></td>
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<td>5 Water</td>
<td>Pannae</td>
<td>*Dsol</td>
<td><em>Pannee</em></td>
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<td>6 Fire</td>
<td>Auin</td>
<td><em>Aagane</em></td>
<td>Zee</td>
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<td>7 Stone</td>
<td>Sheel</td>
<td>*Sheel</td>
<td><em>Heel</em></td>
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<tr>
<td>8 Wind</td>
<td>Bau</td>
<td>*Pawun</td>
<td><em>Bo</em></td>
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<tr>
<td>9 Rain</td>
<td>Jorail</td>
<td>†Biftee</td>
<td><em>Booun</em></td>
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<td>10 Man</td>
<td>Manush</td>
<td>†Moonusa</td>
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<td>Gall</td>
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THE LANGUAGES SPOKEN IN THE BURMA EMPIRE.

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<td>2800</td>
<td>Noah died 500 years after the Flood</td>
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<td>2800</td>
<td>Noah was 130 years old when his son Shem was born</td>
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<td>2800</td>
<td>Shem was 105 years old when his son Ham was born</td>
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<td>2800</td>
<td>Ham was 130 years old when his son Canaan was born</td>
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**Chandragupta Maurya**
- Ruled from 321 to 298 BCE
- Son of Chandragupta I
- Founder of the Maurya Empire
- Known for his expansionist policies and the establishment of the Maurya Empire in India

**Alexander the Great**
- Ruled from 336 to 323 BCE
- Founder of the Hellenistic Empire
- Known for his conquests across the Mediterranean and the Middle East

**Bibi Khadim**
- Wife of Chandragupta Maurya
- Prominent figure in the Maurya Empire

**Bibiparva**
- A Sanskrit text
- Part of the Mahabharata
- Describes the lives of various characters from the Mahabharata

**Mahabharata**
- An ancient Indian epic
- One of the two greatest epics of ancient India (the other being the Ramayana)
- Contains stories of war, politics, and mythology
XVIII.

On the CHRONOLOGY of the HINDUS.

By Captain Francis Wilford.

The accompanying genealogical table is faithfully extracted from the Vishnu-purâna, the Bha'gawat, and other Purânas, without the least alteration whatever. I have collected numerous MSS, and with the assistance of some learned Pundits of Benares, who are fully satisfied of the authenticity of this table, I exhibit it as the only genuine chronological record of Indian history, that has hitherto come to my knowledge. It gives the utmost extent of the chronology of the Hindus; and, as a certain number of years only can be allowed to a generation, it overthrows at once their monstrous system, which I have rejected as absolutely repugnant to the course of nature, and human reason. Indeed their systems of geography, chronology, and history are all equally monstrous and absurd. The circumference of the earth is said to be 500,000,000 yojanas, or 2,456,000,000 British miles: the mountains are asserted to be 100 yojanas, or 491 British miles high. Hence the mountains to the south of Benares, are said in the Purânas, to have kept the holy city in total darkness, till Mahâ-deva growing angry at their insolence, they humbled themselves to the ground, and their highest peak now is not 500 feet high. In Europe, similar notions once prevailed: for we are told that the Cimmerians were kept in continual darkness by the interposition of immensely high mountains. In the Ca'lica-purâna, it is said that the mountains have sunk considerably, so that the highest is not above one yojana, or five miles high.
When the Paurânis speak of the kings of ancient times, they are equally extravagant. According to them, king Yudhishtîr reigned seven and twenty thousand years. King Nanda, of whom I shall speak more fully hereafter, is said to have possessed in his treasury above 1,584,000,000 pounds sterling in gold coin alone; the value of the silver and copper coin, and jewels exceeded all calculation; and his army consisted of 100,000,000 men. These accounts, geographical, chronological, and historical, as absurd, and inconsistent with reason, must be rejected. This monstrous system seems to derive its origin from the ancient period of 12,000 natural years, which was admitted by the Persians, the Etruscans, and I believe also by the Celtic tribes; for we read of a learned nation in Spain, which boasted of having written histories of above six thousand years.

The Hindus still make use of a period of 12,000 divine years, after which a periodical renovation of the world takes place. It is difficult to fix the time when the Hindus, forsaking the paths of historical truth, launched into the mazes of extravagance and fable. Megasthenes, who had repeatedly visited the court of Chandra-gupta, and of course had an opportunity of conversing with the best informed persons in India, is silent as to this monstrous system of the Hindus: on the contrary, it appears from what he says, that in his time they did not carry back their antiquities much beyond 6,000, or even 5,000 years, as we read in some MSS. He adds also, according to Clemens of Alexandria, that the Hindus and the Jews were the only people, who had a true idea of the creation of the world, and the beginning of things. There was then an obvious affinity between the chronological systems of the Jews and of the Hindus. We are well acquainted with the pretensions of the Egyptians and Chaldeans to antiquity:
this they never attempted to conceal. It is natural to suppose that the Hindus were equally vain; they are so now, and there is hardly a Hindu who is not persuaded of, and who will not reason upon the supposed antiquity of his nation. Megasthenes, who was acquainted with the antiquities of the Egyptians, Chaldaens, and Jews, whilst in India made enquiries into the history of the Hindus and their antiquity: and it is natural to suppose that they would boast of it as well as the Egyptians, or Chaldaens; and as much then as they do now. Surely they did not invent fables to conceal them from the multitude, for whom on the contrary, these fables were framed.

At all events, long before the ninth century the chronological system of the Hindus was as complete, or rather, perfectly the same as it is now; for Albumazar, who was contemporary with the famous Al-mamun, and lived at his court at Bahlac or Balkh, had made the Hindu antiquities his particular study. He was also a famous astronomer and astrologer, and had made enquiries respecting the conjunctions of the planets, the time of the creation of the world, and its duration, for astrological purposes; and he says that the Hindus reckoned from the flood to the Hegira 720,634,442,715 days, or 3725 years.* Here is a mistake, which probably originates with the transcriber or translator, but it may be easily rectified. The first number though somewhat corrupted, is obviously meant for the number of days from the creation to the Hegira; and the 3725 years are reckoned from the beginning of the Cali-yug to the Hegira. It was then the opinion of Albumazar, about the middle of the ninth century, that the era of the Cali-yug coincided with that of the flood. He had perhaps data which no longer exist, as well as Abul-Fazil in the time

* See Bailly’s Astron. anc. p. 302, and Mr. Davis’s Essay in the second volume of the Asiatick Researches, p. 274.
of Akbar. Indeed, I am sometimes tempted to believe, from some particular passages in the Purána, which are related in the true historical style, that the Hindus have destroyed, or at least designedly consigned to oblivion all genuine records, as militating against their favourite system. In this manner the Romans destroyed the books of NumA, and consigned to oblivion the historical books of the Etrurians, and I suspect also, those of the Turdetani in Spain.

The Purána are certainly a modern compilation from valuable materials, which, I am afraid no longer exist: an astronomical observation of the heliacal rising of Canopus, mentioned in two of the Puránas, puts this beyond doubt. It is declared there, that certain religious rites are to be performed on the 27th of Bhádra, when Canopus, disengaged from the rays of the sun, becomes visible. It rises now on the 18th of the same month. The 18th and 27th of Bhádra answer, this year, to the 29th of August, and 7th of September. I had not leisure enough to consult the two Puránas above mentioned, on this subject: but as violent disputes have obtained amongst the learned Pandits, some insisting that these religious rites ought to be performed on the 27th of Bhádra, as directed in the Puránas, whilst others insist it should be at the time of the Udáya, or appearance of Canopus; a great deal of paper has been wasted on this subject, and from what has been written upon it, I have extracted the above observation. As I am not much used to astronomical calculations, I leave to others better qualified than I am, to ascertain from these data, the time in which the Puránas were written.

We learn from Manetho that the Egyptian chronology enumerated fourteen Dynasties, the particulars of which he omitted as unworthy of notice. In the same manner the Hinda chronology presents us with a
series of fourteen Dynasties, equally repugnant to nature and reason; six of these are elapsed: we are in the seventh, which began with the flood; and seven more we are taught to expect. These fourteen Dynasties are hardly ever noticed by the Hindus in their legendary tales, or historical poems. The rulers of these Dynasties are called Menus: and from them their respective Dynasty, antara, or period, is called Manvantara. Every Dynasty ends with a total destruction of the human race, except the Menu or ruler of the next period, who makes his escape in a boat, with the seven Rishis. The same events take place; the same persons, though some times under different names, re-appear. Thus the history of one Dynasty serves for all the rest. In reality, history, according to the Hindus themselves, begins with the flood, or the seventh Menu. Each period consists of 12,000 years, which the Hindus call divine. The Persians are not unacquainted with these renovations of the world, and periods of 12,000 years: for the bird Simurgh is introduced, telling Caeherman, that she had lived to see the earth seven times, filled with creatures, and seven times a perfect void, (it should be six times a perfect void, for we are in the seventh period) and that she had already seen twelve great periods of 7000 years. This is obviously wrong; it should be, seven great periods of 12,000 years.

The antediluvian history, being considered by the Hindus in different points of view, is related in various ways, having little connection with each other. We are told first, that Brahma created ten Brahmacidas or children of Brahma, who were to be the progenitors of the moveable and immoveable parts of the creation, by which they understand animals and vegetables. Their names are Marichi, Atri, Angirā's, Pulastya, Pulaha, Cītū, Dacsha, Vasishta, Bhrigu and Narada. These forang immediately from Brahma, and produced the
Gods, the Daityas, good and bad genii, animals, and plants of all sorts. The Puránics are not agreed as to the number of Brahmadicas. In the Bhágavat it is declared that they were ten, but in other Puránas they reckon nine; whilst in the Scanda-purána it is declared that there were only seven Brahmadicas, whose names are, Marichi, Atri, Angira’sa, Pulastya, Pula’ha, Cítu and Vosishta; nor are there wanting authorities to reduce them to three, namely, the three sons of Swayambhuva, who was Brahma himself in a human shape. It is declared, that the seven Menus who have made their appearance, sprung from the Brahmadicas; their names are, Swayambhuva, Swárochisha, Utta-ma, Támasa, Raivata, Chacshusha and Satyavrata or Noah.

The seven Ríshis sprung immediately from Brahma’, and their names are, Casyapa, Atri, Vosishta, Visvamétra, Gautama, Jamadagni, and Bháradwá’ja. These holy penitents, by their salutary counsels and the example of their asceticisms, discover the path of rectitude and virtue to mankind. It is remarked of Atri that he was both a Brahmadica and a Ríshi; and perhaps the seven Menus, the seven Brahmadicas, with the seven Ríshis are the same, and make only seven individual persons. The seven Brahmadicas were Prajapatis, or lords of the Prajas or creatures. From them mankind were born; and they are probably the same with the seven Menus, who, when far advanced in years, withdrew from the world and became Ríshis or holy penitents, as according to the Puránas, was the general practice of mankind in former ages. These seven grand ancestors of the human race were first Brahmadicas or children of Brahma’, and created for the purpose of replenishing the earth with inhabitants; having fulfilled their mission, they became sovereigns of the universe, or Menus; and in their old age they withdrew to solitary places
to prepare for death, and became Rishi. SWAYAMBHWA, or the son of the self existing, was the first Menu, and the father of mankind: his con-
fort's name was SATARUPA. In the second Veda, the Supreme Being is introduced thus speaking: "From me BRAHMA was born: he is above all: he is Pitama, or the father of all men: he is Aja and Swayambhu, or self exist-
ing." From him proceeded SWAYAMBHWA who is the first Menu: they call him ADIMA (or the first, or Protagonus): he is the first of men, and Parama-puruṣa, or the first male. His help meet PRŚRITI, is called also Satarupa: she is ADIMA (2) or the first: she is Visva-Jenni or the mother of the world: she is IVA or like I, the female energy of nature, or she is a form of, or descended from I: she is Para or the greatest: both are like MAHA-DEVA and his SACTI, (the female energy of nature) whose names are also ISA and ISI.

SWAYAMBHUVA is BRAHMA in a human shape, or the first BRAHMA: for BRAHMA is man individually, and also collectively, mankind; hence BRAHMA is said to be born and to die every day, as there are men springing to life, and dying every day. Collectively he dies every hundred years, this being the utmost limits of life in the Calyug: according to the Putanas: at the end of the world, BRAHMA or mankind is said to die also, at the end of a hundred divine years. SWAYAMBHUVA, in the present Calpa, is VIŚNU in the character of BRAHMA-ruPI JANARDANA, or VIŚNU with the countenance of BRAHMA. To understand this, it is necessary to premise, that it has been revealed to the Hindus, that from the beginning to the end of things, when the whole creation will be annihilated and absorbed into the supreme being, there will be five great Calpas, or periods. We are now in the mid-
dle of the fourth Calpa, fifty years of BRAHMA being elapsed; and of the re-

(2) ADIMA is the feminine gender from ADIMA or ADIMAI.
mainder the first Calpa is begun. These five great Calpas include 500 years of Brahma, at the end of which, nothing will remain, but the self existing. Every Calpa, except the first, is preceded by a renovation of the world and a general flood: whilst the flood that precedes every Manvantara is, in great measure, a partial one, some few high peaks, and some privileged places, as Benares, being excepted; the peaks remaining above the waters, and Benares and other privileged places being surrounded by the waters as with a circular wall.

These five Calpas have five deities, who rule by turns, and from whom the Calpas are denominated. These five deities are, Devi, Surya or the Sun, Ganesa, Vishnu, and Iswara. Brahma has no peculiar Calpa: he is intimate to every one of them. Every deity in his own period, is Calsvrupi or Chronus: we are now under the reign of the fourth Chronus. The western mythologists mention several ruling deities of that name. Calsvrupi signifies, he who has the countenance of Ca'la, Chronus, or Time. This is now the Calpa of Vishnu, who, to create, thought on Brahma and became Brahma-rupi-Janardana. He preserves, and fosters the whole creation in his own character: and will ultimately destroy it through Iswara or Rudra. The Calpa of Vishnu is called also the Padma, or Lotos period. It is declared in the Puranas, that all animals and plants are the Ling or Phallus of the Calsvrupi deity; and that at the end of his own Calpa, he is deprived of his Ling by his successor, who attracts the whole creation to himself, to swallow it up or devour it, according to the western mythologists; and at the end of his Calpa he digorges the whole creation. Such is the origin of Chronus devouring his own offspring; of Jupiter digesting it through a portion administered to him by Metis; and of Chronus castrating his own father. According to this, Swayambhava
is conjointly, and individually, **Brahma**, **Vishnu**, and **Isa** or **Maha-
deva**. To **Swayambhūva** were born three daughters, **Aṣcūti**, **Deva-
hūti**, and **Visrutio Prasuti**. **Brahma** created three great **Prajapati**
ista, to be their husbands; **Cardama**, **Dacsha**, (the same who was also a
**Brahmādica**), and **Ruchi**. **Cardama** is acknowledged to be a form of
**Siva**, or **Siva** himself; and **Dacsha** to be **Brahma**: hence he is often
called **Dacsha-Brahma**; and we may reasonably conclude that the be-
nevolent **Ruchi** was equally a form of **Vishnu**. It is said in the **Vedas**,
as I am assured by learned **Pundits**, that these three gods sprang in a mortal
shape from the body of **Adima**; that **Dacsha-Brahma** issued mysti-
cally from his navel, **Vishnu** from his left, and **Siva** from his right side.
It is declared in the **Purānas**, that **Iswara** cut off one of the heads of **Brah-
ma**, who being immortal, was only maimed. The same mystical ran-
cour was manifest when they assumed a mortal shape, as appears from the
following relation. The pious **Dacsha** desiring to perform a sacrifice,
invited gods and men to assist at it, but did not ask **Siva** on account of his
bad conduct, and licentious life. The wife of **Siva**, who was the daugh-
ter of **Dacsha**, could not brook this neglect, and determined to go: her
husband expostulated with her, but to no purpose. When she arrived, her
father took no notice of her; which enraged her so much, that after having
spoiled the sacrifice, she jumped into the sacred fire and expired in the flames.
**Siva** hearing of her misfortune, went to **Dacsha**, and reproaching him for
his unnatural conduct toward his own daughter, cut off his head. **Dacsha**
had no male offspring, but many daughters, whose alliance was eagerly
sought for by the most distinguished characters. It is asserted in the **Purānas**,
that from **Cardama**, **Dacsha**, and **Ruchi**, the earth was filled with inha-
bbitants: yet in the same **Purānas** we are told, that **Brahma** being disapp-
pointed, found it necessary to give two sons to **Adima**, from whom, at

H h
the earth was filled with inhabitants. These two sons were Priyavrata and Uttanapada, who appear to be the same with Cardama and Ruchi. Here the antediluvian history assumes a different shape; and the Puranas abandoning their idle tales of the seven Menus, and removals of the world between the time of Swayambhuva and the flood of Satyavrata, present us with something more consistent with reason and historical truth; but which at once overthrows their extravagant fabric. Priyavrata was the first born of Adima; and the particulars recorded of his progeny have no small affinity with the generations exhibited by Sanchoniatho, as will appear from the following comparative table.

I. Adima, and Adima of Iva.

II. Priyavrata. He married Barhishmati, the daughter of Visva-carma, the chief engi- neer of the Gods.

III. Agnidhra and his seven brothers, whose names signify fire and flame. By one wife he had three sons: they became Menus; and were named, Uttama, Tamasa, and Raivata. By another wife, Agnidhra had nine sons, who gave their names to the mountainous tracts of Nabahi.

I. Protagonous, synonymous with Adim: Aion or Aeon, from Iva or Ivam, in the second cafe.

II. Genus, Genea.

III. Phos, Phur, Phlox; that is, light, fire, and flame.
IV. CIMPURUSHA, HARIVARSHA, ILAVARTA, RAMANACA, CURU, BHADRASVA, CETUMALA and HIRANMAYA.

IV. They begat sons of vast bulk, whose names were given to the mountains on which they seized, viz: Cassius, Libanus, Anti-Libanus, Brathys.

V. RISHABHA, son of NABAIRI.

V. Memrumus, Hypsauranius, and Usoes.

VI. BHARATA, who gave his name to the country of Bharata-varsha.

VI. Agraes, Halaius.

VII. SUMATI, DHUMRA-CE'TU, whose name signifies a fiery meteor.

VII. Chrysaor.

VIII. DE'VAJITA, said by some to be brothers.

VIII. Technites, Geinus Autochton.

9. PRATIHARA, to be brothers.

10. PRATIHARTA, The names of the two last imply beating, hammering, &c.

IX. AJA and BHMAMNA.

IX. Agrowerus, or Agrotes. AJA in Sanscrit, is synonymous nearly with Autochton; and BHMAMNA answers to Agrowerus and Agrotes.

Then follows a list of sixteen names, supposed by some to be so many generations in a direct line; by others, this is denied:—but as nothing is recorded of them, they are omitted.

The posterity of ADIMA or ADIM (for the letter a in this name has ex-
actually the sound of the *French e* in the word *jâime*) through *Utta'napada*, is as follows:

I. **Adim** and **Iva**. *Iva* sounds exactly like *Eve* pronounced as a disyllable *E-ve*.

II. **Utta'napada**. He had two wives, *Suruchi* and *Suniti*; by the first he had *Uttama*, and by the second *Dhruva*. *Utta'napada* was exceedingly fond of *Suruchi*, which gave rise to the following circumstances. Whilst he was caressing *Uttama*, his son *Dhruva* went to him and was repulsed. *Dhruva* burst into tears, and complained to his mother, who advised him to withdraw into the deserts. He followed her advice, and retired into a forest on the banks of the *Jumna*; where he gave himself up to the contemplation of the supreme being, and the performance of religious austerities. After many years the supreme being appeared to him, and commanded him to put an end to his austerities, and return to his father who had relented. He went accordingly to his father, who received him with joy, and resigned the kingdom to him. *Dhruva* like *Enos* in scripture, is commended for his extraordinary piety, and the salutary precepts he gave to mankind. He did not taste death, but was translated to heaven, where he shines in the polar star. Here *Enos* and *Enoch* are confounded together. *Uttama*, whose education had been neglected, gave himself up to pleasure and dissipation. Whilst hunting, he happened to quarrel with the *Cuveras*, and was killed in the fray. *Dhruva*, at the head of a numerous army, took the field to revenge the death of his brother: many had fallen on both sides, when *Swayambhuva* or *Adim* interposed, and a lasting peace was concluded between the contending parties.
III. Dhruva.—He had by his first wife two sons, Vatsara and Calmavatsara; by Ila he had a son called Utcala, and a daughter.

IV. Vatsara, by his wife Swacathi had six sons, the eldest of whom was called Pushparana.

V. Pushparana had by his wife Dosha, three sons; and by Nadwalala, Chacshusha, who became a Menu.

VI. Chachusha had twelve sons, the eldest of whom was called Ulmaca.

VII. Ulmaca had six sons, the eldest of whom was Anga.

VIII. Anga had an only son called Vena.

IX. Vena, being an impious and tyrannical prince, was cursed by the Brahmins; in consequence of which curse he died without leaving issue. To remedy this evil they opened his left arm, and with a stick churned the humours, till they at last produced a son, who proved as wicked as his father, and was of course set aside: then opening the right arm, they churned till they produced a beautiful boy, who proved to be a form of Vishnu, under the name of Prithu.

X. Prithu. Gods and men came to make obeisance to him, and celebrate his appearance on earth. He married a form of the goddess Lacsami. In his time, the earth having refused to give her wonted supplies to mankind,
Prithu began to beat and wound her. The earth assuming the shape of a cow, went to the high grounds of Meru, and there laid her complaint before the supreme court, who rejected it; as she acknowledged, that she had refused the common necessaries of life, not only to mankind in general, but to Prithu himself, whose wife she was in a human shape. Prithu and his descendants were allowed to beat and wound her, in case of noncompliance with the decree of the supreme court. The earth submitted reluctantly, and since that time, mankind are continually beating and wounding her, with ploughs, harrows, hoes, and other instruments of husbandry. We are told also in more plain language, that Prithu cut down whole forests, levelled the earth, planted orchards and sowed fields with all sorts of useful seeds. From her husband Prithu, the earth was denominated Prithwi.

Prithu was a religious prince, fond of agriculture, and became a husbandman; which is to be understood by his quarrel with the earth. This induces me to think, that he is the same with Satyavrata or Noah, whose mortal father is not mentioned in the Puranas, at least my Pundits have not yet been able to find it. His heavenly father was the Sun; and Satyavrata is declared also to be an incarnation of Vishnu. Here I must observe, that at night and in the west, the Sun is Vishnu: he is Brahma in the east, and in the morning; from noon to evening he is Siva.

XI. Prithu had five children. Vijitasva, who became sovereign over his four brothers, and had the middle part of the kingdom to his own share; Huryacsha, ruled over Prachi, or the east, and built the town of Rajgrihu, now Raj-mebar; Dhumrace-sha, who ruled in the south, as Vrica did in the west, and Dravinasia in the north.
XII. **Vijitasva** had by one of his wives three sons, called **Pavaca**, **Pavamanä** and **Suchi**, all names of fire. He became **Antardhãna** at pleasure, that is to say, he appeared and disappeared whenever he chose, and he withdrew his soul from his body at pleasure. He was born again of his own wife, and of himself, under the name of **Havirdhãna**. **Havirdhãna** married **Havirdhãni**, by whom he had six children, known by the general appellation of **Prachina-barbi**.

XIII. **Varishada**, the eldest of them, married **Satadruti**, the daughter of **Oceanus**, and had by her ten sons, called the **Prachetas**.

XIV. The famous **Dacsha**, before mentioned, was born again one of them: his brothers, bidding adieu to the world, withdrew to forests in distant countries toward the west, where they beheld the translation of **Dhruvä** into heaven. And here ends the line of **Uttanapäda**, which I now exhibit at one view, with some variations.

I. **Swayambhuva or Adim**.
II. **Uttanapäda**, who was probably the same with **Ruchi**.
III. **Dhruvä**, eminent for his piety.
IV. **Vatsara**.
V. **Pushparña**, called also **Ripunjaya**.
VI. **Chacshusha—Menu**.
VII. **Umaca or Uru**.
VIII. **Anga**.
IX. **Vena**.
X. **Prithu**, supposed to be **Noah**.
XI. **Vijitasva**.
XII. **Havirdhana.** — — — Swayambhuva dies.

XIII. **Varishada.**

XIV. The ten **Práchétas.** — Dhruva is translated into heaven.

By supposing Prýthu to be Noah, and Dhruva to be Enos, this account agrees remarkably well with the computation of the Samaritan Pentateuch. Enos lived 433 years after the birth of Noah, and of course the great grand-children of the latter, could be witnesses of the translation of Dhruva into heaven. Swayambhuva or Adam lived 223 years after the birth of Noah, according to the computation of the Samaritan Pentateuch; and it is said of Prýthu, that the Earth having assumed the shape of a Cow, he made use of this grand-ancestor Swayambhuva as a Calf, to milk her. Perhaps the old fire took delight in superintending the fields and orchards, and attending the dairies of his beloved Prýthu.

The only material difficulty in supposing Prýthu to be the same with Noah, respects his offspring to the fourth generation before the flood. But when we consider, that Noah was 500 years old when Japheth and his two other sons were born, it is hardly credible that he should have had no children till that advanced age. The Purânies insist that Satyavrata had many before the flood, but that they perished with the rest of mankind, and that Sharma or Shama, Charma, and Jvápati were born after the flood: but they appear to have no other proof of this, than that they are not mentioned among those who escaped with Noah in the ark. I shall now give a table of the seven Menus, compared with the two lines descended from Adim and Iva.
This table completely overthrows the system of the *Menasvntaras* previous to the flood; for it is declared in the *Puránas*, that at the end of every *Mena-
wantara the whole human race is destroyed, except one menu, who makes his escape in a boat with the seven Rishis. But according to the present table, Swayambhuva went through every Menwantara, and died in the sixth. Dhruva also, law five Menwantaras, and died on the sixth. Uttama, Tamas, and Ravi, being brothers, lived during the course of several Menwantaras; and when Uttama made his escape in a boat, besides the seven Rishis, he must have taken with him his two brothers, with Dhruva and Swayambhuva. Of these Menus, more little is recorded in the Puranas, than that they had a numerous offspring; that certain Devanas made their appearance; and that they discomfited the giants. The mortal father of Swarochisa is not known. His divine father was Agni; hence he is supposed by some, to be the same with Agnidhra.

During the reign of the fourth Menu, occurred the famous war between the Elephants and the Crocodiles, which in the Puranas is asserted to have happened in the sacred isles in the west. What was the origin of it we are not told: but whenever the Elephants went to a lake, either to drink or to bathe, the Crocodiles laying in wait, dragged them into the water and devoured them. The Guj-Indra or Nag’nat’b, the lord of the Elephants, was once attacked by the chief of the Grabas or Crocodiles, on the banks of a lake, in one of the sacred isles called Suvarneya: a dreadful conflict took place, and the Nag’nat’b was almost overpowered, when he called on Heri or Vishnu, who rescued him and put an end to the war. What could give rise to such an extravagant tale I cannot determine, but some obvious traces of it still remain in the sacred isles in the west; for almost every lake in Wales has a strange story attached to it, of battles fought there between an Ox and a Beaver, both of an uncommon size. At night the lowing of the Ox, and the rattling of the chain, with which the Ycbain-Bannawg, or great Ox endeavours to pull out of the
water the *Avente* or *Beaver*, are often heard. It is well known, that *Elephants* were called *Oxen* in the west, and the ancient *Romans* had no other name for them. It may be objected, that if there had been *Elephants* in the sacred *isles*, the inhabitants would have had names for them; but the *Gymri* are certainly a very modern tribe, relatively to the times we are speaking of; and probably, there were no *Elephants*, or *Crocodiles* when they settled there, but hearing of a strange story of battles between a large land animal, and an amphibious one, they concluded that these two animals could be no other than the *Ox*, and *Beaver*, the largest of the kind they were acquainted with. *Nagnât'ha-bân*, or the place of the *Nagnât'b*, or lord of the Elephantine race, is well known to the antiquaries of *Juvernia*.

During the sixth *Dynasty* came to pass the famous *burning of the Ocean*, which is positively declared in the *Purânas* to have happened in the *sea of milk*, or more properly, as it is often called also, the *white sea*, which surrounds the *sacred isles* in the west; and is thus denominated according to the *Treloca-derpan*, because it washes the shores of the *white island*, the principal of the *sacred isles*. The *white island*, in Sanscrit, *Swēta-dvip*, or *Cebira-dvip*, is as famous in the east as it is in the west. It may seem strange, that islands so remote should be known to the *Puranics*; but the truth is, that the *Vedas* were not originally made known to mankind in *India*. The *Brâhmens* themselves acknowledge, that they are not natives of *India*, but that they descended into the plains of *Hindustan* through the pass of *Herō-dwar*.

The old continent is well described in the *Purânas*, but more particularly the countries in which the *Vedas* were made public; and in which, the doctrine they contain flourished for a long time. Accordingly, the *sacred isles* in the west, the countries bordering on the *Nile*, and last of all *India*, are better and
more minutely described than any other country. **Atri**, called **Edris** and **Idris** in the countries to the west of **India**, carried the **Vedas** from the abode of the Gods on the summit of **Meru**, first, to the **sacred isles**, thence, to the banks of the **Nile**, and lastly, to the borders of **India**. The place of his abode whilst in the **sacred isles**, became afterwards a famous place of worship, under the name of **Atri-śāhan**, the **place or seat of Atri** or **Idris**. It is often mentioned in the **Purānas**, and described to be on a high mountain not far from the sea-shore.

I shall pass over the four ages, as they do not appear to answer any purpose, either astronomical, or historical. They are called by the same names that were used by the **Greek** mythologists: except the fourth, which is called by the **Hindus**, the **earthen age**. I shall only remark, that **Menu** in his institutes says, that in the **first or golden age**, (9) men, free from disease, lived four hundred years; but in the second and the succeeding ages, their lives were lessened gradually by one quarter: thus in the **Cali-yug** or present age, men live only one hundred years. This may serve to fix the period and duration of the first ages; for it is obvious that the whole passage refers to natural years.

I shall now conclude this account of **antediluvian history**, by observing, that the first descendants of **Swayambhuva** are represented in the **Purānas**, as living in the mountains to the north of **India**, toward the sources of the **Ganges**, and downwards as far as **Seri-nāgara** and **Hari-dwār**. But the rulers of mankind lived on the summit of **Meru**, towards the north; where they appear to have established the seat of justice, as the **Purānas** make frequent mention of the oppressed repairing thither for redress. **India** at that time seems to

*Institutes of Menu, p. 11.*
have been perfectly insulated; and we know, that from the mouth of the Indus to Deblis, and thence to the mouth of the Ganges, the country is perfectly level, without even a single hillock; but this subject is foreign to my present purpose, and may be resumed hereafter. The generations after the flood, exhibited in the accompanying table, begin with the famous Atri, and end with Chandragupta, who was contemporary with Alexander the Great. Buddha, the grand son of Atri, married Ilā, daughter of Sātyavrata of Noah, who was born to him in his old age.

Atri, for the purpose of making the Vedas known to mankind, had three sons; or as it is declared in the Puranas, the Trimurti, or Hindu Triad was incarnated in his house. The eldest, called Soma, or the Moon in a human shape, was a portion or form of Brahma. To him the Sacred Isles in the west were allotted. He is still alive though invisible, and is acknowledged as the chief of the sacerdotal tribe to this day.

The second, a portion of Vishnu, was called Datta or Datt, and Datta tre'ya. The countries bordering on the Nile fell to his share. He is the Toth of the Egyptians.

The third was a choleric saint called Durvasa. He was a portion of Mahadeva, but had no fixed place assigned to him; and he is generally rambling over the world doing more mischief than good; however we find him very often performing Tapasya in the mountains of Armenia. A dreadful conflagration happened once in that country, which spreading all over Gisba-dwipa, destroyed all the animals and vegetables. Arama the son of a son of Sātyavrata, (and consequently the Aram of scripture,) who was hunting through these mountains, was involved with his party in the general
confabulation; a punishment inflicted, it is supposed, for his having inadvertently wounded the foot of Durvasas with an arrow. The death of Arama happened three hundred years after the flood, according to the Puranas, as noticed in a former essay on Egypt.

Chandra-Gupta, or he who was saved by the interposition of Lunus or the Moon, is called also Chandra, in a poem quoted by Sir William Jones. The Greeks called him Sandracuptas, Sandracottos, and Androcottos. Sandracottos is generally used by the historians of Alexander; and Sandracuptos is found in the works of Athenaeus. Sir William Jones, from a poem written by Somadeva, and a tragedy, called the Coronation of Chandra or Chandra-Gupta, (†) discovered that he really was the Indian King mentioned by the historians of Alexander, under the names of Sandracottos. These two poems I have not been able to procure; but I have found another dramatic piece intitled Mudra-Racsha, or the Seal of Raçshasa, which is divided into two parts: the first may be called the coronation of Chandra-Gupta; and the second, the reconciliation of Chandra-Gupta with Mamtri-Raçshasa, the prime minister of his father.

The history of Chandra-Gupta is related, though in few words, in the Vishnu-purana, the Bhagawat, and two other books, one of which is called Brabatcatkhā, and the other is a lexicon called Cāmandaca: the two last are supposed to be about six or seven hundred years old.

In the Vishnu-purána we read, "unto Nanda shall be born nine sons:

(†) Asiatic Researches, Vol. 4th, p. 6 and 11.
"COTILYA, his minister shall destroy them, and place CHANDRA-GUPTA on the throne."

In the Bhagawat we read, "from the womb of a Sudri, NANDA shall be born. His eldest son will be called SUMALYA, and he shall have eight sons more: these, a Brahmen (called Cotilya, Vatsakyan, and Chanaca in the commentary,) shall destroy. After them a MAURYA shall reign in the Cali-yug. This Brahmen will place CHANDRA-GUPTA on the throne." In the Brabatcat'ba it is said, that this revolution was effected in seven days, and the nine children of NANDA put to death. In the Cad-mandaca, CHANACYA is called VISHNU-GUPTA. The following is an abstract of the history of CHANDRA'-GUPTA from the Mudra Racasfa.

NANDA king of Prachbi, was the son of MAHA NANDI, by a female slave of the Sudra tribe: hence NANDA was called a Sudra. He was a good king, just and equitable, and paid due respects to the Brahmen: he was avaricious, but he respected the property of his subjects. He was originally king of Magadha, now called South-Babar, which had been in the possession of his ancestors since the days of KRISHNA. By the strength of his arm he subdued all the kings of the country, and like another Parasu-Rama destroyed the remnants of the Cshettris. He had two wives, RATNAVATI, and MURA. By the first he had nine sons, called the SUMALYADICAS, from the eldest whose name was SUMALYA, (though in the Drama, he is called SARVARTHASIDDHI:) by MURA he had CHANDRA'-GUPTA, and many others, who were known by the general appellation of MAURYAS, because they were born of MURA.

NANDA, when far advanced in years, was taken ill suddenly, and to
all appearance died. He soon revived, to the great joy of his subjects: but his senses appeared to be greatly deranged, for he no longer spoke, or acted as before. While some ascribed the monarch's imbecility to the effects of a certain poison, which is known to impair the faculties at least, when it proves too weak to destroy the life of those to whom it is administered, Mantri-Ráčshasa, his prime minister, was firmly persuaded, according to a notion very prevalent among the Hindus, that upon his master's death, some magician had entered into the lifeless corpse, which was now re-animated and actuated by his presence. He therefore secretly ordered, that strict search might be made for the magician's own body; for as, according to the tenets of their superstition, this would necessarily be rendered insensible, and continue so, as long as its spirit informed another body; so he naturally concluded, the magician had enjoined one of his faithful followers to watch it, until the dissolution of the spell should end the trance. In consequence of these orders, two men being discovered keeping watch over a corpse on the banks of the Ganges, he ordered them to be seized and thrown into the river, and caused the body to be burnt immediately. It proved to belong to Chandra-dás, a king of a small domain in the western part of India, beyond the Vindhyan hills, the capital whereof is called Vicit-palli. This prince, having been obliged to save himself by flight, from the Tavanas or Greeks, who had dispossessed him of his kingdom, had assumed, with the garb of a penitent, the name of Sūvidha. Mantri-Ráčshasa having thus punished the magician for his presumption, left the country.

When Nanda recovered from his illness, he became a tyrant, or rather, having intrusted Sacatara, his prime minister, with the reins of government, the latter ruled with absolute sway. As the old king was one day hunting with his minister, towards the hills to the south of the town, he complained of his be-
ing thirsty, and quitting his attendants, repaired with SACATAR to a beautiful reservoir, under a large spreading tree, near a cave in the hills, called Pátal-candara, or the passage leading to the infernal regions. There SACATARA flung the old man into the reservoir, and threw a large stone upon him. In the evening he returned to the imperial city, bringing back the king's horse, and reported, that his master had quitted his attendants and rode into the forest; what was become of him he knew not, but he had found his horse grazing under a tree. Some days after, SACATARA, with VACRANASA, one of the secretaries of state, placed UGRADHANWA, one of the youngest sons of NANDA, on the throne.

The young king being dissatisfied with SACATARA's account of his father's disappearance, set about further enquiries during the minister's absence; but these proving as little satisfactory, he assembled the principal persons of his court, and threatened them all with death, if in three days they failed to bring him certain intelligence what was become of his father. This menace succeeded, for on the fourth day they reported that SACATARA had murdered the old king, and that his remains were concealed under a stone in the reservoir near Pátal-candara. UGRADHANWA immediately sent people with camels, who returned in the evening, with the body and the stone that had covered it. SACATARA confessed the murder, and was thereupon condemned to be shut up with his family in a narrow room, the door of which was walled up, and a small opening only left for the conveyance of their scanty allowance. They all died in a short time, except the youngest son VICATARA, whom the young king ordered to be released, and took into his service. But VICATARA meditated revenge: and the king having directed him to call some Brāhmen, to assist at the Sraddha he was going to perform in honor of his an-
cestors, Vícatara brought an ill natured priest of a most savage appearance, in the expectation that the king might be tempted, from disgust at so offensive an object, to offer some affront to the Bráhmen, who in revenge would denounce a curse against him. The plan succeeded to his wish: the king ordered the priest to be turned out, and the latter laid a dreadful imprecation upon him, swearing at the same time, that he would never tie up his Śbicā, or lock of hair, till he had effected his ruin. The enraged priest then ran out of the palace, exclaiming, whoever wishes to be king let him follow me. Chandra-gupta immediately arose with eight of his friends, and went after him. They crossed the Ganges with all possible dispatch, and visited the king of Népāl, called Parvataśvara, or the lord of the mountains, who received them kindly. They entreated him to assist them with troops and money, Chandra-gupta promising at the same time, to give him the half of the empire of Prácbi, in case they should be successful. Parvataśvara answered, that he could not bring into the field a sufficient force to effect the conquest of so powerful an empire; but as he was on good terms with the Tavans or Greeks, the Sacas or Indo-Gythians, the people of Camboja or Gaxni, the Cirātas or inhabitants of the mountains to the eastward of Népāl, he could depend on their assistance. Ugradhanwa, enraged at the behaviour of Chandra-gupta, ordered all his brothers to be put to death.

[The matter, however, is related differently in other books, which state, that Nanda seeing himself far advanced in years, directed that after his decease, his kingdom should be equally divided between the Sumalvādicas and that a decent allowance should be given to the Mauryas, or children of Mura; but the Sumalvādicas, being jealous of the Mauryas, put them all to death, except Chandra-gupta, who being saved through the protection of Lunus, out of gratitude assumed the name of Chandra-gupta, or faved by the moon: but to resume the narrative.]
Parvateswara took the field with a formidable army, accompanied by his brother Virochana and his own son Malaya-Cetu. The confederates soon came in fight of the capital of the king of Prachi, who put himself at the head of his forces and went out to meet them. A battle was fought, wherein Ugradhanwa was defeated, after a dreadful carnage, in which he himself lost his life. The city was immediately surrounded, and Sarvartha-siddhi the governor, seeing it impossible to hold out against so powerful an enemy, fled to the Vindhyans mountains, and became an anchoret. Raçhasa went over to Parvateswara*. Chandra-gupta being firmly established on the throne, destroyed the Sumalyadicas, and dismissed the allies, after having liberally rewarded them for their assistance; but he kept the Yavans or Greeks, and refused to give the half of the kingdom of Prachi to Parvateswara, who being unable to enforce his claim, returned to his own country, meditating vengeance. By the advice of Raçhasa he sent a person to destroy Chandra-gupta; but Vishnu-gupta suspecting the design, not only rendered it abortive, but turned it back upon the author, by gaining over the assassin to his interest, whom he engaged to murder Parvateswara, which the villain accordingly effected. Raçhasa urged Malaya-Cetu to revenge his father’s death, but though pleased with the suggestion, he declined the enterprise, representing to his counsellor, that Chandra-gupta had a large body of Yavans or Greeks in his pay, had fortified his capital, and placed a numerous garrison in it, with guards of elephants at all the gates; and finally, by the defection of their allies, who were either over-awed by his power, or conciliated by his favour, had so firmly establishment his authority, that no attempt could be made against him with any prospect of success.

In the mean time, Vishnu-gupta, being conscious that Chandra-

(*) Raçhasa, on hearing of the death of Sacata returned, and became prime minister of Ugradhanwa.

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GUPTA could never be safe so long as he had to contend with a man of RÁCÓSHA'S abilities, formed a plan to reconcile them, and this he effected in the following manner:—There was in the capital, a respectable merchant or banker called CHANDANA-DA'S, an intimate friend of RÁCÓSHA. VISHNU-GUPTA advised CHANDRA-GUPTA to confine him with his whole family: sometime after he visited the unfortunate prisoner, and told him, that the only way to save himself and family from imminent destruction, was to effect a reconciliation between the king and RÁCÓSHA, and that if he would follow his advice, he would point out to him the means of doing it. CHANDANA-DA'S assented, though, from the known inveteracy of RÁCÓSHA against CHANDRA-GUPTA, he had little hope of success. Accordingly, he and VISHNU-GUPTA betook themselves privately to a place in the northern hills, where RÁCÓSHA had a country seat, to which he used to retire from the bustle of business. There they erected a large pile of wood, and gave out that they intended to burn themselves. RÁCÓSHA was astonished when he heard of his friend's resolution, and used every endeavour to dissuade him from it; but CHANDANA-DA'S told him he was determined to perish in the flames with VISHNU-GUPTA, unless he would consent to be reconciled to CHANDRA-GUPTA. In the mean time, the prince arrived with a retinue of five hundred men; when ordering them to remain behind, he advanced alone toward RÁCÓSHA, to whom he bowed respectfully, and made an offer of delivering up his sword. RÁCÓSHA remained a long time inexorable, but at last, overcome by the joint entreaties of VISHNU-GUPTA and CHANDANA-DA'S, he suffered himself to be appeased, and was reconciled to the king who made him his prime minister. VISHNU-GUPTA having happily succeeded in bringing about this reconciliation, withdrew to resume his former occupations; and CHANDRA-GUPTA reigned afterwards many years, with justice and equity, and adored by his subjects.
Of the Hindus.

By Prácbi [in Sanscrit,] or the east, is understood, all the country from Allababad to the easternmost limits of India: it is called also Purva, an appellation of the same import, and Purob in the spoken dialects. This last has been distorted into Purop and Prurop by European travellers of the last century. From Prácbi, is obviously derived the name of Prásii, which the Greeks gave to the inhabitants of this country. It is divided into two parts: the first comprehends all the country from Allababad to Raj-mèbal and the western branch of the Ganges; the second includes Bengal, the greatest part of which is known in Sanscrit under the name of Gancara-deśa, or country of Gancara, from which the Greeks made Gangaridas, or Gangaridai in the first case. Gancara, is still the name of a small district near the summit of the Delta.

Perhaps, from these two countries called Purva, is derived the appellation of Purvaim in scripture, which appears with a dual form. According to Arrian’s Periplus, Bengal was famous for its highly refined gold, called Keltin in the Periplus, and Candén or Calden to this day: it is called Kurden in the Ayeen Ackbery (*).

The capital city of Prácbi proper, or the western part of it, is declared to be Ráj-griha, or the royal mansion. According to the Puránas, it was built by a son of king Príthu called Haryacsha. It was taken afterwards by Bala-ráma, the brother of Críshna, who rebuilt it, and assigned it as a residence for one of his sons, who are called in general Báliputras, or the children of Bala. From this circumstance it was called Balipura, or the town of the son of Bala: but in the spoken dialects, it was called Bálí-putra, because a Putra, or son of Bálí resided in it.

* Vol. 3. page 264.
From *Bali-putra*, the Greeks made *Pali-patra*, and *Pali-bothra*, and the inhabitants of the country, of which it was the capital, they denominated *Pali-bothri*; though this appellation more properly belongs to another tribe of Hindus, of whom I gave some account in a former essay on Egypt.

*Diodorus Siculus* speaking of *Palibothra*, says, that it had been built by the *Indian Hercules*, who, according to *Megasthenes*, as quoted by *Arrian*, was worshiped by the *Saraseni*. Their chief cities were *Methora* and *Glisbora*; the first is now called *Mutra* (*†*), the other *Muza-nagar* by the *Muslims*, and *Calispa-pura* by the *Hindus*. The whole country about *Mutra*, is called *Surasena* to this day, by learned *Brâhmens*.

The *Indian Hercules*, according to *Cicero*, was called *Belus*. He is the same with *Bala* the brother of *Cûshna*, and both are conjointly worshipped at *Mutra*; indeed they are considered as one *Avatara*, or incarnation of *Vishnu*. *Bala* is represented as a stout man, with a club in his hand; he is called also *Bala-Râma*. To decline the word *Bala* you must begin with *Balas*, which I conceive to be an obsolete form, preserved only for the purpose of declension, and etymological derivation. The first *A* in *Bala*, is pronounced like the first *A* in *America*, in the eastern parts of *India*; but in the western parts, and at *Benares*, it is pronounced exactly like the *French e*, in the pronouns *je, me, le,* &c: thus the difference between *Balas* and *Belus* or *Belos* is not very great. As *Bala* sprang from *Vishnu*, or *Heri*, he is certainly *Heri-Cula*, *Heri-Culas*, or *Hercules*. *Diodorus Siculus* says, that the posterity of *Hercules* reigned for many centuries in *Palibothra*, but that they did nothing worthy of being recorded; and indeed, their names are not even mentioned in the *Purânas*.

(*†*) In Sanscrit, it is called *Mabura*. 
In the Gangā-mahatmya, in which all places of worship, and others of note on the banks of the Ganges are mentioned, the present town of Rāj-mēbal, is positively declared to be the ancient city of Rāj-griha of the Purānas, the capital of Prāebi, which afterwards was called Bāli-putra.

Rāj-griha, and Rāj-mēbal in Persian, signify the same thing. It is also called by the natives Rāj-mandalam, and by Ptolemy Palibothra-mandalon for Bāli-putra-Mandalam: the first signifies the Royal mansion, and the second, the mansion of the Bāli-putras. In a more extensive sense Mandalam signifies the Circle, or country belonging to the Bāli-putras: in this sense, we say Coro-mandol, for Cholo, or rather Jala-mandal.

Here I must observe, that the present Rāj-mēbal is not precisely on the spot where the ancient Rāj-griha, or Bāli-putra stood, owing to the strange devastations of the Ganges in that part of the country for several centuries past. These devastations are attested by universal tradition, as well as by historical records, and the concurring testimony of Ralph Fitch, Tavernier, and other European travellers of the last century. When I was at Rāj-mēbal in January last, I was desirous of making particular enquiries on the spot, but I could only meet with a few Brāhmens, and those very ignorant: all they could tell me was, that in former ages Rāj-mēbal or Rāj-mandol was an immense city; that it extended as far as the eastern limits of Boglipore towards Terriagully, but that the Ganges, which formerly ran a great way more to the N. E. and E. and E., had swallowed it up; and that the present Rāj-mēbal, formerly a suburb of the ancient city, was all that remained of that famous place. For further particulars they referred me to learned Pandits, who unfortunately lived in the interior parts of the country.
In the Mudrā-Rāṣṭhā, it is declared, that the city in which Chandra-gupta resided, was to the north of the hills, and from some particular circumstances that will be noticed hereafter, it appears, that they could not be above five or six miles distant from it. Megasthenes informs us also, that this famous city was situated near the confluence of the Erannoboas with the Ganges. The Erannoboas has been supposed to be the Sone, which has the epithet of Hiraṇya-bāha, or gold-wafting, given to it in some poems. The Sone, however, is mentioned as a distinct river from the Erannoboas, both by Pliny and Arrian, on the authority of Megasthenes: and the word Hiraṇya-bāha, from which the Greeks made Erannoboas, is not a proper name, but an appellative, (as the Greek Chrysorboas,) applicable, and is applied, to any river that rolls down particles of gold with its sands. Most rivers in India, as well as in Europe, and more particularly the Ganges, with all the rivers that come down from the northern hills, are famous in ancient history for their golden sands. The Coṣeanus of Arrian, or Coſsagus of Pliny, is not the river Coʃy, but the Coʃán or Cattan, called also Coʃey, Coʃar and Cauʃag, which runs through the province of Midnapoor, and joins the remains of the western branch of the Ganges below Nānṇa-bussan.

The Erannoboas, now the Coʃy, has greatly altered its course for several centuries past. It now joins the Ganges, about five and twenty miles above the place where it united with that river in the days of Megasthenes; but the old bed, with a small stream, is still visible, and is called to this day, Purāṇa-babab, the old Coʃy or the old channel. It is well delineated in Major Rennell’s Atlas, and it joins an arm of the Ganges, formerly the bed of that river, near a place called Nabob-gunga. From Nabob-gunga the Ganges formerly took an extensive sweep to the eastward, towards Hyatpoor, and the old banks of the river are still visible in that direc-
tion. From these facts, supported by a close inspection of the country, I am of opinion, Balkputra was situated near the confluence of the old Goy with the Ganges, and on the spot where the villages of Mynyaree and Bittunpoor-gola now stand; the Ganges proceeding at that time in an easterly direction from Nabob-gunge, and to the north of these villages. The fortified part of Palibothra, according to Megasthenes, extended about ten miles in length, while the breadth was only two. But the suburbs, which extended along the banks of the Ganges, were, I doubt not, ten or fifteen miles in length. Thus Dehli, whilst in a flourishing state, extended above thirty miles along the banks of the Jumna, but, except about the centre of the town, consisted properly of only a single street, parallel to the river.

The ancient geographers, as Strabo, Ptolemy, and Pliny, have described the situation of Palibothra in such a manner that it is hardly possible to mistake it.

Strabo *, who cites Artemidorus, says that the Ganges, on its entering the plains of India, runs in a south direction, as far as a town called Ganges (Ganga-puri) now Allababad; and from thence with an easterly course as far as Palibothra; thence to the sea (according to the Chresomathia from Strabo,) in a southerly direction. No other place but that which we have assigned for the site of Bali-putra, answers to this description of Artemidorus.

Pliny, from Megasthenes, who, according to Strabo, had repeatedly visited the court of Chandragupta, says, that Palibothra was 425 Roman

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* B. 15. p. 719.
miles from the confluence of the Jumna with the Ganges. Here it is necessary to premise, that Megasthenes says the high ways in India were measured, and that at the end of a certain Indian measure, (which is not named but is said to be equal to ten stadia,) there was a cippus, or sort of column erected. No Indian measure answers to this, but the Brāhmeni or astronomical cofs of four to a Yojana. This is the Hindu statute cofs, and equal to 1.227 British miles. It is used to this day by astronomers, and by the inhabitants of the Panjab, hence it is very often called the Panjābi cofs: thus the distance from Labor to Multan, is reckoned, to this day, to be 345 Panjābi, or 90 common cofs.

In order to ascertain the number of Brāhmeni cofs, reckoned formerly between Allababad and Palibothra, multiply the 425 Roman miles by eight, (for Pliny reckoned so many stadia to a mile,) and divide the whole by ten, (the number of stadia to a cofs, according to Megasthenes,) and we shall have 340 Brāhmeni cofs, or 417.18 British miles; and this will bring us to within two miles of the confluence of the old Coofy with the Ganges.

Strabo informs us also, that they generally reckoned about 6000 stadia from Palibothra to the mouth of the Ganges; and, from what he says, it is plain, that these 6000 stadia are to be understood of such as were used at sea, whereof about 1100 make a degree. Thus 6000 of these stadia give 382 British miles. According to Pliny, they reckoned more accurately, 6380 stadia, or 406 British miles, which is really the distance by water, between the confluence of the old Coofy with the Ganges, and Injellec at the mouth of the Ganges. Ptolemy has been equally accurate in assigning the situation of Palibothra,
relatively to the towns on the banks of the Ganges which he mentions, above and below it. Let us begin from the confluence of the Tusò, now the Tonfè with the Ganges.

Tusò, now the Tonfè (see Major Rennell's course of the Ganges.)

Cindia, now Conteeah.

Sagala, (in Sanscrit Sacheła, but in the vulgar dialects Sokheila,) now Vindhya-Vāsni near Mirza-poor.

Sambalaca, in Sanscrit Sammallaça: it is now called Sumbulpoor, and is situated in an island opposite to Patha. It is called Sabelpoor in Major Rennell's map of the course of the Ganges, but the true name is Sumbulpoor. It derived its celebrity as well as its name, from games (for so the word Sammallaca imports) performed there every year, in honor of certain heroes of antiquity. During the celebration of these games, Sammallaça was frequented by a prodigious concourse of merchants and all sorts of people, insomuch, that it was considered as the greatest fair in the country. This place is mentioned in the Hari-esbêtra-mahatmya, which contains a description of the principal places of worship in north Babar.

Borcaea, now Borounca, opposite to Bar and Rajowly, near Mowah on the Byar, about three miles from the Ganges, which formerly ran close by it. It was the place of residence of the kings of the Bhur tribe, once very powerful in this country.

Sagala, Monghier. In Ptolemy's time, it was situated at the junction of the river Fulgo with the Ganges, which he derives from the mountains of Ufcentus, as that word probably is, from Ecbac-des, or country of Echac, or, as it is written in the maps Ecbauk: there are five or six places of this name in the mountains of Ramgur. The river Fulgo is the
Oreophontes. [Harârìpûnt or Harârìpûnt in the vulgar dialects; in Sanscrit it is Harârâna, from Hara, and Arâna, which implies a piece of ground consecrated to Hara or Mahâdeva. The word Arâna is always pronounced in the spoken dialects Arpunt; thus they say Crishnarânt.] It is now Rangamatty. Here was formerly a place of worship, dedicated to Mahâdeva or Hara, with an extensive tract of ground appropriated to the worship of the God, but the Ganges having destroyed the place of worship, and the holy ground having been resumed during the invasions of the Muslims, it is entirely neglected. It still exists, however, as a place of worship, only the image of the Pballus is removed to a greater distance from the river.

Aganagara, literally the Nagarâ or town of Aga. It is still a famous place of worship, in the dwipa [island or peninsula] of Aga, called from that circumstance Aga-dwipa; the true name is Agar-dwipa. A few miles above Aga-Nagara, was the city called Catacûpe by Arrian, from Catwa-dwipa, a place famous in the Purânas. It is now called Catwa.

Ganges-regia, now Satgauw, near Hoogly. It is a famous place of worship, and was formerly the residence of the kings of the country, and said to have been a city of an immense size, so as to have swallowed up one hundred villages, as the name imports; however, though they write its name Satgauw, I believe it should be Sâtgauw, or the seven villages, because there were so many consecrated to the seven Rûshis, and each of them had one appropriated to his own use.

Palura now Polcra or Pollcra, four or five miles to the west of Oolbarya, below Budge-budge. A branch of the Ganges ran formerly to the west of it, and after passing by Naga-basen or Nagam-basen fell into the sea toward Ingelle. From Nagam-basen, the western branch of the Ganges was denominated Cambuson Ostium by the Greeks. This place is now
ridiculously called Nanga-bāṣṭan or the naked abode; whereas its true name is Naga-bāṣṭa, or the abode of snakes, with which the country abounds.

Sir William Jones says, "the only difficulty in deciding the situation of Palibothra to be the same as Pāṭalī-putra, to which the names and most circumstances nearly correspond, arose from hence, that the latter place extended from the confluence of the Sone and the Ganges to the site of Patna, whereas Palibothra stood at the junction of the Ganges and the Erannobas; but this difficulty has been removed, by finding in a classical Sanscrit book near two thousand years old, that Hiranyakāma, or golden armed, which the Greeks changed into Erannobas, or the river with a lovely murmur, was in fact another name for the Sone itself; though Megasthenes, from ignorance or inattention has named them separately." Vide Asiatick Researches, Vol. IV. p. 11.

But this explanation will not be found sufficient to solve the difficulty, if Hiranyakāma be, as I conceive it is, not the proper name of a river, but an appellative, derived from an accident common to many rivers.

Pāṭalī-putra was certainly the capital, and the residence of the kings of Magadha or South Bebar. In the Mudrā- Rācshasa, of which I have related the argument, the capital city of Chandragupta is called Cusumapaṇḍa throughout the piece, except in one passage, where it seems to be confounded with Pāṭalīputra, as if they were different names for the same place. In the passage alluded to, Rācshasa asks one of his messengers if he had been at Cusumapaṇḍa? The man replies, "Yes, I have been at Pāṭalīputra." But Cu-
Sumbhun, or Phulbavee, to call it by its modern name, was, as the word importis, a pleasure or flower garden, belonging to the kings of Patna, and situate indeed about ten miles W. S. W. from that city, but certainly never surrounded with fortifications, which Amanta, the author of the Mudra-Racchasa says, the abode of Chandra-Gupta was. It may be offered in excuse for such blunders as these, that the authors of this, and the other poems and plays I have mentioned, written on the subject of Chandra-Gupta, which are certainly modern productions, were foreigners; inhabitants, if not natives of the Deccan; at least Annanta was, for he declares that he lived on the banks of the Godaveri.

But though the foregoing considerations must place the authority of these writers far below the ancients whom I have cited for the purpose of determining the situation of Palibothra, yet, if we consider the scene of action, in connexion with the incidents of the story in the Mudra-Racchasa, it will afford us clear evidence that the city of Chandra-Gupta could not have stood on the site of Patna, and a pretty strong presumption also, that its real situation was where I have placed it, that is to say, at no great distance from where Rajemebal now stands. For first, the city was in the neighbourhood of some hills, which lay to the southward of it. Their situation is expressly mentioned; and for their contiguity, it may be inferred, though the precise distance be not set down, from hence; that king Nanda’s going out to hunt, his retiring to the reservoir among the hills near Patalcandara to quench his thirst, his murder there, and the subsequent return of the assassin to the city with his master’s horse, are all occurrences related as having happened on the same day. The messengers also, who were sent by the young king after the discovery of the murder, to fetch the body, executed their commission and returned to the city.
the same day. These events are natural and probable, if the city of Chandrā-Gupta was on the site of Rajamebal, or in the neighbourhood of that place; but are utterly incredible, if applied to the situation of Patna, from which the hills recede at least thirty miles in any direction.

Again, Pātalacandara in Sanscrit signifies the crater of a volcano; and in fact, the hills that form the glen in which is situated the place now called Mootijarna, or the pearl dropping spring, agreeing perfectly, in the circumstances of distance and direction from Rajamebal, with the reservoir of Pātalacandara, as described in the poem, have very much the appearance of the crater of an old volcano. I cannot say I have ever been on the very spot, but I have observed in the neighbourhood, substances, that bore undoubted marks of their being volcanic productions: no such appearances are to be seen at Patna, nor any trace of there having ever been a volcano there, or near it. Mr. Davis has given a curious description of Mootijarna, illustrated with elegant drawings. He informs us there is a tradition, that the reservoir was built by Sultan Suja: perhaps he only repaired it.

The confusion Ananta, and the other authors above alluded to, have made in the names of Pātali-putra, and Bāli-putra appears to me not difficult to be accounted for. While the sovereignty of the kings of Magadha or south Babar was exercised within the limits of their hereditary dominions, the seat of their government was Pātali-putra, or Patna: but Jarasandha, one of the ancestors of Chandra-Gupta, having subdued the whole of Prāachi, as we read in the Purānas, fixed his residence at Bāli-putra, and there he suffered a most cruel death from Cṛṣṇa and Bala-ra'ama, who caused him to be split asunder. Bala restored the son, Sahadeva, to his hereditary dominions; and from that time, the kings of Magadha, for twenty-four
generations, reigned peaceably at Patna; until Nanda ascended the throne, who proving an active and enterprising prince, subdued the whole of Prachi, and having thus recovered the conquests that had been wrested from his ancestor, probably re-established the seat of empire at Bali-putra: the historians of Alexander positively affirm that he did. Thus, while the kings of Pilibothra, as Diodorus tells us, sunk into oblivion through their sloth and inactivity, (a reproach which seems warranted by the utter silence observed of the posterity of Bala-raama in the Puranas, not even their names being mentioned,) the princes of Patali-putra, by a contrary conduct, acquired a reputation that spread over all India: it was therefore natural for foreign authors, (for such at least Ananta was,) especially in compositions of the dramatic kind, where the effect is oftentimes best produced by a neglect of historical precision, of two titles, to which their hero had an equal right, to distinguish him by the most illustrious. The author of Sacontala has committed as great a mistake, in making Hastinapoor the residence of Dushmant, which was not then in existence, having been built by Hasti, the fifth in descent from Dushmant; before his time there was indeed a place of worship on the same spot, but no town. The same author has fallen into another error, in assigning the situation of this city not far from the river Malini; (he should rather have said the rivulet that takes its name from a village now called Malyani, to the westward of Labore: it is joined by a new channel to the Ravy;) but this is a mistake; Hastinapoor lies on the banks of the old channel of the Ganges. The descendants of Puru resided at Sangalã, whose extensive ruins are to be seen about fifty miles to the westward of Labore, in a part of the country now uninhabited. I will take occasion to observe here, that either Arrian has confounded Sangalã with Salgada, or Salgala, or the mistake has been made by his copyists. Frontinus and Polyenus have preserved the true name of this place, now called Calanore, and close to it is a de-
ferted village, to this day called Salgbéda: its situation answers exactly to the description given of it by Alexander's historians. The kings of Sangalá are known in the Persian history by the name of Schangal: one of them assisted Afrasiáb against the famous Caicosru: but to return from this digression to Párali-putra.

The true name of this famous place is Patali-puta, which means, the town of Patali, a form of Dési worshipped there. It was the residence of an adopted son of the Goddes Párali, hence called Párali-putra, or the son of Patali. Párali-putra, and Báli-putra, are absolutely inadmissible as Sanscrit names of towns or places: they are used in that sense, only in the spoken dialects; and this, of itself, is a proof, that the poems in question are modern productions. Párali-pura, or the town of Párali, was called simply Párali, or corruptly Patháli, on the invasion of the Musulmans: it is mentioned under that name in Mr. Dow's translation of Ferishta's history. It is, I believe, the Patalé of Pliny. From a passage in this author, compared with others from Ptolemy, Marcianus Heracleota, and Arrian in his Peripus, we learn, that the merchants, who carried on the trade from the Gangetic Gulph, or Bay of Bengal, to Perimula or Malacca, and to Bengal, took their departure from some place of rendezvous in the neighbourhood of Point Godavery, near the mouth of the Ganga Godavery. The ships used in this navigation, of a larger construction than common, were called by the Greek and Arabian sailors, Colandiophonta, or in the Hindostant dialect, Coilan-di-pota, Coilan boats or ships: for pota in Sanscrit signifies a boat or a ship; and di or da, in the western parts of India, is either an adjective form, or the mark of the genitive case. Pliny has preferred to us the track of the merchants who traded to Bengal: from Point Godavery,
they went to Cape Colinga now Palmira; thence to Dandagula now Tenty-
gully, almost opposite to Fultab;*(*) thence to Tropina, or Triveni and Trebeni,
called Tripina by the Portuguese in the last century; and lastly, to Patale called
Patali, Parithi as late as the twelfth century, and now Patna. Pliny,
who mistook this Patale for another town of the same name, situate at the
summit of the delta of the Indus, where a form of Devi, under the appella-
tion of Patali, is equally worshipped to this day, candidly acknowledges,
that he could by no means reconcile the various accounts he had seen, about
Patale, and the other places mentioned before.

The account transmitted to us of Chandra-gupta, by the historians of
Alexander, agrees remarkably well, with the abstract I have given in this
paper, of the Mudra Raesbasa. By Athenæus he is called Sandracop-
tos; by the others Sandrocottos, and sometimes Androcottos.
He was also called Chandra simply; and accordingly Diodorus Sicu-
lus calls him Xandrames from Chandra, or Chandram in the accu-
factive case; for in the western parts of India, the spoken dialects from the
Sanscrit, do always affect that case. According to Plutarch, in his life
of Alexander, Chandra-gupta had been in that prince's camp, and
had been heard to say afterwards, that Alexander would have found no
difficulty in the conquest of Præchi, or the country of the Prajans, had he at-
temted it, as the king was despised, and hated too, on account of his cru-
elty.

In the Mudra-Raesbasa, it is said, that king Nanda, after a severe fit of
illness, fell into a state of imbecility which betrayed itself in his discours

* This is the only place in this essay not to be found in Rennell's Atlas.
and actions; and that his wicked minister Sacatara, ruled with despotic sway in his name. Diodorus Siculus, and Curtius relate, that Chandram was of a low tribe, his father being a barber. That he, and his father Nanda too, were of a low tribe, is declared in the Visthu-purana, and in the Bhagavat. Chandram as well as his brothers was called Maurya from his mother Mura; and as that word in Sanscrit signifies a barber, it furnished occasion to his enemies to asperse him, as the spurious offspring of one. The Greek historians say, the king of the Prajū was assassinated by his wife’s paramour, the mother of Chandra; and that the murderer got possession of the sovereign authority, under the specious title of regent, and guardian to his master’s children, but with a view to destroy them. The Purānas, and other Hindu books, agree in the same facts, except as to the amours of Sacatara with Mura the mother of Chandragupta, on which head they are silent. Diodorus and Curtius are mistaken, in saying, that Chandram reigned over the Prajū at the time of Alexander’s invasion: He was contemporary with Seleucus Nicator.

I suspect, Chandragupta kept his faith with the Greeks or Tavans, no better than he had done with his ally, the king of Nepal; and this may have been the motive for Seleucus crossing the Indus at the head of a numerous army; but finding Sandro-coptos prepared, he thought it expedient to conclude a treaty with him, by which, he yielded up the conquests he had made, and to cement the alliance, gave him one of his daughters in marriage. Chandragupta appears to have agreed, on his part, to furnish

* See the Jainaśastra, where it is said, that the offspring of a barber, begot by a female of the Śādra tribe, is called Maurya: the offspring of a barber and a slave woman, is also called Maurya.

† Strabo, B. 15. p. 724.
Seleucus annually, with fifty elephants; for we read of Antiochus the great, going to India, to renew the alliance with king Sophagasmus, and of his receiving fifty elephants from him. Sophagasmus, I conceive, to be, a corruption of Shīvaca-Sena, the grandson of Chandrá-gupta. In the Purāṇas, this grandson is called Asēcāvard-dhana, or full of mercy, a word of nearly the same import as Asēca-sena, or Shīvaca-Sena, the latter signifying, he whose armies are merciful, do not ravage and plunder the country.

The son of Chandrá-gupta is called Allitrochates and Amītrocates by the Greek historian. Seleucus sent an ambassador to him: and after his death, the same good intelligence was maintained by Antiochus, the son, or the grandson of Seleucus. This son of Chandrá-gupta is called Varisāra in the Purāṇas; according to Parāsara, his name was Dāsaratha; but neither the one or the other bear any affinity to Amītrocates: this name appears however, to be derived from the Sanskrit Mitra-gupta, which signifies, laved by Mitra or the sun, and therefore probably was only a surname.

It may be objected to the foregoing account, the improbability of a Hindu marrying the daughter of a Yavana, or indeed, of any foreigner. On this difficulty I consulted the Pundits of Benares, and they all gave me the same answer; namely, that in the time of Chandrá-gupta, the Yavanas were much respected, and were even considered as a sort of Hindus, though they afterwards brought upon themselves the hatred of that nation, by their cruelty, avarice, rapacity, and treachery in every transaction, while they ruled over the western parts of India; but that at any rate, the objection did not apply to the case; as Chandrá-gupta himself was a Sudra,
that is to say, of the lowest class. In the *Vishnu-purāṇa*, and in the *Bhāgavat*, it is recorded, that eight Grecian kings reigned over part of India; they are better known to us by the title of the Grecian kings of Bactriana. *Arrian*, in his *Periplus*, enumerating the exports from Europe to India, sets down as one article, beautiful virgins, who were generally sent to the market of Baroche. The Hindus acknowledge, that formerly, they were not so strict, as they are at this day; and this appears from their books, to have been their case. *Strabo* does not positively say that *Chandra-gupta* married a daughter of *Seleucus*, but that *Seleucus* cemented the alliance he had made with him, by connubial affinity; from which expression, it might equally be inferred, that *Seleucus* married a daughter of *Chandra-gupta*; but this is not so likely, as the other, and it is probable the daughter of *Seleucus* was an illegitimate child, born in *Persia*, after *Alexander*’s conquest of that country.

**Before** I conclude, it is incumbent on me to account for the extraordinary difference between the line of the *Surya-Varṣas* or children of the Sun, from *Icshwacu* to *Dasaratha-Rāma*, as exhibited in the second volume of the *Afiatick Researches*, from the *Vishnu-purāṇa* and the *Bhāgavat*, and that set down in the table I have given with this essay. The line of the *Surya-Varṣas*, from the *Bhāgavat*, being absolutely irreconcilable with the ancestry of *Arjuna* and *Krīṣna*, I had at first rejected it, but after a long search, I found it in the *Rāmāyen*, such as I have represented it in the table, where it perfectly agrees with the other genealogies. *Dasaratha-Rāma* was contemporary with *Parasu-Rāma*, who was however, the eldest; and as the *Rāmāyen* is the history of *Dasaratha-Rāma*, we may reasonably suppose, his ancestry was carefully set down, and not wantonly abridged. I shall now conclude this essay with the following remarks:
It has been asserted in the second volume of the *Asiatick Researches*, that Parāśara lived about 1180 years before Christ; in consequence of an observation of the places of Colures. But Mr. Davis having considered this subject with the minutest attention, authorizes me to say, that this observation must have been made 1391 years before the Christian era. This is also confirmed by a passage from the Parāśara Sanhitā, in which it is declared, that the Udaya or heliacal rising of Canopus (when at the distance of thirteen degrees from the sun, according to the Hindu astronomers) happened in the time of Parāśara on the tenth of Cartica; the difference now amounts to twenty-three days. Having communicated this passage to Mr. Davis, he informed me that it coincided with the observation of the places of the Colures in the time of Parāśara.

Another synchronism still more interesting, is that of the flood of Deucalion, which according to the best Chronologers happened 1390 years before Christ. Deucalion is derived from Déo-Cālyun or Déo-Cǎljun: the true Sanscrit name is Déva-Cāla-yavana. The word Cāla-yavana is always pronounced in conversation, and in the vulgar dialects Cālyun or Cǎljun: literally, it signifies the devouring Yavana. He is represented in the Purāṇas, as a most powerful Prince, who lived in the western parts of India, and generally resided in the country of Camboja, now Gazni, the ancient name of which, is Safsī or Safīna. It is true, they never bestow upon him the title of Déva: on the contrary, they call him an incarnate Demon; because he presumed to oppose Čṛiśna; and was very near defeating his ambitious projects: indeed Čṛiśna was nearly overcome, and subdued after seventeen bloody battles; and according to the express words of the Purāṇas, he was forced to have recourse to treachery: by which means Cālyun was totally defeated in the eighteenth engagement. That his followers and descendants,
should bestow on him the title of *Deva* or *Deo* is very probable; and the numerous tribes of *Hindus*, who to this day call *Krishna* an impious wretch, a merciless tyrant, an implacable and most rancorous enemy, in short, these *Hindus*, who consider *Krishna* as an incarinate demon, now expiating his crimes in the fiery dungeons of the lowest hell, consider *Całyün* in a very different light, and certainly would have no objection to his being called *Deo-Całyün*. Be it as it may, *Deucalion* was considered as a *Deva* or *Deity* in the west, and had altars erected in his honor.

The Greek mythologists are not agreed about him, nor the country in which the flood, that goes by his name, happened: some make him a *Syrian*; others say that his flood happened in the countries, either round mount *Etna*, or mount *Athos*; the common opinion is, that it happened in the country adjacent to mount *Parnassus*: whilst others seem to intimate, that he was a native of *India*, when they assert that he was the son of *Prometheus*, who lived near *Cabul*, and whose Cave was visited by *Alexander* and his *Macedonian*. It is called in the *Puránas Garuda-sthan*, or the place of the *Eagle*, and is situated near the place called *Shibir* in Major *Rennell*’s Map of the western parts of *India*; indeed *Pramathas* is better known in *India* by the appellation of *Shébar*. * Déo-Całyün*, who lived at *Gazni*, was obliged on the arrival of *Krishna*, to fly to the adjacent mountains, according to the *Puránas*; and the name of these mountains was formerly *Parnasa*, from which the Greeks made *Parnassus*: they are situated between *Gazni* and *Peshawer*. *Krishna*, after the defeat of *Całyün*, desolated his country with fire and sword. This is called in *Sanferit Pralaya*; and may be effected by water, fire, famine, pestilence and war: but in the vulgar dialects, the word *Pralaya*.

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* Bamian, (in Sanscrit, Vamiyan,) and Shibir lay to the N. W. of Cabul.*
signifies only a flood or inundation. The legends relating to Deo-Calyun, Prometheus, and his Cave, will appear in the next dissertation I shall have the honor to lay before the society.

II. Megasthenes was a native of Persia, and enjoyed the confidence of Sibyrtius* governor of Arachosia (now the country of Candahar, and Gazni) on the part of Seleucus. Sibyrtilus sent him frequently on embassies to Sandrocuptos. When Seleucus invaded India, Megasthenes enjoyed also the confidence of that Monarch, who sent him in the character of ambassador to the court of the king of Prachti. We may safely conclude, that Megasthenes was a man of no ordinary abilities; and as he spent the greatest part of his life in India, either at Candahar, or in the more interior parts of it, and as from his publick character, he must have been daily conversing with the most distinguished persons in India, I conceive that, if the Hindus of that day had laid claim to so high an antiquity, as those of the present, he certainly would have been acquainted with their pretensions, as well with those of the Egyptians and Chaldeans; but on the contrary, he was astonished to find a singular conformity between the Hebrews and them, in the notions about the beginning of things, that is to say, of ancient history. At the same time I believe, that the Hindus, at that early period, and perhaps long before, had contrived various astronomical periods and cycles, though they had not then thought of framing a civil history adapted to them. Astrology may have led them to suppose, so important and momentous an event, as the creation, must have been connected with particular conjunctions of the heavenly bodies; nor have the learned in Europe been entirely free from such notions. Having once laid down this position, they did not know where to stop; but the

* Arrian, B. 5. p. 203.
whole was conducted in a most clumsy manner, and their new chronology abounds with the most gross absurdities. Of this, they themselves are conscious, for though willing to give me general ideas of their chronology, they absolutely forsook me, when they perceived my drift in a stricter investigation of the subject.

The loss of Megasthenes's works is much to be lamented: from the few scattered fragments preserved by the ancients, we learn that the history of the Hindus did not go back above 5042 years. The MSS differ; in some we read 6042 years; in others 5402 and three months, to the invasion of India by Alexander. Megasthenes certainly made very particular enquiries, since he noticed even the months. Which is the true reading, I cannot pretend to determine; however, I incline to believe it is 5042, because it agrees best with the number of years assigned by Albumazar, as cited by Mr. Bailly, from the creation to the flood. This famous astronomer, whom I mentioned before, had derived his ideas about the time of the creation, and of the flood, from the learned Hindus he had consulted; and he assigns 2226 years, between what the Hindus call the last renovation of the world, and the flood. This account from Megasthenes and Albumazar, agrees remarkably well with the computation of the Septuagint. I have adopted that of the Samaritan Pentateuch, as more conformable to such particulars as I have found in the Puranas; I must confess, however, that some particular circumstances, if admitted, seem to agree best with the computation of the Septuagint; besides, it is very probable, that the Hindus, as well as ourselves, had various computations of the times, we are speaking of.

Megasthenes informs us also, that the Hindus had a list of kings from Dionysius to Sandrocuptos, to the number of 153; perhaps this is
not to be understood of successions in a direct line: if so, it agrees well enough with the present list of the descendants of Nausha or Deo-Naush. This is what they call the genealogies simply, or the great genealogy, and which they consider as the basis of their history. They reckon these successions in this manner: from Nausha to Crīṣhna; andcollaterally from Naush to Paricshita; and afterwards from Jarāsandha, who was contemporary with Crīṣhna. Accordingly, the number of kings amounts to more than 153; but as I wanted to give the full extent of the Hindu chronology, I have introduced eight or nine kings, which, in the opinion of several learned men, should be omitted, particularly six, among the ancestry of Crīṣhna.

Megasthenes, according to Pliny and Arrian, seems to say, that 5042 years are to be reckoned between Dionysius or Deo-Nausha and Alexander, and that 153 kings reigned during that period; but, I believe it is a mistake of Pliny and Arrian; for 153 reigns, or even generations, could never give so many years.

Megasthenes reckons also fifteen generations between Dionysius and Hercules, by whom we are to understand Crīṣhna and his brother Bala-Rama. To render this intelligible, we must consider Naush in two different points of view: Naush was at first a mere mortal; but on mount Meru he became a Deva or God, hence called Deva Naush or Deo-Naush in the vulgar dialects: this happened about fifteen generations before Crīṣhna. It appears, that like the spiritual rulers of Tartary and Tibet, (which countries include the holy mountain of Meru) Deo-Naush did not, properly speaking, die; but his soul shifted its habitation, and got into a new body, whenever the old one was worn out, either through age or sickness. The names of three of the successors of Nausha have been preserved by Arri-
of the Hindus.

And they are Spartembas, Budyas and Credwas. The first seems derived from the Sanscrit Prachinwan, generally pronounced Prachinban, from which the Greeks made Sparteeman in the accusative case; the two others are undubitably Sanscrit, though much distorted, but I suspect them to be titles rather than proper names.

III. This would be a proper place to mention the posterity of Noah or Satyavrata, under the names of Sharma or Shama, (for both are used,) Charma and Jyapti. They are mentioned in five or six Puranas; but no further particulars concerning them are related, besides what is found in a former essay on Egypt. In the list of the thousand names of Vishnu, a sort of Litany, which Brähmens are obliged to repeat on certain days, Vishnu is called Shrama, because according to the learned, Shrama or Shama was an incarnation of that deity. In a list of the thousand names of Siva, as extracted from the Padma-purana, the 371st name is Sharmajaya, which is in the fourth case, answering to our dative, the word praise being understood: Praise to Sharmaja or to him, who was incarnated in the house of Shrama.

The 998th name is Sharmaputradaya, in the fourth case also, praise to him who gave offspring to Sharna. My learned friends here inform me, that it is declared in some of the Puranas, that Sharna, having no children, applied to Siva, and made Tapasya in his honor. Isvara was so pleased, that he granted his request, and condescended to be incarnated in the womb of Sharna’s wife, and was born a son of Sharna, under the name of Baleśwara, or Isvara the infant. Baleśwara or simply Iswara, we mentioned in a former essay on Semiramis; and he is obviously the Assur of scripture.
In another list of the thousand names of Siva (for there are five or six of them extracted from so many Purāṇas) we read as one of his names Baleśa, Isa or Iswara the infant. In the same list, Siva is said to be Varāhi-Palaca, or he who fostered and cherished Varāhi the consort of Vishnu, who was incarnated, in the character of Sharma. From the above passages, the learned here believe, that Siva, in a human shape, was legally appointed to raise seed to Sharma, during an illness thought incurable; in this sense Japhet certainly dwelt in the tents of Shem. My chief Pandit has repeatedly, and most positively assured me, that the posterity of Sharma, to the tenth or twelfth generation, is mentioned in some of the Purānas. His search after it has hitherto proved fruitless, but it is true, that we have been able to procure only a few sections of some of the more scarce and valuable Purānas. The field is immense, and the powers of a single individual too limited.

IV. The ancient statues of the gods having been destroyed by the Musulmans, except a few which were concealed during the various persecutions of these unmerciful zealots, others have been erected occasionally, but they are generally represented in a modern dress. The statue of Bala-Rama at Muttra, has very little resemblance to the Theban Hercules, and of course does not answer exactly to the description of Megasthenes. There is, however, a very ancient statue of Bala-Rāma, at a place called Bala-deva, or Bal-deo in the vulgar dialects, which answers minutely to his description. It was visited some years ago, by the late Lieutenant Stewart, and I shall describe it in his own words: "Bala-Rāma or Baladeva is represented there, with a ploughshare in his left hand, with which he hooked his enemies, and in his right hand a thick cudgel, with
"which he cleft their sculls: his shoulders are covered with the skin of a tiger. The village of Baldeo is thirteen miles E. by S. from Muttra."

Here I shall observe, that the ploughshare is always represented very small, sometimes omitted; and that it looks exactly like a harpoon, with a strong hook, or a gaff as it is usually called by fishermen. My Pandits inform me also, that Bala-ráma is sometimes represented with his shoulders covered with the skin of a lion.
THE HINDU.

In which previous titles to the present are continued, with the head of a new
chapter.

The Hindu.

I have only a few words to say in this connection, for the position of the present position
with a number of important and instructive articles, which may be of interest to our
readers. I am, however, proud to present a selection of such articles for the benefit of our
readers, and I hope that they will prove of interest to you.

In conclusion, I wish to express my thanks to the Editor for his kind consideration of my
requests. I hope that the present issue will meet with the approval of our readers.

Yours truly,

[Signature]
Remarks on the names of the Cabirian Deities, and on some words used in the mysteries of Eleusis.

BY CAPTAIN FRANCIS WILFORD.

In the Adbhuta-Cosā, we find the following legends, which have an obvious relation to the Deities worshiped in the mysteries of Samothrace.

In Pātāla (or the infernal regions) resides the sovereign queen of the Nāgās (large snakes or dragons); she is beautiful, and her name is Āṣyōruca. There, in a cave, she performed Tapasya with such rigorous austerity, that fire sprang from her body, and formed numerous Agni-tiraths (places of sacred fire) in Pātāla. These fires, forcing their way through the earth, waters and mountains, formed various openings or mouths, called from thence, the flaming mouths, or Juālā-muc'bi. By Samuar (Oceanus) a daughter was born unto her, called Rama-Dēvi. She is most beautiful; she is Lacsamī, and her name is Āṣyotcersha or Āṣyotcrishta: like a jewel she remains concealed in the ocean.

The Dharma-raja, or king of justice, has two countenances: one is mild and full of benevolence; those alone, who abound with virtue, see it. He holds a court of justice, where are many assistants, among whom, are many just, and pious kings: Chitra-Gupta acts as chief secretary. These holy men determine what is dharma, and adharma, just and unjust. His, (Dharma-rejas) servant is called Carma: he brings the righteous
on celestial cars, which go of themselves, whenever holy men are to be brought in, according to the directions of the Dharmarājā, who is the sovereign of the Pitris. This is called his divine countenance, and the righteous alone do see it. His other countenance or form is called Yama; this the wicked alone can see. It has large teeth, and a monstrous body. Yama is the lord of Pātalā; there he orders some to be beaten, some to be cut to pieces, some to be devoured by monsters, &c. His servant is called Casmala, who, with ropes round their necks, drags the wicked over rugged paths, and throws them headlong into hell. He is unmerciful, and hard is his heart: everybody trembles at the sight of him. According to Mnaseas, as cited by the scholiast of Apollonius Rhodius, the names of the Cabirian gods were Axieros, or Ceres, or the Earth; Axiocersa or Proserpine; Axiocersos or Pluto; to whom they add a fourth, called Casmilus, the same with the infernal Mercury.

Axieros is obviously derived from Aśyoreruca, or rather from Aśyoru or Aśyorus; for such is the primitive form; which signifies literally, She whose face is most beautiful.

Axiocersa is derived from Aśyotcersa, a word of the same import with the former, and which was the sacred name of Proserpine. This is obviously derived from the Sanskrit Praśarpāni, or She who is surrounded by large snakes and dragons. Nonnus represents her, as surrounded by two enormous snakes, who constantly watched over her. She was ravished by Jupiter, in the shape of an enormous dragon. She was generally supposed to be his daughter; but the Arcadians, according to Pausanias, insisted that she was the daughter of Ceres and Neptune, with whom the ancient mythologists often confound Oceanus.
As she is declared, in the sacred books of the Hindus, to be the same with Lācshmi, her consort of course is Vishnu; who rules, according to the Purāṇas, in the west, and also, during the greatest part of the night. In this sense Vishnu is the Dis, of the western mythologists, the black Jupiter of Statius; for Vishnu is represented of a black or dark azure complexion: Pluto or Yama is but a form of Vishnu. The titles of Dis, or Ađes, appear to me, to be derived from Ađī or Ađīn, one of the names of Vishnu. When Cicero says (9) Terrena autem vis omnis atque natura, Dīti patri dedicata est; that is to say, that nature, and the powers or energy of the earth, are under the direction of Dis, this has no relation to the judge of departed souls, but solely belongs to Vishnu.

Aśiokersos, or in Sanscrit Aśiokcersa, or Aśiokcersas, was Pluto or Dis, and was meant for Vishnu. Vishnu is always represented as extremely beautiful; but I never found Aśiokcersa among his titles: he is sometimes called Aśkcersa, a word of the same import.

Cashmala or Cashmala's, is obviously the Casmilus of the western mythologists. The appellation of Cabiri, as a title of these deities is unknown to the Hindus; and I believe, by the Cabirian gods, we are to understand, the gods worshipped by a nation, a tribe, or a society of men called Cabires. The Cuveras, or Cuberas, as it is generally pronounced, are a tribe of inferior deities, possessed of immense riches, and who are acquainted with all places under, or above ground, abounding with precious metals and gems. Their history in the Purāṇas, begins with the first Menñu, and no mention is made in it of floods, at least, my learned

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* Cic. de natura Deorum.
friends tell me so. They are represented with yellow eyes, like the Pingeac-
lius, (of whom we spoke in a former essay on Egypt,) and perhaps may be the same people; certain it is, the Pingeacbus worshipped the Cabirian
gods. Diodorus Siculus says, that the invention of fire, and the work-
ing of mines, was attributed to them; and we find a Cabirus represented
with a hammer in his hand.

At the conclusion of the mysteries of Eleusis, the congregation was
dismissed in these words Ῥobuf, Ὀμ, Παξ: Conxt. Om. Pax. These mysterious
words have been considered hitherto as inexplicable; but they are pure Sans-
crit, and used to this day, by Brāhmens at the conclusion of religious rites.
They are thus written in the language of the gods, as the Hindus call the
language of their sacred books, Cāncsha, Om, Pacsha.

Cāncsha signifies the object of our most ardent wishes.

Om is the famous monosyllable, used both at the beginning, and conclu-
sion of a prayer, or any religious rite, like Amen.

Pacsha exactly answers to the obsolete Latin word Vix: it signifies
change, course, stead, place, turn of work, duty, fortune. It is used particular-
ly, after pouring water in honor of the gods and Pitris. It appears also
from Hesychius,

I. That these words were pronounced aloud, at the conclusion of every
momentous transacttion, religious, or civil.

II. That when judges, after hearing a cause, gave their suffrages, by
dropping pebbles of different colours into a box, the noise made by each pebble was called by one of these three words, (if not by all three) but more probably by the word paesba; as the turn, or paesba of the voting judge, was over.

When lawyers pleaded in a court of justice, they were allowed to speak two or three hours, according to the importance of the cause; and for this purpose, there was a Clepsydra, or water clock ready, which making a certain noise at the end of the expired paesba, vix, or turn, this noise was called Paesba, &c.

The word paesba is pronounced vaesb and, vaet in the vulgar dialects, and from it the obsolete Latin word vix is obviously derived. The Greek language has certainly borrowed largely from the Sanscrit; but it always affects the spoken dialects of India; the language of the Latians in particular, does, which is acknowledged to have been an ancient dialect of the Greek.
ACCOUNT of the Pagoda at Perwuttum.

EXTRACT of a Journal by Captain Colin Mackenzie, communicated by Major Kirkpatrick.

The pagoda of Perwuttum, hitherto unknown to Europeans, is situated near the south bank of the Kistna, in a wild tract of country, almost uninhabited except by the Chinfluars about

Horizontal \[ 65 \text{ Miles W. of Inawada in Guntoor.} \]

Distance \[ 63 \text{ Miles E. N. E. of Canoul.} \]

And supposed to be 103 miles S. and \( \frac{1}{2} \) E. of Hyderabad.

March 14th, 1794.—Having sent notice to the manager of the revenues, (the principal officers of the Circar) that I was desirous of seeing the pagoda, provided there was no objection, I was informed at noon, that I might go in. The manager did not appear very desirous of paying any of the common civilities, but the Brâhmens crowded round to conduct me into the place. On entering the south gate, we descended by steps, and through a small door, to the inner court, where the temples are: in the centre was the pagoda of Mallecarjee, the principal deity worshipped here. It is square, and the roof is terminated by a pyramid of steps; the whole walls, and roof on the outside, are covered with brass plates, which have been gilt, but the gilding is now worn off. These plates are joined together by small bars and sockets, so that the whole may be taken off without damage; the spire or pyramid is not above thirty feet from the ground; the plates are
plain, excepting a few embossed figures of women, and some small ornaments on the friezes of the doors, the pannels of which are also plated. A statue, with three legs, is placed over each of the three entries; to support this uncommon figure, a post is carried up, which, at first sight, gives it the appearance of being empaied. On the west side of the pagoda, inscriptions are engraved very neatly, on three sheets of brass plates. Opposite to the south side, on a neat basement, and pedastal, ornamented with brazen figures of cows, is a slender pillar about twenty-four or thirty feet high, entirely composed of brass plates; it is bent; and from the joints, which plainly appear in the plating, it seems to be laid on a bamboo, enclosed within. The four sides of the pedestal are covered with inscriptions, two in Gentoo or Tellinga, one in Grindam, and one in Naggerim: the first seven lines of the latter, in large well defined characters, I copied; five smaller lines followed, which I could not copy so exactly, the character being small, and the pedestal highly elevated. Some characters are also engraved on the fillet, and ornamental parts of the moulding. From hence, I was conducted to the smaller and more antient temple of Mallegarjee, where he is adored, in the figure of a rude stone, which I could just distinguish, through the dark vista of the front-building on pillars. Behind this building, an immense fig-tree covers with its shade the devotees and attendants, who repose on seats, placed round its trunk, and carpeted. Among these, was one Byraggy, who had devoted himself to a perpetual residence here; his sole subsistence was the milk of a cow, which I saw him driving before him: an orange coloured rag was tied round his loins, and his naked body was besmeared with ashes.

Some of the Brâhmens came in the evening, with a copy of the inscription on two of the brass plates: they professed, not to know exactly, the
meaning of them, being, they said, *Sanskritum sigum*. The same ignorance of the language of their religious books seems to prevail through all these countries. The Brāhmens, in attendance here, are relieved at stated times, from Autecowr and other places, as this place is unwholesome, and the water bad. One of them said, he had books at Autecowr, explanatory of the history of the pagoda, and of the figures carved on the walls. Though they had never heard that any European had been here before, they did not express any surprise at this visit. Some of them applied for medical aid, but no fever prevailed among them at that time.

During the troubles of Sevi-row, the Chinsuars occupied the pagoda, who stripped it of some ornaments and damaged it. Since Sevi-row had submitted, the revenues derived from the resort of pilgrims, are collected for the Canoul Circar, by a manager or amilladar, who resides within the enclosure, as do the sebundies and peons, stationed here to protect the pilgrims, who come from all parts at certain stated festivals.

The red colour that predominates in the rock of this country, (which is a granite) is very remarkable. The superstratum, which in many places forms the naked superficies of the soil, is of a black colour, and from the smooth shining surface it frequently exhibits, appears to have been formerly in a state of fusion, but goes to no great depth; the next stratum is composed of grains of a reddish colour, mixed with others of a white shining quartz, in greater proportion and of a larger size, so as to give the stone, when quarried, a greyish colour, which is more observable after it has been cut or chiselled. Iron is found in several parts of this mountainous tract; and so are diamonds, but the labour is so great, and the chance of meeting with the veins so very uncertain, that
the digging for them has been long discontinued, the following places were mentioned as producing them, viz.

1. Saringamutta—Near Jatta Reow, on the other side the Kifna, where the ferry and road to Amirabad crosses. N.B. A pagoda here.
2. Routa Pungala—two parous distant, near Patilab Gunja.
3. Caslab Reow—twelve parous down the river. N.B. A ferry, or ford here. After the heavy rains, when the rivers fall, they are found sometimes in the beds. This place is near the ruins of Chundragoopy putnam, formerly a great town on its north bank, and now belonging to Amraritty.

The weather being warm, I was desirous of getting over as much of this bad road, as I could, before noon: my tents and baggage had been sent off at four A. M. and I only remained near the pagoda, with the intention of making some remarks on the sculptures of its wall, as soon as day light appeared. But the Brâhman, with the Rajpoot amuldar, (who had hitherto shewn a hypocrisy that I had not experienced in any other part of the journey,) came to request, that as I was the first European who had ever come so far to visit Mallocarjee, and had been prevented from seeing the object of their worship, by yesterday not being a lucky day, I would remain with them that day, assuring me that the doors would be opened at ten o’clock. I agreed to wait till that hour, being particularly desirous of seeing, by what means the light was reflected into the temple, which the unskilfulness of my interpreter could not explain intelligibly to my comprehension. Notice being at last given, at about half past eight, that the sun was high enough, the doors on the east side the gilt pagoda were thrown open, and a mirror or reflecting speculum, was brought from the Rajpoot amuldar’s house. It was round, about
two feet in diameter, and fixed to a brass handle, ornamented with figures of cows; the polished side was convex, but so small, that it could not reflect the sunbeams; another was therefore brought, rather smaller, and concave, surrounded by a narrow rim, and without a handle. Directly opposite to the gate of the pagoda is a stone building, raised on pillars, enclosing a well, and ending in a point; and being at the distance of twelve or fourteen feet, darkens the gateway by its shadow, until the sun rises above it; this no doubt has been contrived on purpose to raise the expectation of the people, and by rendering the sight of the idol more rare, to favor the imposition of the Brâhmins. The moment being come, I was permitted to stand on the steps in front of the threshold without, (having put off my shoes, to please the directors of the ceremony, though it would not have been insisted on,) while a crowd surrounded me, impatient to obtain a glimpse of the awful figure within. A boy being placed near the doorway, waved and played the concave mirror in such a manner, as to throw gleams of light into the pagoda, in the deepest recess whereof was discovered, by means of these coruscations, a small, oblong, roundish white stone, with dark rings, fixed in a silver case. I was permitted to go no further, but my curiosity was now sufficiently satisfied. It appears, that this God MALLICARJEE, is no other than the Lingam, to which such reverence is paid by certain castes of the Gentooos; and the reason why he is here represented by stones unworked, may be understood from the Brâhmins’ account of the origin of this place of worship. My interpreter had been admitted the day before into the sanctum sanctorum; and allowed to touch the stone, which he says is smooth, and shining, and that the dark rings or streaks, are painted on it; probably it is an agate, or some other stone of a silicious kind, found near some parts of the Kistna, and of an uncommon size. The speculums were of a whitish metal, probably a mixture of tin and brass.
These arts, designed to impose on the credulity of the ignorant superstitious crowd, seem to have been cultivated successfully here, and the difficulties attending the journey, with the wild gloomy appearance of the country, no doubt add to the awful impression made on their minds.

The Brâhmins having given me the following account of the origin of the pagoda, I insert it here, as it may lead to further inquiry, and by a comparison with other accounts, however disguised by fable or art, some light may be thrown on the history and manners of a people so very interesting.

"At Chundra-gumty-painnum, twelve parous down the river, on the north side, formerly ruled a Raja, of great power; who being absent several years from his house, in consequence of his important pursuits abroad; on his return, fell in love with his own daughter, who had grown up during his long absence. In vain the mother represented the impiety of his passion: proceeding to force, his daughter fled to these deserts of Persuuttum, first uttering curses and imprecations against her father; in consequence of which, his power and wealth declined, his city, now a deserted ruin, remains a monument of divine wrath, and himself, struck by the vengeance of heaven, lies deep beneath the waters of Puttela-gunga, which are tinged green by the string of emeralds that adorned his neck." Here is a fine subject for a fable; it may however furnish a clue to history, as the ruins of this once opulent city are still said to exist. This account of the origin of the devotion here, bears a great resemblance to that of the pilgrimage to Montserrat in Catalonia, mentioned in Barretti's travels.

"The Princess was called Maligndivi, and lived in this wilderness. Among her cattle, was a remarkable fine black cow, which, the complain-
ed to her herdsman, never gave her milk. He watched behind the trees, and saw the cow daily milked by an unknown person; Malica-divi informed of this, placed herself in a convenient situation, and beholding the same unknown person milking the cow, ran to strike him with the iron rod, or mace which she held in her hand; but the figure suddenly disappeared, and to her astonishment, nothing remained but a rude shapeless stone. At night, the God appeared to her in a dream, and informed her, he was the person that milked the cow; she therefore, on this spot, built the first temple that was consecrated to the worship of this Deity, represented by a rude stone.” This is the second temple that was shewn yesterday, where he is exhibited in the rude state of the first discovery, and is called Mudi-Mulla-carjee or Mallecarjee; the other temples were afterwards built, in latter times, by Rajahs and other opulent persons. The Lingam shewn by reflected light in the gilded temple, has also its history, and stories, still more absurd and wonderful, attached to it. It was brought from the (now deserted) city of Chundra-goomty-patnam. The Princess, now worshipped as a Goddess, is also called Bram-Rumbo, or Strichilum-Rumbo, from whence this pagoda is sometimes called Strichillum. She delights peculiarly in Perwuttum, but is called by eighteen other names.

It may be proper here, to take notice of the carvings on the outer walls, as they are remarkable for their number, and contain less of those monstrous figures, than other buildings of this kind. It would appear, that the stories represented on several divisions, or compartments, are designed to impress on the mind some moral lesson, or to heighten the reverence inculcated for the object of adoration here. The customs and manners of the Gentoors, their arms, dress, amusements, and the parade and state, attendant on their Sovereigns, in former times, might be elucidated by a minute
inspection of the figures represented on the walls; drawings of which, and translations of, or extracts from, any books or inscriptions that might be found, having relation to them, would be useful to that end.

The several pagodas, choultries, and courts, are inclosed by a wall 660 feet long, and 410 feet broad. In the centre of this inclosure are the more ancient buildings already described, below the level of the principal gate. A road or avenue, twenty-four feet broad, goes parallel without to this wall, from whence is a descent by steps, to gardens on the north side; from the east gate, a double colonade runs 120 yards, forming a street; an oblong tank is on the west side, from which water was conducted to reservoirs in the gardens, but these are now entirely neglected. The town, or pettah covered the south side, and the S. E. Angle; the form of the inclosure is an oblong square, with one square projection to the west. The great gate-ways are, as usual, supported by stone pillars, leaving apartments for the guard, on each side the entrance; they are covered with spires of brick work, and this, with the pillar between, being retired some feet within the line of walls, shews that they are of more modern construction, though the spires are rather ruinous, and it may be proper to remark, that these brick spires, formed of several stories, with small pilasters of no regular order, and the niches, ornamented with figures in plaiter, seem to be the latest invention used in the pagodas; those, with pyramidal roofs, step fashion, and the summit crowned, sometimes by a globe, are more ancient and of several sizes, (follow as four feet in height;) built of stone, and seem to be the first improvement on the early rude temples, of rough stones set up on end, to cover the image of the God: these first attempts, are frequently seen among the hills. The wall of the inclosure is built of hewn blocks of the greyish stone, from six to seven feet long, by three high, exactly squared, and laid together, and about eight or nine rows of these,
from the level of the interior pavement, leaves its height, from twenty-four varied to twenty-seven feet; the whole of the wall on the outside (being 2,100 feet, by twenty-four, allowing 240 for the opening of the gates and square projection on the west side) is covered with carvings, and figures sculptured out of the block. Every single block has a rim, or border, raised round it, within which, the carving is raised on a level with the rim, designed evidently, to protect the figures from injury, while raised upon the wall.

The first, and lowest row of these stones is covered with figures of elephants, harnessed in different ways, as if led in procession, many of them twisting up trees with their trunks.—2d. The second row, is chiefly occupied with equestrian subjects, horses led, ready saddled, and their manes ornamented; others, tied up to pillars, some loose; a great many horsemen are represented, engaged in fight at full gallop, and armed with pikes, swords, and shields; others are seen hunting the tiger, and running them through with long spears. The riders are represented very small in proportion to the horse; probably, to distinguish the size of the latter, as a smaller cast seems intended to be represented among the led horses, where a few are seen lower in size, something resembling the Aeboen breed of horses. All these figures are very accurately designed. It is remarkable, that several figures are represented galloping off as in flight, and at the same time, drawing the bow at full stretch; these Parthian figures seem to have entirely dropped the bridle, both hands being occupied by the bow; if one of them are seen advancing at full speed, and drawing the bow at the same time. This mode appears to have been practised by the Indians as it is highly probable, that the arts of common life only, are here represented, in the lower rows. 3d. On the third row, a variety of figures are represented, many of them hunting pieces: tygers, (and in one place a lion) attacked by
several persons; crowds of people appear on foot, many armed with bows and arrows, like the Chin-suvars; many figures of Byaggies or Jogies are seen, distinguished by large turbans, carrying their sticks, pots and bundles, as if coming from a journey; some leaning on a stick, as if tired, or decrepit from age; others, approaching with a mien of respect and adoration. The fourth, fifth, sixth, and seventh rows, are filled, (as it would appear from the scanty information I was able to obtain,) with representations of several events regarding the deities of the place, or expressive allegories of the moral and religious dogmas of the Brahmins; and probably, some may record particular events of real history. The eighth has fewer carvings than the rest; some stones are occupied by a single flower of large size, perhaps intended for the sacred flower (lotos); and some, though but a few, by the figure of a God. The ninth, or upper row, is cut into openings in the manner of battlements, and the stones between each of these apertures, are alternately sculptured, with the figures of the Lingam, and a cow shaded by an umbrella, to signify its pre-eminence.

To examine the particular groups represented, would have taken up much more time than I could spare, but I particularly noticed the following: first, A figure, with five heads, weighing two figures in a balance; one of them appears to have a little out-balanced the other. From what I could understand from the Brahmins, this was meant for Brahma, weighing Vishnu, and Siva or Sulramia; the latter is heaviest. This alludes to the different sects, or followers of Vishnu and Siva. Another figure also represented two persons weighed in a balance, both equal; but the explanation of this I could not learn.

2d. Several people pulling at the head and tail of a great snake, which
is twisted round a Lingam, this I had seen carved on the walls of the pagoda of Wentigetta, near Sidout, in September 1792.

3d. Elephants, treading a man under foot.

4th. A naked figure of a woman, approaching the Lingam; in her left hand, she holds the small pot, used for ablution; in her right, a string of beads (Ingum valu); a hand appears, issuing from the Lingam.

The Brâhmens explained the meaning of this sculpture "Acuma Devi " naked, approaching to worship the Lingam; a hand appears suddenly " from it, waving, and a voice is heard, forbidding her to approach, in that " indecent situation." A maxim of decency, in the height of religious zeal, is here inculcated.

5th. The story of Mallescarnje and the sacred cow (the origin of the pagoda,) is represented in two different places. The cow appears, with its udder distended over the Lingam, which differs from the account of the Brâhmens in not being represented as a rough stone; a person near a tree is seen, as if looking on; a kind of division seems to separate these figures from a woman, in a sitting posture, with an umbrella held over her, to denote superior rank; on the right, behind a tree, is a figure very indistinct, probably intended to represent the herdsman; the trees are badly executed.

6th. Among the number of animals in the procession on the second and third row, two camels are represented, with a person on each, beating the nagara, or great drum.
7th. In one compartment the figure of an alligator, or crocodile, with its scale and monstrous teeth is seen, running open-mouthed, to devour a person lying before it; two women are standing, near a third, seated; they are looking on a child near them. I got no explanation of this.

8th. An elephant and tiger fighting.

The sculptures on the south and east sides are in good preservation; those on the west and north are more injured by the weather. The age of the first temple might perhaps be discovered from the inscriptions, if a translation of them could be obtained. I could gain no information on this head; but I suspect the building to be of higher antiquity, than the knowledge, or at least than the use of gun-powder among these people: because, among so great a variety of arms as are sculptured upon the walls, swords, bows, pikes, arrows, and shields of a round figure, the matchlock is not to be found, though a weapon so much in use among the Poligars. On enquiring of the Brâhmens the meaning of these carvings, one of them replied, "it was to show how the Gods lived above:" but indeed, they seem to have lost all traces of any knowledge they may have formerly possessed, and to be sunk into the profoundest state of ignorance.
Remarks on the principal æras and dates of the ancient Hindus.

BY MR. JOHN BENTLEY.

THE confusion and darkness that pervade and overspread the Hindu chronology, I am inclined to think, proceed from two different causes: the one, owing to the fancy of their Brāhmens and poets, in disguising and embellishing their history, with allegory and fiction; the other, to the ignorance of the modern Hindus, who not able to discern the difference between the several-æras and modes of dating, which were made use of by their ancient historians, Brāhmens, and poets, in recording past events, have blended the whole together, into one mass of absurdity and contradiction.

At this day, it is not easy to discover the meaning of all the different modes of dating, formerly in use. It appears, however, from historical facts, that they were mostly, if not all nominally the same, but essentially different in other respects:—They all went under the appellation of yugs, divine ages, Manwantaras, &c. but the yugs, divine ages, Manwantaras &c. of the astronomers were different, in point of duration, from those of the Brāhmens and poets; and those of the Brāhmens and poets were, in like manner, different from those of others: hence it becomes absolutely necessary that we know the difference between each, that is, the astronomic, the poetic, &c. &c. from each other, before we can attempt to analyze the Hindu chronology on true principles.—It is from this mode alone that we can discern truth though disguised by fiction, and untie the gordian knot, made fast by the hand of modern times,
The astronomic yugs, divine ages &c. are the only periods in which the real number of years meant, are not concealed: it may not therefore be improper, before I proceed farther, to state what these periods are, and their duration.—The Calpa is the greatest of all the astronomical periods, and the duration of it is 4320000000 years.—This period is composed or made up of the lesser yugs &c. in the following manner:

<table>
<thead>
<tr>
<th>Period</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A yugs, vizt. a Satya, a Treta, a Dwapar, and a Cali yug</td>
<td>1728000</td>
</tr>
<tr>
<td>71 Maha yugs</td>
<td>306720000</td>
</tr>
<tr>
<td>Add a Sandhi</td>
<td>1728000</td>
</tr>
<tr>
<td>A Manwantara</td>
<td>308448000</td>
</tr>
<tr>
<td>14 Manwantaras</td>
<td>4318272000</td>
</tr>
<tr>
<td>A Calpa, or grand period</td>
<td>43200000000</td>
</tr>
</tbody>
</table>

The Calpa is an anomalistic period, at the end of which the Hindu astronomers say, that the places of the planets, nodes, and apsides, will be
precisely the same as at the beginning of it; and that the commencement of it was when the sun, moon, and all the planets, nodes and apsides, were in a line of conjunction, in the beginning of aries, or 195584897 years ago: therefore six Manwantaras, twenty-three Maha yugs of the seventh Manwantara, and as far as the 220897th year of the Cali yug, of the twenty-fourth Maha yug, are now (A° 1796) expired of the Calpa. The ancient astronomers, most probably for the sake of convenience, made the present Cali yug of the Hindus, of which there are now 4897 years expired, to commence, when just the first half, or 216000 years were elapsed of the abovementioned Cali yug, of the twenty-fourth Maha yug; and we are now, only in the 4898th year of the second half of that period. I shall therefore, by way of distinction, call the present Cali yug, the "Astronomic Era."

"The Brâhmens and poets, in imitation of the astronomic periods above given, invented others for their history and poetry. These I shall distinguish by the name of "Poetic Ages," or æras, because they are embellished by fiction, and covered over with a mysterious veil.—Nominally, they appear the same as the astronomic periods, but historical facts prove them to be essentially different in point of duration; one astronomic year being equal to 1000 poetic ones: hence

A poetic Satya yug of 1728000 years is only 1728 real years,
Treta yug of 1296000 — 1296 —
Dwapar yug of 864000 — 864 —
Cali yug of 432000 — 432 —

The first of these poetic ages, or Satya yug, commenced at the creation, and the rest in succession, agreeable to the following short chronological table, continued down to the present time.
<table>
<thead>
<tr>
<th>Poetical Æras</th>
<th>Year of the World</th>
<th>Astronomic Æra</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Adam</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>130</td>
<td>Seth born</td>
<td>130</td>
</tr>
<tr>
<td>905</td>
<td></td>
<td>905</td>
</tr>
<tr>
<td>906</td>
<td></td>
<td>906</td>
</tr>
<tr>
<td>1056</td>
<td>Noah born</td>
<td>1056</td>
</tr>
<tr>
<td>1656</td>
<td>Flood</td>
<td>1656</td>
</tr>
<tr>
<td>1728</td>
<td></td>
<td>1728</td>
</tr>
<tr>
<td>1</td>
<td>Nimrod</td>
<td>1787</td>
</tr>
<tr>
<td>59</td>
<td></td>
<td>1787</td>
</tr>
<tr>
<td>177</td>
<td></td>
<td>1787</td>
</tr>
<tr>
<td>179</td>
<td></td>
<td>1787</td>
</tr>
<tr>
<td>220</td>
<td>Abraham</td>
<td>1948</td>
</tr>
<tr>
<td>278</td>
<td>Noah’s death</td>
<td>2006</td>
</tr>
<tr>
<td>316</td>
<td></td>
<td>2044</td>
</tr>
<tr>
<td>676</td>
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<tr>
<td>1025</td>
<td></td>
<td>2753</td>
</tr>
<tr>
<td>1030</td>
<td>Rama</td>
<td>2753</td>
</tr>
<tr>
<td>1097</td>
<td>Parasara</td>
<td>2825</td>
</tr>
<tr>
<td>1097</td>
<td>Yudhishthir</td>
<td>2825</td>
</tr>
<tr>
<td>1102</td>
<td>Vyasa</td>
<td>2830</td>
</tr>
<tr>
<td>1107</td>
<td>Parichit</td>
<td>2835</td>
</tr>
<tr>
<td>1158</td>
<td></td>
<td>2980</td>
</tr>
<tr>
<td>1296</td>
<td></td>
<td>3024</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2119</td>
</tr>
</tbody>
</table>

* The Cali yug commenced in February, in the 906th year of the World.*
### CHRONOLOGICAL TABLE OF ANCIENT ÆRAS, &c. Continued.

<table>
<thead>
<tr>
<th>Poetical Æras</th>
<th>Year of the World</th>
<th>Astronomic Æra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cusha</td>
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<td>2120</td>
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<tr>
<td></td>
<td>3078</td>
<td>2193</td>
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<td>2795</td>
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<tr>
<td></td>
<td>3800</td>
<td>2895</td>
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<td>3888</td>
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<td>4073</td>
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<tr>
<td></td>
<td>4505</td>
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<td></td>
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<tr>
<td></td>
<td>5520</td>
<td>4615</td>
</tr>
<tr>
<td></td>
<td>5803</td>
<td>4898</td>
</tr>
<tr>
<td>Current year</td>
<td>1483</td>
<td></td>
</tr>
<tr>
<td>Current year</td>
<td>5803</td>
<td></td>
</tr>
<tr>
<td>Current year</td>
<td>4898</td>
<td></td>
</tr>
</tbody>
</table>
In the preceding table, I have placed the beginning of the astronomic era of the Cali yug, of which 4897 years were expired in April last, in the 906th year of the world; at which time 905 years were elapsed of the Satya yug of the poets, reckoning from its commencement at the creation: hence it is self-evident, that the notions of the modern Hindus, who have confounded the fabulous or fictitious ages of their poets with the astronomic periods, merely from a similarity of names, are not only erroneous, but even quite opposite to the true intent and meaning of the ancient Hindu writers themselves; who, it may be proved, have sometimes adopted the astronomic era of the Cali yug, during the periods of the Treta and Dwapar yugs of the poets, and made use of either era, (astronomic or poetic, and sometimes both), according as it suited their fancy, for recording not only past events in general, but even one and the same event.

The first instance I shall mention by way of proof, is that of Budha, the ancient Mercury of the Hindus. The late Sir William Jones, whose name can never be mentioned but with the highest esteem, places the ancient Budha, or Mercury, who married Ila, a daughter of Noah, about the beginning of the Treta yug; contemporary with Icshwacu, the son of Noah. Now, the Hindus in general, and the Bhagavatamrita in particular, say, that "Budha became visible the 1002d year of the Cali yug" (astronomic era): let us therefore examine this matter a little, and see whether this is not the same Budha, who is recorded as living near the beginning of the Treta yug of the poets; contemporary with the son of Noah. First, the 1002d year of the Cali yug was the 1907th from the creation.—Secondly, Noah, by the Mosaic account, did not die before the 2006th year from the creation, or about 100 years after the appearance of Budha. Thirdly and lastly, there was but one Budha in the time of Noah, and he is
said to have married Ilæ, the daughter of Noah; hence we may safely infer, that the Budha, who appeared the 1002d year of the Cali yug, or 1907 of the creation, was the very same that married Noah's daughter, and is recorded as living near the beginning of the Treta yug of the poets. Here we may plainly see, that the event as well as the time perfectly coincides; for, the 1002d year of the Cali yug corresponds, not only with the latter days of Noah, but also with the 179th year of the Treta yug of the poets, as may be seen from the preceding table.

I shall now mention another instance, which, while it confirms what I have above said, respecting the ancient Hindu writers or historians, adopting the astronomic era of the Cali yug, at different times during the periods of the Treta and Dwapar yugs of the poets, will, at the same time, explain the cause of all the confusion and absurdities which at present appear in the ancient history and chronology of the Hindus.

Valmic and Vyasa, were two ancient contemporary bards, whom the modern Hindus, separate by no less a period than 864000 years; believing Valmic to have lived near the close of the Treta yug, and Vyasa near the close of the Dwapar yug; and though they cannot but admit, that the two bards had frequently conversed together on the subject of their poems, yet they will rather account for it by supposing a miracle, than assign any real or probable cause for an absurdity, so contradictory not only to nature, but to common sense.

Vyasa was the son of Parasar, an ancient astronomer; and Parasar was the grandson of Vasishtha, who was also an astronomer, and Pt. boita or family priest, to Rama, king of Audhya or Oud, who reigned,
according to the Hindu accounts, near the close of the Treta yug of the poets. Parasara, the father of Vyasa, was therefore only about one or two generations after Rama. But from the observed places of the equinoxes and solstices in the year 3600 of the present Cali yug, by one Varaha, an astronomer, and their places as mentioned by Parasara, it would appear, that the observations of the latter must have been about 1680 years before Varaha; which will therefore place Parasara about the year 2825 of the world, corresponding to the 1097th of the Treta yug of the poets; and as Parasara may have been then, between thirty and forty years old, we may place Rama about the year 1030, and Valmic and Vyasa about the year 1102 of the Treta yug of the poets, being the 2830th of the creation. These years may not be the exact times in which they respectively lived; but I believe they do not vary from the truth above forty or fifty years either way, and nearer than this we cannot well expect to bring them.

By having thus obtained the respective times or years in which Rama, Parasara, Vyasa, and Valmic lived, we have ascertained a point of the utmost importance to the chronology of the Hindus.

The war of Mahabarat took place in the time of Vyasa; in consequence of which he wrote his epic poem, called the Mahabarat, and on the composition of which, he consulted Valmic. Vyasa was therefore contemporary with Crishna, Arjun, Abhimanyu, Yudhishthir, Paricsshit and others engaged in that famous war.

Shortly after that war, and towards the close of the reign of Paricsshit, the Hindu historians of that part of India where Paricsshit reigned,
began to lay aside the poetic æras altogether, and to adopt the astronomic æra of the *Cali yug*, of which near 2000 years were then expired.

This circumstance of laying aside the poetic æras, and adopting the astronomic, it seems, in the course of ten or twelve centuries after, became either totally forgotten, or misunderstood: so much so in fact, that the very adoption of the astronomic æra has been taken, by the modern *Hindus*, for the actual beginning of the *Cali yug* itself. This erroneous notion, together with those which they entertain respecting the duration of the different ages, the *Satya, Treta, and Dvapar yugs* of their poets, which they firmly believe to be the same with the astronomic periods of the same name, and to have ended accordingly before the present *Cali yug* commenced, has been the cause of all the confusion which appear in their ancient history and chronology. For, finding the immediate successor of *Paricshit* mentioned in ancient history as reigning in the *Cali yug*, they concluded, though erroneously, that *Paricshit* must therefore have reigned at the close of the *Dvapar yug*; and from this circumstance, having removed *Paricshit* from the close of the *Treta yug* down to the close of the *Dvapar yug*, they were then obliged to place *Yudhishthir, Arjun, Crishna, Abhimanyu* and *Vyasa*, at the close of the *Dvapar yug* also: by which means they separated *Vyasa* from *Valmic*, his contemporary and friend; and the rest who were engaged in the war of *Bharat* from their proper places in history, by 864000 years of the poets.

It is owing to the same erroneous notions respecting the *Cali yug*, that the modern *Hindus* have thrown the ancient history and chronology of the kings of *Magadh* or *Babar* into confusion. For, having discovered that *Sahadeva*, the son of *Jara Sandha*, was contemporary with *Yudhishthir*,
they concluded, that as they had already placed Yudhishthir at the close of the Dwapar yug, Sahadeva must be at the beginning of the Cali yug; and therefore, without further ceremony, not only removed Sahadeva, but his nineteen successors, who formed a dynasty in the family of Jarasandha, from their proper period in history (between the years 1920 and 2193 of the Cali yug), and placed them immediately before Pradyota, who began his reign in the 1000th year of the Cali yug. This removal was productive of two absurdities at once, both of which are particularly noticed by the late Sir William Jones, in his chronology of the kings of Magadha. The one, that in consequence of placing the names before Pradyota, they were obliged to assert, that the twenty princes reigned one thousand years, that is, from the beginning of the Cali yug, in the year 906 of the creation, down to the 1905th; so that they must have then reigned, as well during the flood, as before and after it. The other, that as a chasm had been formed in that part of the history from which the twenty reigns were removed, in order to make up that chasm as well as they could, they were obliged to assert, that a dynasty of four princes of the Canna race, the first of whom (Vasudeva) came to the throne in the year of the world 2753, or 1848 of the Cali yug, reigned no less than 345 years.

Now as Yudhishthir was the uncle and immediate predecessor of Parichsit, and consequently contemporary with Parasara, the father of Vyasa; it is clear, that both Yudhishthir and Sahadeva must have reigned about the year 2825 of the world; which is about seventy-two years after the reign of the above Vasudeva of the Canna race, and corresponding precisely with the chasm.

Innumerable other instances of the absurdities of the modern Hindus
might be produced, but these I have mentioned and explained, I think, are sufficient. I shall therefore conclude the subject of the poetic æras with the following table, shewing the moon's age and month, with the day of the week on which the Satya, Treta, Dwapar, and Cali yugs of the poets respectively commenced; which will prove beyond a possibility of doubt, that they have no connection whatever, with the astronomical yugs of the same name, belonging to the system of Maya, explained at the beginning of this essay: for in the latter, all the yugs, Manwantaras, &c. belonging to the system begin invariably, on the first day of Bysakk, the moment the sun enters Aries in the Hindu sphere.

<table>
<thead>
<tr>
<th>Poetic Æras.</th>
<th>Day of the week.</th>
<th>Moon's age and Month.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satya yug</td>
<td>Sunday</td>
<td>3d tithee of the moon of Bysakk,</td>
</tr>
<tr>
<td>Treta do.</td>
<td>Monday</td>
<td>9th do. of do. Cartic,</td>
</tr>
<tr>
<td>Dwapar do.</td>
<td>Thursday</td>
<td>28th do. of do. Bhadra,</td>
</tr>
<tr>
<td>Cali do.</td>
<td>Tuesday</td>
<td>15th do. of do. Magb.</td>
</tr>
</tbody>
</table>

Note. The lunar month takes its name from the solar month in which the new moon happens to fall.—30 tithees make a lunation.

With respect to the days of the week mentioned in the preceding table, some of the Hindu accounts differ. The moon's age and month are extracted from the Brohmo Puran, which agrees with the Hindu calendar, wherein the commencement of each yug is also recorded.

The following table, of the dates of the ten avatars or incarnations of the deity, which took place in the above mentioned yugs, is extracted from
an augum or tontor called "Cubhateegubho," supposed to have been written by Seeb or Seeva, a Hindu deity.

**TABLE OF THE AVATARS.**

<table>
<thead>
<tr>
<th>Avatars</th>
<th>Week Day</th>
<th>Moon's age and month</th>
<th>Nakshatra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motchyo</td>
<td>Monday</td>
<td>1 tithe Chitro</td>
<td>Revati</td>
</tr>
<tr>
<td>Kurmo</td>
<td>Wednesday</td>
<td>2 Joif'bo</td>
<td>Rohini</td>
</tr>
<tr>
<td>Boraho</td>
<td>Sunday</td>
<td>7 Magbo</td>
<td>Aswinii</td>
</tr>
<tr>
<td>Nreesingho</td>
<td>Saturday</td>
<td>14 Byfakbo</td>
<td>Swati</td>
</tr>
<tr>
<td>Bamono</td>
<td>Friday</td>
<td>12 Bhadro</td>
<td>Sravanana</td>
</tr>
<tr>
<td>Porosuramo</td>
<td>Saturday</td>
<td>3 Byfakbo</td>
<td>Robini</td>
</tr>
<tr>
<td>Ramo</td>
<td>Monday</td>
<td>9 Chitro</td>
<td>Panaryobasee</td>
</tr>
<tr>
<td>Kreesno</td>
<td>Wednesday</td>
<td>23 Bhadro</td>
<td>Robini</td>
</tr>
<tr>
<td>Boodho</td>
<td>Sunday</td>
<td>10 Asaro</td>
<td>Byfakha</td>
</tr>
<tr>
<td>Kolkee</td>
<td>Saturday</td>
<td>2 Agraban</td>
<td>Purvashira</td>
</tr>
</tbody>
</table>

**THE 1st, 2d, 3d, and 4th Avatars are supposed to have happened during the period of the Satya yug; the 5th, 6th, and 7th, in the Treta yug; the 8th and 9th, in the Dwapar yug; and the 10th or last, in the Cali yug of the poets, long since past.**

**Having thus finished what I had to say respecting the poetic æras, and the absurdities introduced into the history and chronology of the Hindus by confounding them with the astronomic system of Meya, I shall now proceed to a third system, wherein the Manwantaras appear to have been but of short duration, and to depend on the revolutions of either Jupiter or Saturn. This system, like that of the poetic æras, has been always**
confounded with that of Mey's, and consequently the cause of much confusion in the records of ancient times. To distinguish it from Mey's, I shall call it the puranic system, and by way of introduction, give the following table of the dates &c. of the fourteen Puranic Manwantaras, as contained in a Hindu book entitled the Utsara Chanda, from which Captain Francis Wilford was so obliging as to favor me with an extract.

**TABLE of the Puranic Manwantaras.**

<table>
<thead>
<tr>
<th>Manvantara</th>
<th>Day of the Week</th>
<th>Moon's Age &amp; Month</th>
<th>Nakshatra</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Began on Sunday</td>
<td>9th Titthhee of Aswin</td>
<td>Sravana,</td>
</tr>
<tr>
<td>2</td>
<td>Thursday</td>
<td>12</td>
<td>Uta. Bhadropada,</td>
</tr>
<tr>
<td>3</td>
<td>Monday</td>
<td>3</td>
<td>Critica,</td>
</tr>
<tr>
<td>4</td>
<td>Friday</td>
<td>3</td>
<td>Hasta,</td>
</tr>
<tr>
<td>5</td>
<td>Tuesday</td>
<td>30</td>
<td>Solobisi,</td>
</tr>
<tr>
<td>6</td>
<td>Saturday</td>
<td>11</td>
<td>Robini,</td>
</tr>
<tr>
<td>7</td>
<td>Friday</td>
<td>10</td>
<td>Swati,</td>
</tr>
<tr>
<td>8</td>
<td>Tuesday</td>
<td>7</td>
<td>* Onurada,</td>
</tr>
<tr>
<td>9</td>
<td>Sunday</td>
<td>23</td>
<td>Robini,</td>
</tr>
<tr>
<td>10</td>
<td>Friday</td>
<td>15</td>
<td>Uttara Sura,</td>
</tr>
<tr>
<td>11</td>
<td>Monday</td>
<td>15</td>
<td>Critica,</td>
</tr>
<tr>
<td>12</td>
<td>Thursday</td>
<td>15</td>
<td>Uttara Phalguni,</td>
</tr>
<tr>
<td>13</td>
<td>Wednesday</td>
<td>15</td>
<td>Chitra,</td>
</tr>
<tr>
<td>14</td>
<td>Wednesday</td>
<td>15</td>
<td>Jeysa.</td>
</tr>
</tbody>
</table>

* Onurada appears incorrect, as the moon of Magh must be 20 or 21 days old before it enters Onurada Nakshatra.
The order in which the above Manwantaras followed each other is not now known, but I have given them in the order in which they were written, in the memorial śoka or verse. However, as the first Manwantara commenced just when fifty years of Brahma's life (that is one half of the grand cycle of this system) were expired, it is easy to perceive, that the 13th on the list, must have been the first Manwantara; and I suspect that the 10th was the second, the 11th the third, the 12th the fourth, and the 14th the fifth Manwantaras all of which appear to have been computed according to mean motions only; the other nine having the appearance of being computed according to the true place of the planet, on which the regulation of the periods depended.

In this system which appears to have been in use before the time of Veya, four yugs, viz. a Satya, Treta, Dwapar, and Cali yug, formed a Maha yug; seventy-one Maha yugs with a Sandhi, equal to a Satya yug, formed a Manwantara; and fourteen of such Manwantaras with a Sandhi, equal to a Satya yug, or 1000 Maha yugs, formed a Calpa, or day of Brahma, and his night was of the same length; 360 of such days and nights formed one of his years; and 100 of such years the period of his life, or the grand Puranic cycle, in which all the planets with the nodes and apsides of their respective orbits were supposed to return to a line of conjunction in the beginning of aries, the point they set out from at the commencement of the cycle.

From the apparent shortness of the Puranic Manwantaras, (which probably did not exceed 3 or 400 years at most,) and consequently of the Calpa, the cycle or term of Brahma's life above-mentioned appears to have been absolutely necessary in this system, to render it applicable to the pur-
poses of astronomy. But in the system of Meva now in use, that cycle is
totally unnecessary, nor does it in fact belong to it, as the Calpa alone in the
latter, contains all the lesser cycles of the revolutions of the planets, nodes,
&c. within the period of its duration.

Meva, the supposed author of the Surya Sidhanta, lived in the Satya yug,
of the 28th Maha yug, of the 7th Manwantara, of the fifty-first year of
Brahma's life, and probably finding the Puranic system either inconvenient,
or not sufficiently correct, he invented the present one on a much larger
scale, extending the duration of a Manwantara to 308448000 years; and
simplified the system by making the yugs, &c. to depend on solar motion
alone; by which means, all the periods in his system begin invariably on the
first day of Byusk, the moment the Sun enters Aries in the Hindu sphere;
which circumstance alone, must form a most striking difference between it
and the Puranic system.

In the Surya Sidhanta, Meva has stated the obliquity of the ecliptic in
his time at 24°; from whence, Mr. S. Davis, a gentleman to whom the
public is under very considerable obligations, for his valuable paper on the
astronomical computations of the Hindus, published in the Asiatick Researches,
computed, that supposing the obliquity of the ecliptic to have been accu-
rrately observed by the ancient Hindus as twenty-four degrees, and that its
decrease had been from that time half a second a year, the age or date of
the Surya Sidhanta (in 1789), would be 3840 years; therefore Meva must
have lived about the year 1956 of the creation.

The Hindu books place Porosu Ram, one of the incarnate divinities, in
the 8th Manwantara of the Puranic system; and so they do Vyasa, and Oso-

Ss
Thamo, the son of Dron, mentioned in the Mahabharat; and since the time of Vyasa, the remaining six Manwantaras have expired, as will appear from the following table of all the patriarchs or Munnoos, &c. from the time of Swoyomboobo or Adam, who lived in the first Manwantara, down to the end of the fourteenth, which I have extracted from the Sreebhagobot; and from which some rational idea may be formed, respecting the duration of the Puranic Manwantaras, now generally confounded with the periods of the same name belonging to Myea’s system, in which we are now no further advanced than to the 7th Manwantara, and which was the same when he wrote, long before the time of Vyasa.

Table of the Patriarchs or Munnoos and others, during the Fourteen Puranic Manwantaras.

1st MANWANTARA.

Swoyomboobo, or Adam. Munoo.
Sotoroopa, his wife.
Preeyobroto, his son.
Uttanpado, his second son.
Akootee, Swoyomboobo’s 1st daughter.
Debootee, ditto 2d ditto.
Prosootee, ditto 3d ditto.

Roochee, the husband of Akootee.
Kordom, do. of Debootee.
Doksoprosopotee, do. of Prosootee.
Tooseeto.
Moreechee.
Meesro.
Yocho.

2d MANWANTARA.

Swarocheeso, Munoo.
Raja Dyumot, his son.
Raja Suseno, ditto.
Raja Rocheesmot, ditto.

Tooseeto.
Ujostombo.
Rochono, and others.
3d MANWANTARA.
Utomo, \textit{Munoo}.
Pobono, his son.
Srinjoyo, ditto.
Joçotro, ditto.
Sotyo.

Bedosuto.
Bhodro.
Promodo.
Sotyojeet, and many others.

4th MANWANTARA.
Tamoso, \textit{Munoo}.
Breesokhyatee, his son.
Norohketu, ditto.
Sotyokahoroyo, ditto.

Beero.
Bedhreetoyo.
Joteerdhama.
Treeseekhoiswoyo, and many others.

5th MANWANTARA.
Riboto, \textit{Munoo}.
Bolee, his son.
Beendho, ditto.
Bhooteroyo, ditto.

Heronyoroma.
Bedhoseera.
Urdhobahoo.
Beebhoo, and many others.

6th MANWANTARA.
Chaksooso, \textit{Munoo}.
Purrus, his son.
Purruso, ditto.
Sudyumno, ditto.
Prodyumno, ditto.

Apyo.
Horyosmot.
Dweeroko.
Montrodrumo, and many others.

7th MANWANTARA.
Vaivoswata, or Noah, \textit{Munoo}.
Ichwaku, his 1st son.
Nreego, 2d ditto.
Dresso, 3d ditto.
Soryati, 4th ditto.
Norisyanto, 5th ditto

Preesodhro, his 6th son.
Norhogo, 7th ditto.
Kobee, 8th ditto.
Deesto, 9th ditto.
Baruno, 10th ditto.
Adityo,
7th MANWANTARA (continued).

Bosu, Rudro, Biswedebo, Morudongo, Osnikumar, Ribhobo, Kosyapo, Otri, Bosisto, Biswamitro, Goutomo, Jomodocnee, Bhorodwajo, Purondoro, and many others.

8th MANWANTARA.

Saborni, Munoo, Neermoko, his son, Beerojoso, ditto, Sutopa, Beeroja, Omretofrobho, Gabolo, Porosu Ram, Dipliman, Osotthamo, son of Dron, Kreepo, Reesyosringo, Vyasa, or Byasa.

9th MANWANTARA.

Doksosaborni, Munoo, Bootoketu, his son, Diptiketu, ditto, Drrestoketu, ditto, Morichi, Ghorbo, Paro, Dyutimot, Srutho, and many others.

10th MANWANTARA:

Bromosaborni, Munoo, Bhurisen, his son, Surasono, Birudho, Hobisman, Sukreeto, Sotyo, Joyo, Murti, Sombho, and many others.
11th MANWANTARA.

Dhormosabornee. Munoo.
Sotyo Dhormo, his son.
Bihonggomo.
Kamogomo.

Neerbano.
Roocheez.
Oruno.
Bidreeto, and many others.

12th MANWANTARA.

Rudrosabornee. Munoo.
Deboban, his son.
Upodebo, do.
Debosreesto, do.
Horito.

Topomurti.
Toposee.
Ogneedroko.
Gondhodhama, and many others.

13th MANWANTARA.

Debosabornee. Munoo.
Chitroseko, his son.
Bichitro, do.
Sukormee.

Sutramo.
Neermoko.
Dibospotee, and many others.

14th MANWANTARA.

Eendrosabornee. Munoo.
Urunggo, his son.
Bhuru, do.
Bodhno, do.
Poseeetro.
Chaksooso.

Ogne.
Bahoo.
Soochee.
Sudho.
Magodho, and many others.

Note. Several names in the foregoing table had the title of Devtas, Reesbeets, &c. annexed to them, probably by way of distinction or pre-eminence.

Utomo, Tamoso, and Riboto, the third, fourth, and fifth Munoo, were the grandsons of Swoyombhooobo or Adam; Doko Sabornee
the 9th Munoo, was the son of Baruno or Varuno, the tenth son of Vaivoswata; therefore it is easy to perceive, that the Puranic Manwan-
tara, which was considered in ancient times as the duration of the life of a Munoo or patriarch, could not be very long, and ought not to be confounded with the Manwanaras of the present system of Meya, consisting of 308448000 years each.

**A CHRONOLOGICAL TABLE**

of the solar and lunar line of princes, who are said to have reigned in the cities of Ayodhya or Audh (now Oud), and Pralishthana or Vitora, otherwise Hastinapoor (now Delhi) respectively, from about the beginning of the Treta yug of the poets, or 1002d year of the astronomic Cali yug down to the time the solar line of princes became extinct: when the country is supposed to have been conquered by some foreign power, probably Alexander.

<table>
<thead>
<tr>
<th>Poetic Ages</th>
<th>Solar Line</th>
<th>Year of the World</th>
<th>Lunar Line</th>
<th>Astronomical Era, Cali yug</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treta Yug or Silver Age.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>179</td>
<td>Icshwacu</td>
<td>1907</td>
<td>Budha</td>
<td>1002</td>
</tr>
<tr>
<td></td>
<td>Vicucshi</td>
<td></td>
<td>Pururavas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cucutsa</td>
<td></td>
<td>Ayush</td>
<td></td>
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<tr>
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<td>Anenas</td>
<td></td>
<td>Nahusha</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prithu</td>
<td>5</td>
<td>Yayati</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Viswagandhi</td>
<td></td>
<td>Puru</td>
<td></td>
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<tr>
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<td>Chandra</td>
<td></td>
<td>Janamejaya</td>
<td></td>
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<td></td>
<td>Yuvanaswa</td>
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<td>Srava</td>
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<tr>
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<td>Vrihadhaswa</td>
<td>10</td>
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<tr>
<td></td>
<td>Dhundhumara</td>
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<tr>
<td></td>
<td>Dridhaswa</td>
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</tr>
<tr>
<td>Heryaswa</td>
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<td>Yuvanaswa</td>
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<td>Mandhatri</td>
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<td>Trasadasyu</td>
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<td>20</td>
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<td>Prachinawat</td>
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<td>Anaranya</td>
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<td>Satyavrata</td>
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<td>Bahugava</td>
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</tr>
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<td>30</td>
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<td>Rantinaya</td>
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<td>Aiti</td>
</tr>
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<td>Bharuca</td>
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<tr>
<td>Vrica</td>
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<td>Vitatha</td>
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In the preceding table, I have placed Yudhishtir in the year 2825 of the World, corresponding to the 1097th of the Trityayug of the poets, and to the 1920th of the astronomical Cali yug: that this is about the period in which Yudhishtir reigned, I have not myself the smallest doubt, not only because he must have been contemporary with Parasara, the father of Vyasa.
but also on account of the exact coincidence of that period with the chain in the chronology of the kings of Magadha, which appears sufficiently evident to have been occasioned by the removal of the dynasty of Sahadeva, who was contemporary with Yudhishthir, from that period of history.

From the probabilities of the duration of life deduced from observations on bills of mortality it appears, that the mean duration of human life, taking one man with another, does not exceed thirty-two or thirty-three years. Admitting however, the mean duration of life to be thirty-three years; of this we cannot allow more than half, or seventeen years at the utmost, to each reign, in a long succession of princes. Therefore, as Icshwacu, the son of Noah, began his reign near the beginning of the Treta yug, or in the year 179 of that period, if we divide the remaining years 1117 in the Treta yug by 17, we shall have about sixty-six reigns from Icshwacu's time down to the end of the Treta yug; and this number of reigns is confirmed by the place of Yudhishthir in the table, being the fifty-seven reign, and at the same time about 200 years before the end of the Treta yug: so that in all probability, it would require at least nine or ten reigns more, from his time down to the end of that period. After the same manner, the number of computed reigns for the whole of the Dwipar yug or 864 years, would be fifty-one: which, with the former number, make all together 117 computed reigns; and of this number, we find no more than 114 in the solar line of princes, and still considerably less in the lunar line.

In consequence of the ancient historians adopting the astronomic era of the Cali yug, at the close of Paricshit's reign, as already noticed, Yudhishthir and Paricshit, in the lunar line, with Vrihadabala and Vrihadrana, their contemporaries in the solar line, were removed (with
others) by the modern commentators, from the close of the Treta yug down to the close of the Dwapar yug of the poets; therefore Rama was supposed to have been the last prince of the solar line, who reigned in Oud at the close of the Treta yug; and as they had placed the immediate successors of Paricshit, at the beginning of the Cali yug, so, in like manner, the immediate successors of Vrihadraja may be supposed to have been placed at the beginning of the Cali yug also; hence the mode of correction required becomes obvious.

I have therefore restored Vrihadbala and Vrihadraja, to their proper places in the Treta yug, as contemporaries with Yudhishthir and Paricshit; and the remaining names down to the end of that period, marked with a *, were their successors, as placed in the Cali yug.

The other names marked with a *, are the remaining princes mentioned in Sir William Jones's chronology, as reigning in the Cali yug; all of whom, however, if they reigned at all, must have reigned before the end of the Dwapar yug of the poets; and their being mentioned by ancient historians as reigning in the Cali yug does not at all imply, that they reigned after the Dwapar yug, but only in the astronomical Cali yug, which commenced the 966th year of the Satya yug of the poets, and has been unfortunately confounded (by the modern Hindu commentators,) with their Cali yug; with which however it has no relation except in name: or to speak more correctly, they have confounded the fictitious ages of their poets, with the real astronomical periods.

With respect to the chasm in the lunar line of princes after Jananujaya, the names that are missing must either have been lost, or else, which
is more probable, mentioned by the ancient historians, as reigning in the Cali yug of the astronomical era; and as Jananujaya is the first prince mentioned as reigning in the Cali yug, in the lunar line, it is very probable, he may be the same person recorded as reigning in the Treta yug, and if that should be the case, the eleven names that follow next to him, most likely will be those that should fill the chasm.

At what particular period of time, the solar line of princes became extinct, it is not easy to ascertain; by the table, it would appear, that it must have been about fifty years before the year 3883 of the World; but as I allowed seventeen years to each reign, which is rather too much in a long succession of eldest sons, it is probable it must have ended about 100 years at least, earlier than given by the table; which will place the end of the last prince’s reign, about the year 3738 of the World.

Alexander the Great paid his visit to India about 200 years before the year 3888 of the World, or end of the Dwapar yug: but whether he was the cause of the solar line of princes, becoming about that time extinct, or whether Prasenajit, (the last prince but two mentioned in the table, and whose name might be pronounced, or corrupted into Porasnakit, Porusnakit, or even Porus itself, leaving out the termination Najit,) was the prince named Porus, whom Alexander conquered and took prisoner, I will leave to others to decide.

A CHRONOLOGICAL TABLE

of the kings of Magadha or Bebar, from the reign of Pradyota, in the year 1095 of the World, down to that of Chandrabija in the year 3554, containing a period of 1649 years.
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<td>3554</td>
<td>Vijaya</td>
<td></td>
</tr>
<tr>
<td>Vatamana</td>
<td></td>
<td>Chandrabiya</td>
<td>2649</td>
</tr>
<tr>
<td>Talaca</td>
<td></td>
<td></td>
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</tbody>
</table>

The names with an * set before them, are those whom I mentioned in the foregoing remarks, to have been erroneously placed by the modern Hindus before Pradyota: for, Sahadeva, the first of the dynasty, was contemporary with Yudhishthir, who reigned about the year 2835 of the World. I have therefore restored them again to their proper places in History, and by that means corrected the two absurdities pointed out by the late Sir William Jones, in the Hindu chronology of the kings of Magadha or Bebar.

Calcutta, 2d October, 1796.
<table>
<thead>
<tr>
<th>Area</th>
<th>Year</th>
<th>Time</th>
<th>Team</th>
<th>Distance</th>
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<tr>
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<td>1914</td>
<td>2020</td>
<td>India</td>
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</tr>
<tr>
<td>Africa</td>
<td>1920</td>
<td>2025</td>
<td>Ethiopia</td>
<td>5000 km</td>
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<tr>
<td>Europe</td>
<td>1925</td>
<td>2030</td>
<td>Russia</td>
<td>8000 km</td>
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</table>

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The table above shows the progression of colonizing teams, their distance traveled, and the time it took to reach these areas. The table is organized to show the order of colonization and the distance each team covered in various regions.
XXII.

On the religious ceremonies of the Hindus, and of the Brâhmens especially.—By H. T. Colebrooke, Esq.,

ESSAY I.

The civil law of the Hindus containing frequent allusions to their religious rites, I was led, among other pursuits connected with a late undertaking, to peruse several treatises on this subject, and translate from the Sanscrit some entire tracts and parts of others. From these sources of information upon a subject, on which the Hindus are by no means communicative, I intend to lay before the society, in this and subsequent essays, an abridged explanation of the ceremonies, and verbal translations of the prayers used at rites, which a Hindu is bound constantly to perform. In other branches of this inquiry, the society may expect valuable communications from our colleague Mr. W. C. Blaquiere, who is engaged in similar researches. That part of the subject, to which I have confined my inquiries, will be also found to contain curious matter, which I shall now set forth without comment, reserving for a subsequent essay the observations, which are suggested by a review of these religious practices.

A Brâhma, arising from sleep, is enjoined, under the penalty of losing the benefit of all rites performed by him, to rub his teeth with a proper with or a twig of the racemiferous fig tree, pronouncing to himself this prayer, 'Attend, lord of the forest; So'ma, king of herbs and plants,' has
approached thee: mayest thou and he cleanse my mouth with glory and
good auspices, that I may eat abundant food.' The following prayer is
also used upon this occasion: 'Lord of the forest! grant me life, strength,
glory, splendour, offspring, cattle, abundant wealth, virtue, knowledge and
intelligence.' But if a proper withe cannot be found, or on certain days,
when the use of it is forbidden (that is, on the day of the conjunction,
and on the first, sixth and ninth days of each lunar fortnight), he must rinse
his mouth twelve times with water.

Having carefully thrown away the twig, which has been used, in a place
free from impurities, he should proceed to bathe, standing in a river or in
other water. The duty of bathing in the morning and at noon, if the man
be a householder, and in the evening also, if he belong to an order of devo-
tion, is inculcated by pronouncing the strict observance of it no less effic-
cacious, than a rigid penance, in expiating sins, especially the early bath in
the months of Māgha, Phālguna and Čārtica: and the bath being particu-
larly enjoined as a salutary ablution, he is permitted to bathe in his own
house, but without prayers, if the weather, or his own infirmities, prevent
his going forth; or he may abridge the ceremonies and use fewer prayers,
if a religious duty or urgent business require his early attendance. The reg-
ular bath consists of ablutions followed by worship and by the inaudible
recitation of the Gāyatrī with the names of the worlds. First sprinkling water,
and sprinkling some before him, the priest recites the three subjoined pray-
ers, while he performs an ablution by throwing water eight times on his
head or towards the sky, and concludes it by casting water on the ground
to destroy the demons, who wage war with the gods. 'O waters! since ye afford delight, grant us present happiness and the rapturous sight
of the supreme God. 2d. Like tender mothers, make us here partakers
"of your most auspicious essence. 3d. We become contented with your essence, with which ye satisfy the universe. Waters! grant it unto us." (or, as otherwise expounded, the third text may signify, 'Eagerly do we approach your essence, which supports the universal abode. Waters! grant it unto us.') In the Agni purāṇa, the ablution is otherwise directed: "At twilight, let a man attentively recite the prayers addressed to water, and perform an ablution by throwing water on the crown of his head, on the earth, towards the sky, again towards the sky, on the earth, on the crown of his head, on the earth, again on the crown of his head, and lastly on the earth." Immediately after this ablution, he should sip water without swallowing it, silently praying in these words, "Lord of sacrifice! thy heart is in the midst of the waters of the ocean, may salutary herbs and waters pervade thee. With sacrificial hymns and humble salutation, we invite thy presence; may this ablution be efficacious." Or he may sip water while he utters inaudibly the mysterious names of the seven worlds. Thrice plunging into water, he must each time repeat the expiatory text, which recites the creation; and having thus completed his ablution, he puts on his mantle after washing it, and sits down to worship the rising sun.

This ceremony is begun by his tying the lock of hair on the crown of his head, while he recites the Gāyatrī, holding much cuba grass in his left, and three blades of the same grass in his right hand, or wearing a ring of grass on the third finger of the same hand. Thrice sipping water with the same text preceded by the mysterious names of worlds, and each time rubbing his hands as if washing them, and finally touching with his wet hand his feet, head, breast, eyes, ears, nose and navel or his breast, navel and both shoulders only (according to another rule), he should again sip water three times pronouncing to himself the expiatory text which recites the
If he happen to sneeze or spit, he must not immediately sip water, but first touch his right ear in compliance with the maxim, "after sneezing, spitting, blowing his nose, sleeping, putting on apparel, or dropping tears, a man should not immediately sip water, but first touch his right ear." Fire" says Parášára, "water, the Védas, the sun, moon and air, all reside in the right ears of Bráhmanas: Gangá is in their right ears, sacrificial fire in their nostrils, at the moment, when both are touched, impurity vanishes." This, by the by, will explain the practice of suspending the end of the sacrificial string over the right ear, to purify that string from the defilement which follows an evacuation of urine. The sipping of water is a requisite introduction of all rites; without it, says the Samba purána, all acts of religion are vain. Having therefore sipped water as abovementioned, and passed his hand filled with water briskly round his neck, while he recites this prayer, "May the waters preserve me." The priest closes his eyes and meditates in silence, figuring to himself, that "Brahma" with four faces and a red complexion resides in his navel; Vishnu with four arms and a black complexion, in his heart; and Siva with five faces and a white complexion, in his forehead." The priest afterwards meditates the holiest of texts during three suppressions of breath. Closing the left nostril with the two longest fingers of his right hand, he draws his breath through the right nostril, and then closing that nostril likewise with his thumb, holds his breath while he meditates the text: he then raises both fingers off the left nostril and emits the breath he had suppressed. While he holds his breath, he must on this occasion repeat to himself, the Gáyatrí with the mysterious names of the worlds, the triliteral monosyllable, and the sacred text of Brahme. A suppression of breath, so explained by the ancient legislator, Ya'jnyawalcyya, consequently implies the following meditation, "O'm ! Earth ! Sky ! Heaven! Middle region ! Place of births ! Mansion of the blessed ! Abode of truth !
We meditate on the adorable light of the resplendent generator, which goes from our intellects; which is water, lustre, favour, immortal faculty of thought, Brahme, earth, sky, and heaven." According to the commentary, of which a copious extract shall be subjoined, the text, thus recited, signifies: "That effulgent power, which governs our intellects, is the primitive element of water, the lustre of gems and other glittering substances, the favour of trees and herbs, the thinking soul of living beings; it is the creator, preserver and destroyer, the sun and every other deity, and all which moves, or which is fixed, in the three worlds named earth, sky and heaven. The supreme Brahme, so manifested, illuminates the seven worlds; may he unite my soul to his own radiance (that is, to his own soul, which resides effulgent in the seventh world, or mansion of truth)."

On another occasion, the concluding prayer, which is the Gâyatr of Brahme, is omitted, and the names of the three lower worlds only are prefixed: thus recited, the Gâyatr, properly so called, bears the following import, "On that effulgent power, which is Brahme himself, and is called the light of the radiant sun, do I meditate, governed by the mysterious light, which resides within me for the purpose of thought; that very light is the earth, the subtile ether, and all which exists within the created sphere; it is the threesfold world containing all which is fixed or moveable, it exists internally in my heart, externally in the orb of the sun; being one and the same with that effulgent power, I myself am an irradiated manifestation of the supreme Brahme." With such reflections, says the commentator, should the text be inaudibly recited.

These expositions are justified by a very ample commentary, in which numerous authorities are cited; and to which the commentator has added many passages from ancient lawyers and from mythological poems, show-
ing the efficacy of these prayers in expiating sin: as the foregoing explanations of the text are founded chiefly on the gloss of an ancient philosopher and legislator Yajñavalkya, the following extract will consist of little more than a verbal translation of his metrical gloss.

'The parent of all beings produced all states of existence, for he generates and preserves all creatures; therefore is he called the generator. Because he shines and sports, because he loves and irradiates, therefore is he called resplendent or divine, and is praised by all deities. We meditate on the light, which, existing in our minds, continually governs our intellects in the pursuits of virtue, wealth, love and beatitude. Because the being, who shines with seven rays, assuming the forms of time, and of fire, matures productions, is resplendent, illumines all, and finally destroys the universe, therefore he, who naturally shines with seven rays, is called light or the effulgent power: the first syllable denotes, that he illumines worlds; the second consonant implies, that he colours all creatures; the last syllable signifies, that he moves without ceasing: from his cherishing all, he is called the irradiating preserver.'

Although it appears from the terms of the text ("light of the generator or sun"), that the sun and the light spoken of are distinct, yet in meditating this sublime text they are undistinguished; that light is the sun, and the sun is light; they are identical. 'The same effulgent and irradiating power, which animates living beings as their soul, exists in the sky as the male being residing in the midst of the sun.' There is consequently no distinction; but that effulgence, which exists in the heart, governing the intellects of animals, must alone be meditated, as one and the same, however, with the luminous power residing in the orb of the sun.
AND OF THE BRAHMENS ESPECIALLY.

That, which is in the sun, and thus called light or effulgent power, is adorable and must be worshipped by them, who dread successive births and deaths, and who eagerly desire beatitude. The being, who may be seen in the solar orb, must be contemplated by the understanding, to obtain exemption from successive births and deaths and various pain.

The prayer is preceded by the names of the seven worlds as epithets of it, to denote its efficacy; signifying, that this light pervades and illumines the seven worlds, which, situated one above the other, are the seven mansions of all beings; they are called the seven abodes, self-existent in a former period, renovated in this: these seven mysterious words are celebrated as the names of the seven worlds. The place, where all beings, whether fixed or moveable, exist, is called earth, which is the first world. That, in which beings exist a second time, but without sensation, again to become sensible at the close of the period appointed for the duration of the present universe, is the world of re-existence. The abode of the good, where cold, heat and light are perpetually produced, is named heaven. The intermediate region, between the upper and lower worlds, is denominated the middle world. The heaven, where animals, destroyed in a general conflagration at the close of the appointed period, are born again, is thence called the world of births. That, in which SANACA and other sons of BRAHMA', justified by austere devotion, reside exempt from all dominion, is thence named the mansion of the blessed. Truth, the seventh world, and the abode of BRAHME, is placed on the summit above other worlds; it is attained by true knowledge, by the regular discharge of duties, and by veracity: once attained, it is never lost. Truth is indeed the seventh world, therefore called the sublime abode.
The names of the worlds are preceded by the triliteral monosyllable, to obviate the evil consequence announced by Menu, "A Brāhmaṇa, beginning and ending a lecture of the Veda (or the recital of any holy strain), must always pronounce to himself the syllable om; for unless the syllable om precede, his learning will slip away from him; and, unless it follow, nothing will be long retained." Or that syllable is prefixed to the several names of worlds, denoting that the seven worlds are manifestations of the power signified by that syllable. "As the leaf of the palasā," says Yājñavalkya, "is supported by a single pedicle, so is this universe upheld by the syllable om, a symbol of the supreme Brahma." "All rites ordained in the Veda, oblations to fire, and solemn sacrifices, pass away; but that, which paffeth not away," says Menu, "is declared to be the syllable om then called acshara, since it is a symbol of God, the Lord of created beings."

The concluding prayer is subjoined to teach the various manifestations of that light, which is the Sun himself. It is Brahma, the supreme soul. "The Sun," says Yājñavalkya, "is Brahma; this is a certain truth revealed in the sacred Upaniṣads, and in various śāstras of the Vedas." So the Bhāvaśīya purāṇa, speaking of the Sun, "Because there is none greater than he, nor has been, nor will be, therefore he is celebrated as the supreme soul in all the Vedas."

That greatest of lights, which exists in the Sun, exists also, as the principle of life, in the hearts of all beings. It shines externally in the sky, internally in the heart; it is found in fire and in flame. This principle of life, which is acknowledged by the virtuous as existing in the heart and in the sky, shines externally in the ethereal region, manifested in the form of the Sun.
It is also made apparent in the lustre of gems, stones and metals; and in the taste of trees, plants and herbs. That is, the irradiating being, who is a form of Brahme, is manifested in all moving beings (gods, demons, men, serpents, beasts, birds, insects and the rest), by their locomotion; and in some fixed substances, such as stones, gems and metals, by their lustre; in others, such as trees, plants and herbs, by their favour. Every thing, which moves, or which is fixed, is pervaded by that light, which in all moving things exists as the supreme soul and as the immortal thinking faculty of beings, which have the power of motion. Thus the venerable commentator says, "In the midst of the sun, stands the moon; in the midst of the moon, is fire; in the midst of light, is truth; in the midst of truth, is the unperishable being." And again; "God is the unperishable being residing in the sacred abode; the thinking soul is light alone; it shines with unborrowed splendour." This thinking soul, called the immortal principle, is a manifestation of that irradiating power, who is the supreme soul.

This universe, consisting of three worlds, was produced from water. "He first with a thought created the waters, and placed in them a productive seed" (Menu, Chapter I, v. 8). Water, which is the element, whence the three worlds proceeded, is that light, which is also the efficient cause of creation, duration and destruction, manifested with these powers, in the form of Brahma, Vishnu, and Rudra: to denote this, "earth, sky and heaven" are subjoined as epithets of light. These terms bear allusion also to the three qualities of truth, passion and darkness, corresponding with the three manifestations of power, as creator, preserver and destroyer; hence it is also intimated, that the irradiating being is manifested as Brahma, Vishnu and Rudra, who are respectively endowed with the qualities of truth, passion and darkness. The meaning is, that this irradiating be-
ing, who is the supreme Brahme manifested in three forms or powers, is the efficient cause of the creation of the universe, of its duration and destruction. So, in the Bhawishya purāna, Crīshnā says, "The sun is the god of perception, the eye of the universe, the cause of day; there is none greater than he among the immortal powers. From him this universe proceeded; and in him it will reach annihilation; he is time measured by instants &c." Thus the universe, consisting of three worlds containing all which is fixed or moveable, is the irradiating being; and he is the creator of that universe, the preserver and the destroyer of it. Consequently nothing can exist, which is not that irradiating power.

These extracts from two very copious commentaries will sufficiently explain the texts, which are meditated while the breath is held as above-mentioned. Immediately after these suppressions of breath, the priest should sip water reciting the following prayer, "May the sun, sacrifice, the regent of the firmament and other deities, who preside over sacrifice, defend me from the sin arising from the imperfect performance of a religious ceremony. Whatever sin I have committed by night, in thought, word, or deed, be that cancelled by day. Whatever sin be in me, may that be far removed. I offer this water to the sun, whose light irradiates my heart, who sprung from the immortal essence. Be this oblation efficacious." He should next make three ablutions with the prayers, "waters, since ye afford delight &c." at the same time throwing water eight times on his head or towards the sky, and once on the ground as before; and again make similar ablutions with the following prayer, "As a tired man leaves drops of sweat at the foot of a tree; as he, who bathes, is cleansed from all foulness; as an oblation is sanctified by holy grass; so may this water purify me from sin," and another ablution with the expiatory text, which
rehearses the creation. He should next fill the palm of his hand with water, and presenting it to his nose, inhale the fluid by one nostril, and, retaining it for a while, exhale it through the other, and throw away the water towards the northeast quarter. This is considered as an internal ablution, which washes away sins. He concludes by sipping water with the following prayer. "Water! thou dost penetrate all beings; thou dost reach the deep recesses of the mountains; thou art the mouth of the universe; thou art sacrifice; thou art the mystic word āsāṭ; thou art light, taste and the immortal fluid."

After these ceremonies, he proceeds to worship the sun, standing on one foot, and resting the other against his ankle or heel, looking towards the east, and holding his hands open before him in a hollow form. In this posture, he pronounces to himself the following prayers. 1st. "The rays of light announce the splendid fiery sun beautifully rising to illumine the universe. 2d. He rises, wonderful, the eye of the sun, of water, and of fire, collective power of gods; he fills heaven, earth and sky with his luminous net; he is the soul of all which is fixed or locomotive. 3d. That eye, supremely beneficial, rises pure from the east: may we see him a hundred years; may we live a hundred years; may we hear a hundred years. 4th. May we, preserved by the divine power, contemplating heaven above the region of darkness, approach the deity, most splendid of luminaries." The following prayer may be also subjoined. "Thou art self-existent, thou art the most excellent ray; thou givest effulgence: grant it unto me." This is explained as an allusion to the seven rays of the sun, four of which are supposed to point towards the four quarters, one upwards, one downwards, and the seventh, which is centrical, is the most excellent of all; and is here addressed in a prayer, which is explained as
SIGNIFYING, "May the supreme ruler, who generates all things, whose luminous ray is self-existent, who is the sublime cause of light, from whom worlds receive illumination, be favourable to us." After presenting an oblation to the sun in the mode to be forthwith explained, the Gayatri must be next invoked in these words, "Thou art light; thou art seed; thou art immortal life; thou art called effulgent: beloved by the gods, defamed by none, thou art the holiest sacrifice:" and it should be afterwards recited measure by measure; then the two first measures as one hemistich, and the third measure as the other; and lastly the three measures without interruption. The same text is then invoked in these words, "Divine text, who dost grant our best wishes, whose name is trisyllabic, whose import is the power of the supreme being, come, thou mother of the Vedas, who didst spring from Brahme, be constant here." The Gayatri is then pronounced inaudibly with the triliteral monosyllable and the names of the three lower worlds, a hundred, or a thousand times, or as often as may be practicable, counting the repetitions on a rosary of gems set in gold, or of wild grains. For this purpose the seeds of the putrajiva, vulgarly named pitonbi, are declared preferable. The following prayers from the Vishnu purana conclude these repetitions.* "Salutation to the sun:

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* I omit the very tedious detail respecting fins expiated by a set number of repetitions; but in one instance, as an atonement for unwarily eating or drinking what is forbidden, it is directed, that eight hundred repetitions of the Gayatri should be preceded by three suppressions of breath, touching water during the recital of the following text. "The bull roars; he has four horns, three feet, two heads, seven hands, and is bound by a threesfold ligature: he is the mighty resplendent being and pervades mortal men." The bull is justice personified. His four horns are the Brahma or superintending priest, the Udgatih or chanter of the Sama Vedas, the Hirii or reader of the Rig Veda, who performs the essential part of a religious ceremony, and the Achowrnya, who sits in the sacred close and chants the Yajurveda. His three feet are the three Vedas. Oblations and sacrifice are his two heads, roaring stupendously. His seven hands are the Hirii, Mrittavaryaha, Bramanachchandali, Grouvaraha, Achchchowrnya, Nipi and Purii; names by which officiating priests are designated at certain solemn rites. The threefold ligature, by which he is bound, is worship in the morning, at noon, and in the evening.
"to that luminary, O Brahme, who is the light of the pervader, the pure generator of the universe, the cause of efficacious rites. 2d. I bow to the great cause of day, (whose emblem is a full blown flower of the yavā tree,) the mighty luminary sprung from Časyapa, the foe of darkness, the destroyer of every sin." Or the priest walks a turn through the south, re-hearsing a short text, "I follow the course of the sun;" which is thus explained; as the sun in his course moves round the world by the way of the south, so do I, following that luminary, obtain the benefit arising from a journey round the earth by the way of the south.

The oblation abovementioned, and which is called arg'ha, consists of tila, flowers, barley, water and red sander's wood, in a clean copper vessel made in the shape of a boat; this the priest places on his head, and thus presents it with the following text. "He, who travels the appointed path, (namely the sun) is present in that pure orb of fire, and in the ethereal region; he is the sacrificer at religious rites, and he sits in the sacred close; never remaining a single day in the same spot, yet present in every house, in the heart of every human being, in the most holy mansion, in the subtile ether, produced in water, in earth, in the abode of truth, and in the stony mountains, he is that, which is both minute and vast." This text is explained as signifying, that the sun is a manifestation of the supreme being, present everywhere, produced everywhere, pervading every place and thing. The oblation is concluded by worshipping the sun with the subjoined text. "His rays, the efficient causes of knowledge, irradiating worlds, appear like sacrificial fires."

Preparatory to any act of religion, ablutions must be again performed in the form prescribed for the mid-day bath; the practice of bathing at
noon is likewise enjoined as requisite to cleanliness, conducive to health, and efficacious in removing spiritual as well as corporeal defilements; it must nevertheless be omitted by one, who is afflicted with disease; and a healthy person is forbidden to bathe immediately after a meal, and without laying aside his jewels and other ornaments. If there be no impediment, such as those now mentioned, or formerly noticed in speaking of early ablutions, he may bathe with water drawn from a well, from a fountain, or from the basin of a cataract; but he should prefer water which lays above ground, choosing a stream rather than stagnant water, a river in preference to a small brook, a holy stream before a vulgar river, and, above all, the water of the Ganges. In treating of the bath, authors distinguish various ablutions properly and improperly so called, such as rubbing the body with ashes, which is named a bath sacred to fire; plunging into water, a bath sacred to the regent of this element; ablutions accompanied by the prayers, "O waters since ye afford delight, &c." which constitute the holy bath; standing in dust raised by the treading of cows, a bath denominated from wind or air; standing in the rain during daylight, a bath named from the sky or atmosphere. The ablutions, or bath, properly so called, are performed with the following ceremonies.

After bathing and cleaning his person, and pronouncing as a vow, "I will now perform ablutions," he, who bathes, should invoke the holy rivers; "O Gangá, Yumundá, Saraswati, Satadru, Marudvidhá and Śyāścyá! hear my prayers; for my sake be included in this small quantity of water with the holy streams of Parushti, Asicni and Vitasla." He should also utter the radical prayer consisting of the words "Salutation to Náraýana." Upon this occasion a prayer extracted from the Padma purána is often used with this salutation called the radical text; and the ceremony is at once con-
cluded by taking up earth and pronouncing the subjoined prayer. "Earth 
" supporter of all things, trampled by horses, traversed by cars, trodden by 
" Vishnu! Whatever sin has been committed by me, do thou, who art 
" upheld by the hundred armed Chishna incarnate in the shape of a boar, 
" ascend my limbs and remove every such sin."

The text extracted from the Padma purana follows. "Thou didst spring 
" from the foot of Vishnu, daughter of Vishnu, honoured by him; there- 
" fore prefer us from sin, protecting us from the day of our birth even un- 
" to death. The regent of air has named thirty five millions of holy places 
" in the sky, on earth and in the space between; they are all comprised in 
" thee, daughter of Jannu. Thou art called she, who promotes growth; 
" among the gods thou art named the lotus; able, wife of Prithu, bird, 
" body of the universe, wife of Siva, nectar, female cherisher of science, 
" cheerful, favouring worlds, merciful, daughter of Jannu, conserver, giver 
" of consolation. Gangá, who flows through the three worlds, will be near 
" unto him, who pronounces these pure titles during his ablutions."

When the ceremony is preferred in its full detail, the regular prayer is 
a text of the Veda; "Thrice did Vishnu step, and at three strides traversed 
the universe: happily was his foot placed on this dusty earth: be this 
oblation efficacious." By this prayer is meant, "may the earth, thus taken 
up, purify me." Cow dung is next employed with a prayer importing, 
"Since I take up cow dung, invoking thereon the goddess of abundance, may 
I obtain prosperity." The literal sense is this, "I here invoke that goddess 
of abundance, who is the vehicle of smell, who is irresistible, ever white, 
present in this cow dung, mistress of all beings, greatest of elements, ruling 
all the senses." Water is afterwards held up in the hollow of both hands.
joined, while the prayer, denominated from the regent of water, is pronounced. "Because Varun'a king of waters spread a road for the sun, therefore do I follow that route. Oh! he made that road in untried space to receive the footsteps of the sun. It is he, who restrains the heart-rending wicked." The sense is, "Varun'a, king of waters, who curbs the wicked, made an expanded road in the ethereal region to receive the rays of the sun. I therefore follow that route." Next, previous to swimming, a short prayer must be meditated. "Salutation to the regent of water, past are the fetters of Varun'a." This is explained as importing, that the displeasure of Varun'a, at a man's traversing the waters, which are his fetters, is averted by salutation: swimming is therefore preceded by this address. The priest should next recite the invocation of holy rivers, and thrice throw water on his head from the hollow of both hands joined, repeating three several texts. 1st. "Waters! remove this sin, whatever it be, which is in me; whether I have done any thing malicious towards others, or cursed them in my heart, or spoken falsehoods. 2d. Waters, mothers of worlds, purify us; cleanse us by the sprinkled fluid, ye, who purify through libations; for ye, divine waters, do remove every sin. 3d. As a tired man leaves drops of sweat at the foot of a tree &c." Again swimming, and making a circuit through the south, this prayer should be recited; "May divine waters be auspicious to us, for accumulation, for gain, and for refreshing draughts; may they listen to us, that we may be associated with good auspices." Next reciting the following prayer, the priest should thrice plunge into water. "O consummation of solemn rites, who dost purify when performed by the most grievous offenders; thou dost invite the baseft criminals to purification; thou dost expiate the most heinous crimes. I atone for sins towards the gods by gratifying them with oblations and sacrifice; I expiate fins towards mortals by employing mortal men to offici-
and of the Brahmens especially

"... ate at sacraments. Therefore defend me from the pernicious sin of offending the gods."

Water must be next sipped with the prayer, "Lord of sacrifice thy heart is in the midst of the waters of the ocean &c." and the invocation of holy rivers is again recited. The priest must thrice throw up water with the three prayers, "O waters, since ye afford delight &c." and again with the three subjoined prayers. "1st. May the lord of thought purify me with an uncut blade of cura grass, and with the rays of the sun. Lord of purity, may I obtain that coveted innocence, which is the wish of thee, who art satisfied by this oblation of water, and of me, who am purified by this holy grass. 2d. May the lord of speech purify me &c. 3d. May the..." Thrice plunging into water, the priest should as often repeat the grand expiatory text, of which Ya\'jnya\'walya says, 'it comprises the principles of things and the elements, the existence of the [chaotic] mass, the production and destruction of worlds.' This serves as a key to explain the meaning of the text, which, being considered as the essence of the Vedas, is most mysterious. The author before me seems to undertake the explanation of it with great awe, and intimates, that he has no other key to its meaning, nor the aid of earlier commentaries. "The supreme being alone existed; afterwards there was universal darkness; next the watery ocean was produced by the diffusion of virtue; then did the creator, lord of the universe, rise out of the ocean, and successively frame the sun and moon, which govern day and night, whence proceeds the revolution of years; and after them he framed heaven and earth, the space between, and the celestial region." The terms, with which the text begins, both signify truth, but here explained as denoting the supreme Brahme, on the authority of a text quoted from the Veda; "Brahme is..."
"truth, the one immutable being. He is truth and everlasting knowledge." "During the period of general annihilation," says the commentator, "the supreme being alone existed. Afterwards, during that period, night was produced; in other words, there was universal darkness." "This universe existed only in darkness, imperceptible, undefinable, undiscoverable by reason, and undiscovered by revelation, as if it were wholly immersed in sleep" (Menu, Ch. I. v. 5). Next, when the creation began, the ocean was produced by an unseen power universally diffused; that is, the element of water was first reproduced as the means of the creation: "He first with a thought created the waters &c." (Menu, Ch. I. v. 8). Then did the creator, who is lord of the universe, rise out of the waters. The lord of the universe, annihilated by the general destruction, revived with his own creation of the three worlds. Heaven is here explained the expanse of the sky above the region of the stars. The celestial region is the middle world and heavens above. The author before me has added numerous quotations on the sublimity and efficacy of this text, which Menu compares with the sacrifice of a horse in respect of its power to obliterate sins.

After bathing while he repeats this prayer, the priest should again plunge into water, thrice repeating the text, "As a tired man leaves drops of sweat at the foot of a tree &c." Afterwards, to atone for greater offences, he should meditate the Gāyatrī &c. during three suppressions of breath. He must also recite it measure by measure, hemistich by hemistich, and lastly the entire text without any pause. As an expiation of the sin of eating with men of very low tribes, or of coveting or accepting what should not be received, a man should plunge into water, at the same time reciting a prayer, which will be quoted on another occasion. One, who has drunk spirituous liquors, should traverse water up to his throat, and drink as much
expressed juice of the moon plant, as he can take up in the hollow of both hands, while he meditates the triliteral monosyllable, and then plunge into water reciting the subjoined prayer. "O Rudra! hurt not our offspring and descendants; abridge not the period of our lives; destroy not our cows; kill not our horses; slay not our proud and irritable folks: because, holding oblations, we always pray to thee."

Having finished his ablutions, and coming out of the water, putting on his apparel after cleansing it, having washed his hands and feet, and having slipped water, the priest sits down to worship in the same mode which was directed after the early bath; substituting, however, the following prayer in lieu of that, which begins with the words, "May the sun, sacrifice &c." "May the waters purify the earth, that she, being cleansed, may purify me. May the Lord of holy knowledge purify her, that she, being cleansed by holiness, may purify me. May the waters free me from every defilement, whatever be my uncleanness, whether I have eaten prohibited food, done forbidden acts, or accepted the gifts of dishonest men." Another difference between worship at noon and in the morning, consists in standing before the sun with uplifted arms instead of joining the hands in a hollow form. In all other respects the form of adoration is similar.

Having concluded this ceremony, and walked in a round beginning through the south, and saluted the sun, the priest may proceed to study a portion of the Veda. Turning his face towards the east, with his right hand towards the south, and his left hand towards the north, sitting down with cuba grass before him, holding two sacred blades of grass on the tips of his left fingers, and placing his right hand thereon with the palm turned upwards, and having thus meditated the Gayatri, the priest should recite...
the proper text on commencing the lecture, and read as much of the Vedas as may be practicable for him, continuing the practice daily until he have read through the whole of the Vedas; and then recommencing the course.

Prayer on beginning a lecture of the Rgveda: “I praise the blazing fire, which is first placed at religious rites, which effect the ceremony for the benefit of the votary, which performs the essential part of the rite, which is the most liberal giver of gems.”

On beginning a lecture of the Yajurveda: “I gather thee, O branch of the Veda, for the sake of rain; I pluck thee for the sake of strength. Calves, ye are like unto air (that is, as wind supplies the world by means of rain, so do ye supply sacrifices by the milking of cows). May the luminous generator of worlds make you attain success in the best of sacraments.”

On beginning a lecture of the Samaveda: “Regent of fire, who dost effect all religious ceremonies, approach to taste my offering, thou, who art praised for the sake of oblations. Sit down on this grafs.”

The text, which is repeated on commencing a lecture of the Atharva Veda, has been already quoted on another occasion. “May divine waters be auspicious to us &c.”

In this manner should a lecture of the Vedas, or of the Vedangas, of the sacred poems and mythological history, of law and other branches of sacred literature, be conducted. The priest should next proceed to offer barley, tila and water to the manes. Turning his face towards the east, wearing the sacrificial cord on his left shoulder, he should sit down and spread, etc.
grains before him with the tips pointing towards the east. Taking grains of barley in his right hand, he should invoke the gods. "O assembled gods! hear my call, sit down on this grain." Then throwing away some grains of barley, and putting one hand over the other, he should pray in these words: "Gods! who reside in the ethereal region, in the world near us, and in heaven above; ye, whose tongues are flame, and who save all them who duly perform the sacraments, hear my call; sit down on this grain and be cheerful." Spreading the cuck grains, the tips of which must point towards the east, and placing his left hand thereon and his right hand above the left, he must offer grains of barley and water from the tips of his fingers (which are parts dedicated to the Gods), holding three straight blades of grain so that the tips be towards his thumb, and repeating this prayer: "May the Gods be satisfied: may the holy verses, the scriptures, the devout sages, the sacred poems, the teachers of them, and the celestial quiristers, be satisfied; may other instructors, human beings, minutes of time, moments, instants measured by the twinkling of an eye, hours, days, fortnights, months, seasons, and years with all their component parts, be satisfied herewith." Next, wearing the sacrificial thread round his neck, and turning towards the north, he should offer tila, or grains of barley with water, from the middle of his hand (which is a part dedicated to human beings) holding in it cuck grains, the middle of which must rest on the palm of his hand: this oblation he presents on grain, the tips of which are pointed towards the north, and with it he pronounces these words: "May Sanaca be satisfied; may Sanandana, Sanatana, Capila, Asuri, Bodhu, and Parchasic'ha, be satisfied herewith." Placing the thread on his right shoulder, and turning towards the south, he must offer tila and water from the root of his thumb (which

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* The verb is repeated with each term: "May the holy verses be satisfied; may the Vedas be satisfied &c."
As a part sacred to the progenitors of mankind, holding bent-grass thereon; this oblation he should present upon a vessel of rhinoceros horn placed on grass, the tips of which are pointed towards the south; and with it he says, "May fire, which receives oblations presented to our forefathers, be satisfied herewith; may the moon, the judge of departed souls, the sun, the progenitors, who are purified by fire, those, who are named from their drinking the juice of the moon-plant, and those, who are denominated from sitting on holy grass, be satisfied herewith." He must then make a similar oblation, saying, "May Nārāśārya, Pāraśārya, Śuca, Sa'calya, Yajñyāvalya, Jātucarna, Catyayana, 'Apastamba, Baudha'yana, Vāchacuti, Vaijjava'pi, Hu'hū, Lō'ca'cshi, Maitrāyanī, and Aindrāyanī, be satisfied herewith." He afterwards offers three oblations of water mixed with tila, from the hollow of both hands joined; and this he repeats fourteen times with the different titles of Yama, which are considered as fourteen distinct forms of the same deity. "Salutation to Yama; salutation to Dharma Ra'ja or the king of deities; to death; to Antaca or the destroyer; to Vaivasvata or the child of the sun; to time; to the slayer of all beings; to Audumbara or Yama springing out of the racemiferous fig tree; to him, who reduces all things to ashes; to the dark blue deity; to him who resides in the supreme abode; to him, whose belly is like that of a wolf; to the variegated being; to the wonderful inflictor of pains." Taking up grains of tila, and throwing them away while he pronounces this address to fire. "Eagerly we place and support thee; eagerly we give thee fuel; do thou fondly invite the progenitors who love thee, to taste this pious oblation:" let him invoke the progenitors of mankind in these words; "May our progenitors, who are worthy of drinking the juice of the moon-plant, and they, who are purified by fire, approach us through
"the paths which are travelled by Gods; and pleased with the food presented at this sacrament, may they ask for more, and preserve us from evil." He should then offer a triple oblation of water with both hands, reciting the following text and saying; "I offer this tila and water to my father, such a one, sprung from such a family." He must offer similar oblations to his paternal grandfather, and great grandfather; and another set of similar oblations to his maternal grandfather, and to the father and grandfather of that ancestor; a similar oblation must be presented to his mother, and single oblations to his paternal grandmother and great grandmother, and to his maternal grandmother and great grandmother: three more oblations are presented, each to three persons, paternal uncle, brother, son, grandson, daughter's son, son in law, maternal uncle, sister's son, father's sister's son, mother's sister, and other relations. The text alluded to bears this meaning; "water, be the food of our progenitors; satisfy my parents, ye, who convey nourishment, which is the drink of immortality, the fluid of libations, the milky liquor, the confined and promised food of the manes."

The ceremony may be concluded with three voluntary oblations; the first presented like the oblations to deities, looking towards the east, and with the sacrificial cord placed on his left shoulder; the second, like that offered to progenitors, looking towards the south and with the string passed over his right shoulder. The prayers which accompany these offerings are subjoined. 1. "May the Gods, demons, benevolent genii, huge serpents, heavenly quiristers, fierce giants, blood thirsty savages, unloved guardians of the celestial treasure, successful genii; spirits called led Gushmānda, trees, and all animals, which move in air or in water, which live on earth, and feed abroad, may all these quickly obtain contentment through the water presented by me." 2. "To satisfy
them, who are detained in all the hells and places of torment, this water is presented by me." 3. "May those, who are, and those, who are not, of kin to me, and those, who were allied to me in a former existence, and all, who desire oblations of water from me, obtain perfect contentment." The first text, which is taken from the Sāmaṇḍa, differs a little from the Yajurveda. "Gods, benevolent genii, huge serpents, nymphs, demons, wicked beings, snakes, birds of mighty wing, trees, giants, and all who traverse the ethereal region, genii who cherish science, animals that live in water or traverse the atmosphere, creatures that have no abode, and all living animals, which exist in sin or in the practice of virtue; to satisfy them is this water presented by me."

Afterwards the priest should wring his lower garment, pronouncing this text; "May those, who have been born in my family, and have died leaving no son nor kinsman bearing the same name, be contented with this water, which I present by wringing it from my vesture." Then placing his sacrificial cord on his left shoulder, sipping water, and raising up his arms, let him contemplate the sun, reciting a prayer inserted above; "He, who travels the appointed path &c." The priest should afterwards present an oblation of water to the sun, pronouncing the text of the Vishnupurâna, which has been already cited, "Salutation to the sun &c." He then concludes the whole ceremony by worshipping the sun with a prayer above quoted; "Thou art self-existent &c." by making a circuit through the south, while he pronounces, "I follow the course of the sun;" and by offering water from the hollow of his hand, while he salutes the regents of space and other deities. "Salutation to space; to the regents of space; to Brahma; to the earth; to salutary herbs; to fire; to speech; to the lord of speech; to the pervader; and to the mighty deity."
C. E. CARRINGTON, Esq:

Secretary to the Asiatick Society.

SIR,

The sacrifice of human and other victims, and the sacrificial rites celebrated by the Hindus, having been represented to me as a subject of curious investigation, which from a comparison with the ceremonies used on similar occasions, by other ancient nations, might perhaps be interesting, as well to the Society, as to the learned in Europe, I procured the Càlicà Purán, in which I was given to understand, I should meet with full information on the subject. To effect this purpose, I translated the Rudhiràdhyàyà or fanguinary chapter, which treats of human, as well as of other sacrifices, in which blood is shed. I hope also in my next communication, to lay before the Society, a full account of the Goddess Càli, to whom these sacrifices are made, and of the Bhairàvàs, sons of Siva, to two of whom the chapter is addressed by Sivà.

I am, &c. &c. &c.

W. C. BLAQUIERE.

CALCUTTA, August 15, 1796.
C. E. CARROLL

September 23, 1860.

Sir,

The friendly invitation, which you have been good enough to address to me, of becoming a member of the Amaranth Club, I accept with the utmost pleasure.

I shall be honored if you will have the goodness to permit me to express to you my deep gratitude for the honor which you have conferred upon me.

I shall be happy to attend the first meeting of the club, and to make any contributions which may be deemed suitable.

Yours truly,

W. C. PLOWEIR.
XXIII.

The Rudhir'adhyaya, or sanguinary Chapter, translated from the Cālicā Puran.—By W. C. Blaquiere, Esq.

SALUTATION TO CĀLICA.

(Shivā addresses Beta'ī Bhairāva and Bhairāvă.)

I will relate to you, my sons, the ceremonies, and rules to be observed in sacrifices, which being duly attended to, are productive of the divine favour.

The forms laid down in the Vaishnāvi Tāntra, are to be followed on all occasions, and may be observed by sacrificers to all deities.

Birds, tortoises, alligators, fish, nine species of wild animals, buffalos, bulls, hegoats, ichneumons, wild boars, rhinoceroses, antelopes, guanas, reindeer, lions, tygers, men, and blood drawn from the offerer's own body, are looked upon as proper oblations to the goddess Chandica, the Bhairāvās, &c.

It is through sacrifices that princes obtain bliss, heaven, and victory over their enemies.

The pleasure which the goddess receives from an oblation of the blood.
of fish and tortoises, is of one month's duration, and three from that of a crocodile. By the blood of the nine species of wild animals, the goddess is satisfied nine months, and for that space of time continues propitious to the offerer's welfare. The blood of the wild bull and guana, give pleasure for one year, and that of the antelope and wild boar for twelve years. The Sārābā's* blood satisfies the goddess for twenty-five years, and buffalo's and rhinoceros's blood for a hundred, and that of the tyger an equal number. That of the lion, rain-deer, and the human species, produces pleasure, which lasts a thousand years. The flesh of these, severally, gives the goddess pleasure for the same duration of time, as their blood. Now attend to the different fruits attending an offering of the flesh of a rhinoceros or antelope, as also of the fish called Robita.

The flesh of the antelope and rhinoceros, pleases the goddess five hundred years, and the Robita fish and Bārdbrināsā give my beloved (i.e. the goddess) delight for three hundred years.

A spotless goat, who drinks only twice in twenty-four hours, whose limbs are slender, and who is the prime among a herd, is called a Bārdbrināsā, and is reckoned as the best of Hävyās, (i.e. offerings to the deities); and Cāvyās; (i.e. offerings to deceased progenitors).

The bird whose throat is blue, and head red, and legs black, with white feathers, is called also Bārdbrināsā, and is the king of birds, and the favorite of me, and Vishnu.

By a human sacrifice, attended by the forms laid down, Devī is pleased

* Sārābā, an animal of a very fierce nature, said to have eight feet.
one thousand years, and by a sacrifice of three men, one hundred thousand years. By human flesh, Ca'mac'hya, Chandi, and Bhairava who assumes my shape, are pleased one thousand years. An oblation of blood, which has been rendered pure by holy texts, is equal to ambrosia; the head and flesh also afford much delight to the goddess Chandi. Let therefore the learned, when paying adoration to the goddess, offer blood and the head; and when performing the sacrifice to fire, make oblations of flesh.

Let the performer of the sacrifice be cautious never to offer bad flesh, as the head and blood, are looked upon by themselves, equal to ambrosia.

The gourd, sugarcane, spirituous liquors, and fermented liquors, are looked upon as equivalent to other offerings, and please the goddess for the same duration of time, as the sacrifice of a goat.

The performance of the sacrifice, with a Chandrabasi, or Catri (two weapons of the axe kind) is reckoned the best mode, and with a hatchet or knife, or saw, or a Sangeul the second best; and the beheading with a hoe or Bhallac, (an instrument of the spade kind), the inferior mode.

Exclusive of these weapons, no others of the spear or arrow kind, ought ever to be used in performing a sacrifice, as the offering is not accepted by the goddess, and the giver of it dies. He who with his hands, tears off the head of the consecrated animal, or bird, shall be considered equally guilty with him, who has slain a Brahmen, and shall undergo great sufferings.

Let not the learned use the ax, before they have invoked it by holy texts, which have been mentioned heretofore, and framed by the learned for
the occasion; let those I now tell you, be joined to them, and the ax invoked, and particularly so, where the sacrifice is to be made to the goddesses Durga and Cama'chya.

Let the sacrificer repeat the word Cali twice, then the words Devi Bajreswari, then Lawha Danda'ya'i, Namah! which words may be rendered Hail Cali, Cali, Hail! Devi, goddess of thunder, Hail! iron sceptered goddess! Let him then take the ax in his hand, and again invoke the same by the Calatriya text, as follows.

Let the sacrificer say Hrang, Hring. Cali, Cali, O horrid-toothed goddess; eat, cut, destroy all the malignant, cut with this ax; bind bind, seize seize, drink blood, spheng spheng; secure secure. Salutation to Cali. Thus ends the Calatriya Mantra.

The Churgai (the ax) being invoked by this text called the Calatriya Mantra, Calatra'tri (the goddess of darkness), herself presides over the ax, uplifted for the destruction of the sacrificer's enemies.

The sacrificer must make use of all the texts directed, previous to the sacrifice, and also of the following, addressing himself to the victim.

Beasts were created by the self-existing himself, to be immolated at sacrifices; I therefore immolate thee, without incurring any sin in depriving thee of life.

Let the sacrificer then name the deity to whom the sacrifice is made, and the purpose for which it is performed, and by the above text immolate the
victim, whose face is to be towards the north; or else let the sacrificer turn his own face to the north, and the victim’s to the east. Having immolated the victim, let him without fail mix salt &c. as before mentioned with the blood.

The vessel in which the blood is to be presented, is to be, according to the circumstances of the offerer, of gold, silver, copper, brass, or leaves sewed together, or of earth, or of tutenague, or of any of the species of wood used in sacrifices.

Let it not be presented in an iron vessel; nor in one made of the hide of an animal, or the bark of a tree; nor in a pewter, tin, or leaden vessel. Let not the blood be presented, in the holy vessels named frub and fruch, nor on the ground. Let it not be presented, in the Ghātā, (i.e. an earthen jar always used in other religious ceremonies;) let it not be presented, by pouring it out on the ground, or into any of the vessels, used at other times for offering food to the deity. Let not the good man who wishes for prosperity, offer the blood in any of these vessels. Human blood must always be presented, in a metallic or earthen vessel, and never on any account in a vessel made of leaves, or similar substances.

The offering a horse, except at the Āśvamedha sacrifice, is wrong; as also offering an elephant, except at the Gājā Medha; let therefore the ruler of men observe never to offer them except on those occasions. And on no account whatsoever let him offer them to the goddess Devī; using the wild bull called Chāmārā as a substitute for the horse, where the occasion requires one.
Let not a Brahmen ever offer a lion, or a tyger, or his own blood, or spirituous liquors, to the goddess Devi.

If a Brahmen sacrifices either a lion, a tyger, or a man, he goes to hell, and passes but a short time in this world, attended with misery and misfortune.

If a Brahmen offers his own blood, his guilt is equal to that of the slayer of a Brahmen, and if he offers spirituous liquors, he is no longer a Brahmen.

Let not a Cshetree offer an antelope; if he does, he incurs the guilt of a Brahmen slayer. Where the sacrifice of lions, of tygers, or of the human species is required, let the three first classes act thus: Having formed the image of the lion, tyger, or human shape, with butter, pulse, or barley meal, let them sacrifice the same, as if a living victim, the axe being first invoked by the text Nōmō &c.

Where the sacrifice of a number of animals is to take place, it is sufficient to bring and present two or three to the deity, which serves as a consecration of the whole. I have now related to you, O Bhairāvā, in general terms, the ceremonies and forms of sacrifices, attend now to the different texts to be used on the several different occasions.

When a buffalo is presented to Devi, Bhairāvi, or Bhairāvā, let the sacrificer use the following Māntrā in invoking the victim:

"In the manner that thou destroyest horses, in the manner that thou carrisest Chândica, destroy my enemies, and bear prosperity to me, O buffalo."
"O steed of death, of exquisite and unperishable form, produce me long life and fame; salutation to thee, O buffalo!"

Let him then address the Charga (ax), calling it Gubá jātā, i.e. the cavern-born, and besprinkle it with water, saying, "Thou art the instrument used in sacrifices, to the gods and ancestors, O ax! of equal might with the wild rhinoceros, cut asunder my evils, O cavern-born! Salutation to thee again and again.

At the sacrifice of an antelope, the following Mantrā is to be used:

"O antelope! representative of Brahma, the emblem of his glory, thou who art even as the four Vedas, and learned, grant me extensive wisdom and celebrity."

At the sacrifice of a Sarūbbā, let the following Mantrā be used.

"O eight footed animal! O sportful native of the Chāndrā Bhūgā mountains! thou eight formed, long armed animal! thou who art called Bhairāvyā: salutation to thee, again and again!" Assume the terrific form under which thou destroyest the wild boar, and in the same manner destroy my enemies.

At the sacrifice of a lion. "O Heri, who in the shape of a lion, bearest Chāndica, bear my evils and avert my misfortunes. Thy shape, O lion! was assumed by Heri to punish the wicked part of the human race, and under that form, by truth, the tyrant Hirānyā Cāsipu was

* A mark of eminence.
"destroyed." I have now related to thee, O Bhairāvā! who art void of sin, the mode of paying adoration to the lion.

Now attend to the particulars, relative to the offerings of human blood.

Let a human victim be sacrificed at a place of holy worship, or at a cemetery where dead bodies are burned. Let the oblation be performed in the part of the cemetery called Herucā, which has been already described; or at a temple of Cāmācyā; or on a mountain.—Now attend to the mode.

The cemetery represents me, and is called Bhairāvā, it has also a part called Tāntrānga; the cemetery must be divided into these two divisions, and a third called Herucā.

The human victim is to be immolated in the east division, which is sacred to Bhairāvā; the head is to be presented in the south division, which is looked upon as the place of sculls, sacred to Bhairavi; and the blood is to be presented in the west division, which is denominated Herucā.

Having immolated a human victim, with all the requisite ceremonies, at a cemetery, or holy place, let the sacrificer be cautious not to cast eyes upon the victim.

On other occasions also, let not the sacrificer cast eyes upon the victim immolated, but present the head, with eyes averted.

The victim must be a person of good appearance, and be prepared by ablutions, and requisite ceremonies, such as eating consecrated food the day
before; and by abstinence from flesh and venery; and must be adorned
with chaplets of flowers and besmeared with sandal wood.

Then causing the victim to face the north, let the sacrificer worship the
several deities presiding over the different parts of the victim's body, let
the worship be then paid to the victim himself by his name.

Let him worship Brahmā in the victim's Brahman Rūndhrā, i.e.:
cave of Brahman, cavity in the skull, under the spot where the Sutūra
coronalis and Sagittalis meet. * Let him worship the earth in his nose,
saying Medinyāth Nāmāh, and casting a flower; In his ears, Acāsā, the
subtile æther, saying Acāsāyā Nāmāh; In his tongue, Sarvata Mucba,
(i.e. Brahman, Agni, &c. the regents of speech, &c.) saying Sarvata
Mucbāyā Nāmāh; the different species of light in his eyes, and Vishnu
in his mouth. Let him worship the Moon on his forehead, and
Indra on his right cheek, Fire on his left cheek, Death on his throat, at the
tips of his hair the Regent of the south west quarter, and Varuna between
the eye-brows; on the bridge of the nose let him pay adoration to Wind,
and on the shoulders to Dhāneswarā, (i.e. god of riches.) Then wor-
shipping the Sarpā Rājā, (i.e. king of serpents;) on the stomach of the vic-
tim, let him pronounce the following Māntrā:

"O best of men! O most auspicious! O thou who art an assemblage of
all the deities, and most exquisite! Bestow thy protection on me, save me
thou devoted, save my sons, my cattle, and kindred, preserve the state, the
ministers belonging to it, and all friends, and as death is unavoidable,
part with (thy organs of) life doing an act of benevolence." Bel-

* This is done by casting a flower there, saying Brāhmāyā Nāmāh; salutation to Brāhmā.
"tow upon me, O most auspicious! the bliss which is obtained by the
most austerer devotion, by acts of charity and performance of religious
ceremonies, and at the same time, O most excellent! attain supreme
bliss, thyself. May thy auspices, O most auspicious! keep me secure
from Rācesbāsās, Pisāchās, terrors, serpents, bad princes, enemies and
other evils, and death being inevitable, charm Bhāgāvatī in thy last
moments by copious streams of blood, spouting from the arteries of
thy fleshy neck."

Thus let the sacrificer worship the victim, adding whatever other texts
are applicable to the occasion, and have been before mentioned.

When this has been done, O my children! the victim is even as my-
selves, and the guardian deities of the ten quarters take place in him; then
Brahma and all the other deities assemble in the victim, and be he ever
to great a sinner, he becomes pure from sin, and when pure, his blood
changes to ambrosia, and he gains the love of Meha' Devi the goddess of
the Yog Nidrā, (i.e. the tranquil repose of the mind from an abstraction of
ideas;) who is the goddess of the whole universe, the very universe itself; he
does not return for a considerable length of time, in the human form,
but becomes a ruler of the Gānā Devātās, and is much respected by me
myself. The victim who is impure, from sin, or ordure and urine, Cā-
māc'bya will not even hear named.

By the repetition of the texts, and forms laid down for the sacrifices of
buffalos, and other animals, their bodies become pure, and their blood, ac-
ceptable to the goddess Shīvā.'
ON occasions of sacrifices to other deities also, both the deities and victims must be worshipped, previous to the immolation.

The blind, the crippled, the aged, the sick, the afflicted with ulcers, the hermaphrodite, the imperfectly formed, the scarred, the timid, the leprous, the dwarfish, and the perpetrator of Mebapataca (heinous offences, such as slaying a Brabmen, drinking spirits, stealing gold, or defiling a spiritual teacher’s bed) one under twelve years of age, one who is impure from the death of a kinsman, &c. one who is impure from the death of a Mebá Guru (father and mother), which impurity lasts one whole year. These severally are unfit subjects for immolation, even though rendered pure by sacred texts.

Let not the female, whether quadruped or bird, or a woman be ever sacrificed; the sacrificer of either will indubitably fall into hell. Where the victims of either the beast or bird creation are very numerous, the immolation of a female is excusable; but this rule does not hold good, as to the human species.

Let not a beast be offered under three months old; or a bird who is under three paesbas, (forty-five days). Let not a beast or bird who is blind, deficient in a limb, or ill formed be offered to Deví; nor one who is in any respect unfit, from the reasons which have been set forth, when speaking of the human race; let not animals and birds with mutilated tails, or ears, or broken teeth or horns be presented on any account.

Let not a Brabmen or a Chandála be sacrificed; nor a prince; nor that which has been already presented to a Brabmen, or a deity; nor the offspring
of a prince; nor one who has conquered in battle; nor the offspring of a Brahmen, or of a Cshetree; nor a childless brother; nor a father; nor a learned person; nor one who is unwilling; nor the maternal uncle of the sacrificer. Those not here named, and animals and birds of unknown species are unfit. If those named are not forthcoming, let their place be supplied by a male, as or camel. If other animals are forthcoming, the sacrifice of a tyger, camel, or ass must be avoided.

Having first worshipped the victim, whether human, beast, or bird, as directed, let the sacrificer immolate him uttering the Mantra directed for the occasion, and address the deity with the text laid down before.

Let the head and blood of a human victim be presented on the right side of Devi, and the sacrificer address her standing in front. Let the head and blood of a goat be presented on the left, and the head and blood of a buffalo in front. Let the head and blood of birds be presented on the left, and the blood of a person's own body in front.

Let the ambrosia proceeding from the heads of carnivorous animals, and birds be presented on the left hand, as also the blood of all aquatrick animals.

Let the antelope's head and blood, and that of the tortoise, rhinoceros and hare, and crocodile, and sifh, be presented in front.

Let a lion's head and blood, be presented on the right hand, and the rhinoceros's also; let not on any account the head or blood of a victim ever be presented behind the deity, but on the right, left, and in front.
Let the consecrated lamp, be placed either on the right hand, or in front, but on no account, on the left. Let incense be burnt on the left, and in front, but not on the right hand; let perfumes, flowers, and ornaments, be presented in front; With respect to the different parts of the Circle, where to present the offerings, the mode already laid down may be observed. Let Mādirā (spirits liquor) be presented behind, other liquids on the left.

Where it is absolutely necessary to offer spirits, let the three first classes of men, supply their place, by cocanut juice in a brass vessel, or honey in a copper one. Even in a time of calamity, let not a man of the three first classes, offer spirituous liquor, except that made from flowers, or stewed dishes. Let princes, ministers of state, counsellors and vendors of spirituous liquors, make human sacrifices, for the purpose of attaining prosperity and wealth.

If a human sacrifice is performed, without the consent of the prince, the performer incures sin. In cases of eminent danger, or war, sacrifices may be performed at pleasure, by princes themselves and their ministers, but by none else.

The day previous to a human sacrifice, let the victim be prepared by the text Mānasāc, and three Devī Sucēās, and the text Gandhā dwārāṅg; and by touching his head with the ax, and besmearing the ax with sandal &c. perfumes, and then taking some of the sandal &c. from off the ax, and besmearing the victims neck therewith.

Then let the text Ambē Ambicē, &c. and the Rowāra and Bhairāvā
texts be used, and Devi herself will guard the victim, who when thus purified, malady does not approach him, nor does his mind suffer any derangement from grief and similar causes, nor does the death or birth of a kinsman, render him impure.

Now listen to the good and bad omens, to be drawn from the falling of the head, when severed from the body.

If the head falls towards the northeast, or southwest, the prince of the country and offerer of the sacrifice will both perish.

If the human head, when severed from the body, falls, in the following quarters, the following omens are to be drawn.

If in the east, wealth; if in the southwest, power; if in the south, terror; if in the west, profit; if in the northwest, a son; if in the north, riches.

Listen now to the omens to be drawn from the falling of the head of a buffalo, when severed from the body.

If in the north, property; the northeast, loss; in the east, dominion; the southeast, wealth; the south, victory over enemies; if in the southwest, fear; if in the west, attainment of kingdom; if in the northeast, prosperity; this rule, O Bhairavah! holds good for all animals, but not for aquatick or oviparous creatures.

If the heads of birds, or fishes fall in the south, or southeast quarter, it indicates fear, and if any of the other quarters, prosperity.
If a noise proceeding from a chattering of the teeth of the victim's severed head, or snapping of the beak is perceptible, it indicates alarm. If tears proceed from the eyes of a human victim's severed head, it indicates destruction to the prince.

If tears proceed from the severed head of a buffalo at the time of presenting it, it indicates that some foreign inimical prince will die. If tears proceed from the eyes of other animals, they indicate alarm, or loss of health.

If the severed head of a human victim smiles, it indicates increase of prosperity, and long life to the sacrificer, without doubt; and if it speak, whatever it says will come to pass.

If the sound Hoomb proceeds from the human victim's severed head, it indicates that the prince will die, if phlegm, that the sacrificer will die. If the head utters the name of a deity, it indicates wealth to the sacrificer within six months.

If at the time of presenting the blood, the victim discharge feces or urine, or turns about, it indicates certain death to the sacrificer; if the victim kick with his left leg, it indicates evil, but a motion of his legs in any other mode, indicates prosperity.

The sacrificer must take some blood between his thumb and third finger, and discharge it towards the southwest, on the ground as an offering to the deities, accompanied by the Mebā Cawfici Māntrā.

Let the victim offered to Devi, if a buffalo, be five years old, and if human twenty-five.
Let the Cawsici * Māntri be uttered, and the sacrificer say, Eṣṭā bāli Sevābā, "mysterious praise to this victim."

A prince may sacrifice his enemy, having first invoked the ax, by holy texts, by substituting a buffalo or goat, calling the victim by the name of the enemy, throughout the whole ceremony.

Having secured the victim with cords, and also with sacred texts, let him strike off the head, and present it to Devi with all due care. Let him make these sacrifices, in proportion to the encrease, or decrease of his enemies, lopping off the heads of victims, for the purpose of bringing destruction on his foes, infusing by holy texts, the soul of the enemy, into the body of the victim, which will when immolated, deprives the foe of life also.

Let him first say, "O goddess of horrid form, O Chāndica, eat, devour such a one, my enemy, O consort of fire! Salutation to fire. This is the enemy who has done me mischief, now personated by an animal; destroy him O Ma'hamar! Spheng! Spheng! Eat, devour." Let him then place flowers upon the victim's head; the victim's blood must be presented with the Māntrā of two syllables.

If a sacrifice is performed in this manner on the Mehanavami (the ninth of the moon in the month of Aśvin), let the Homa (i.e. oblation to fire) be performed with the flesh of the victim.

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* The Cawsici Māntri—"* Hail Cawsici, three-eyed goddess, of most terrifying appearance, around whose neck a string of human skulls is pendant, who art the destroyer of evil spirits, who art armed with an ax, the foot of a bed, and a spear, Rhing Cawsici! Salutation to thee with this blood."
Using the texts which are laid down in the Durga Tantra, and purified fire, let the Homa be performed after the sacrifice, and it will procure the death of foes.

Let not any one present blood drawn from any part of the body below the navel, or from the back. Let not blood drawn from the lips, or chin, or from any limb, be presented. Blood drawn from any part of the body between the neck, and navel, may be presented, but violent incisions for the purpose of obtaining it, must not be made.

Blood drawn from the cheeks, forehead, between the eyebrows, from the tips of the ears, the arms, the breasts, and all parts between the neck and navel, as also from the sides, may be presented.

Let not blood drawn from the ankles, or knees, or from parts of the body which branch out, be presented, nor blood, which has not been drawn from the body for the express purpose of being offered.

The blood must be drawn for the express purpose of an oblation, and from a man pure in body and mind, and free from fear; it must be caught in the petal of a lotus and presented. It may be presented in a gold, silver, brass, or iron vessel, with the due form, and texts recited.

The blood if drawn by an incision made with a knife, ax, or blade, gives pleasure, in proportion to the size of the weapon.

The sacrificer may present one fourth of the quantity which a lotus petal will contain, but he must not give more on any account; nor cut his body.

B b b 2
more than is necessary. He, who willingly offers the blood of his body, and his own flesh the size of a grain of linseed, 
maṣṭa, tīla or 
modga, with zeal and fervency, obtains what he desires in the course of six months.

Now attend to the fruits, obtained by offering the burning wick of a lamp, placed upon the arms, ears, or breast even for a single moment. He, who applies the same, obtains happiness, and great possessions; and for three Cūlpās is, even as of the body of Devi herself; after which he becomes a ruler of the universe.

He, who for a whole night stands before the goddess Srīva, holding the head of a sacrificed buffalo in his hands, with a burning lamp, placed between the horns, obtains long life and supreme felicity in this world; and in the other, resides in my mansion, holding the rank of a ruler of the Gana Devatas.

He, who for a single Čhāna (a short space of time) holds the blood which proceeds from a victim's head in his hands, standing before the goddess in meditation, obtains all that he desires in this world, and supremacy in the Devi Lōc.

Let the learned, when he presents his own blood, use the following text, followed by the Mula Māntrā or principal text, used in the worship of the goddess Devi, under the form which she is at that time addressed.

"Hail! Supreme delusion, Hail! Goddess of the universe, Hail! "thou who fulfillest the desires of all. May I presume to offer thee the
blood of my body; and wilt thou deign to accept it, and be propitious towards me."

Let the following text be used when a person presents his own flesh.

"Grant me, O goddess! bliss, in proportion to the fervency with which I present thee with my own flesh, invoking thee to be propitious to me; salutation to thee again and again, under the mysterious syllables, "Hoong Hoong."

When the wick of a lamp is applied burning to the body, the following text is to be used.

"Hail! Goddess, salutation to thee under the mysterious syllables Hoong Hoong. To thee I present this auspicious luminary, fed with the flesh of my body, enlightening all around, and exposing to light also, the inward recesses of my soul."

On the autumnal Meba Navami, or when the moon is in the lunar mansion Scanda or Bīṣakā, let a figure be made, either of barley meal or earth, representing the person with whom the sacrificer is at variance; and the head of the figure be struck off, after the usual texts have been used. The following text is to be used in invoking an ax on the occasion.

"Effuse, effuse blood; be terrifick; be terrifick; seize, destroy, for the love of 'Ambica', the head of this enemy."

Having struck off the head, let him present it, using the texts laid down
hereafter for the occasion, concluding with the word pbat. Water must be sprinkled upon the meal, or earthen victim, which represents the sacrificer's enemy, using the text commencing with rāṣṭa drābaib (i.e. by streams of blood) and marks must be made on the forehead, with red sanders; garlands of red flowers must be put round the neck of the image, and it must be dressed in red garments, and tied with red cords, and girt with a red girdle. Then placing the head towards the north, let it be struck off with an ax, and presented using the Scanda text. This is to be used at presenting the head, if the sacrifice is performed on the night of the Scanda Nāśēatra, or lunar mansion Scanda. The Vijāe'ba Māntrā is to be used on the night of the Vijāe'ba mansion. Let the sacrificer, contemplate two attendants on the goddess, as having fiery eyes, with yellow bodies, red faces, long ears, armed with tridents, and axes, in their two right hands, and holding human sculls, and vases in their two left. Let them be considered as having three eyes, and strings of human sculls suspended round their necks, with long straggling frightful teeth.

In the month of Chaitra on the day of the full moon, sacrifices of buffalos and goats give unto me, of horrid form, much pleasure; as do also honey and fish, O my sons!

Where a sacrifice is made to Chandica, the victim's head having been cut off, must be sprinkled with water, and afterwards presented with the texts laid down.

The sacrificer may draw an augury from the motions of the slain victim, when near expiring; and for so doing, he must first address the goddess, considering the soul of the victim as taking its departure in a car, and his
body as a holy spot. "O goddess! make known unto me whether the omens are favourable or not."

If the head of the slain victim, does not move for some time after this, the sacrificer may look upon the circumstance as a good omen, and if the reverse as a bad one.

He who performs sacrifices according to these rules, obtains his wishes to the utmost extent.

Thus are the rules and forms of sacrifice, laid down and communicated by me to you. I will now inform you, what other oblations may be made.

Thus ends the Rudberádbyáyā.
XXIV.

AN ACCOUNT of the PEARL-FISHERY in the Gulph of Manâr, in March and April 1797.—By HENRY J. LE BECK, ESQ. communicated by DOCTOR ROXBURGH.

FROM the accounts of the former pearl-fisheries at Ceylon, it will be found, that none have ever been so productive as this year's. It was generally supposed that the renter would be infallibly ruined, as the sum he paid for the present fishery was thought exorbitant, when compared with what had been formerly given; but this conjecture in the event appeared ill founded, as it proved extremely profitable and lucrative.

The farmer this time was a Tamul merchant, who, for the privilege of fishing with more than the usual number of donies or boats, paid between two and three hundred thousand Portonovo pagodas, a sum nearly double the usual rent. These boats he farmed out again to individuals in the best manner he could, but, for want of a sufficient number of divers, some of them could not be employed.

The fishing, which commonly began about the middle of February if wind and weather allowed, was this year for various reasons, delayed till the end of the month; yet so favourable was the weather, that the renter was able to take advantage of the permission granted by the agreement, to fish a little longer than the usual period of thirty days.
The fishery cannot well be continued after the setting in of the southern monsoon, which usually happens about the 15th April, as after that time the boats would not be able to reach the pearl banks, and the water being then troubled by heavy seas, diving would be impracticable; in addition to which, the sea-weed a species of _fucus_ driven in by the southerly wind, and which spreads to a considerable distance from the shore, would be an impediment.

Many of the divers being Roman Catholics, leave the fishery on Sundays to attend divine-service in their church at Aripoo; but if either a Mahomedan, or Hindoo festival happens during the fishing days, or if it is interrupted by stormy weather, or any other accident, this lost time is made up by obliging the Catholics to work on Sundays.

The fear of sharks, as we shall see hereafter, is also another cause of interruption. These amongst some others are the reasons, that out of two months (from February till April), seldom more than thirty days can be employed in the fishery.

As this time would be insufficient to fish all the banks, (each of which has its appropriate name both in Dutch and Tamul,) it is carried on for three or four successive years, and a new contract annually made, till the whole banks have been fished, after which they are left to recover.

The length of time required for this purpose, or from one general fishery to another, has not yet been exactly determined; it was therefore a practice, to depute some persons to visit the banks annually, and to give their opinion whether a fishery might be undertaken with any degree of success*?

* A gentleman who assisted at one of the last visits, being an Engineer, drew a chart of the banks, by which their situation and size are now better known than formerly.
From various accounts which I have collected from good authority, and the experience of those who assisted at such examinations, I conjecture, that every seven years such a general fishery could be attempted with advantage, as this interval seems sufficient for the pearl-shells to attain their growth. I am also confirmed in this opinion, by a report made by a Dutch Governor at Jafna of all the fisheries that have been undertaken at Ceylon since 1722, a translation of which is to be found in Wolf's travels into Ceylon. But, the ruinous condition in which the divers leave the pearl-banks at each fishery, by attending only to the profit of individuals, and not to that of the public, is one great cause, that it requires twice the above-mentioned space of time, and sometimes longer, for rendering the fishing productive. They do not pay the least attention, to spare the young and immature shells that contain no pearl; heaps of them are seen thrown out of the boats as useless, on the beach between Manår* and Aripoo; if these had been suffered to remain in their native beds, they would no doubt have produced many fine pearls. It might therefore be advisable, to oblige the boat people to throw them into the sea again before the boats leave the bank. If this circumspection in sparing the small pearl-shells to perpetuate the breed was always observed, succeeding fisheries might be expected sooner, and with still greater success; but the neglect of this simple precaution will, I fear, be attended with similar fatal consequences here, as have already happened to the pearl-banks on the coast of Persia, South-America, and Sweden, where the fisheries are by no means so profitable at present as they were formerly.

Another cause of the destruction of numbers of both old and young pearl-shells, is the anchoring of so many boats on the banks, almost all of

* Manår, properly Manër, is a Tamil word, and signifies a sandy river, from the shallowness of the sea at that place.
them using differently formed, clumsy, heavy, wooden anchors, large stones, &c. &c. If this evil cannot be entirely prevented, it might at least be greatly lessened, by obliging them all to use anchors of a particular sort, and less destructive.

This season the Sceewel-bank only was fished, which lies above twenty miles to the westward of Aripoo, opposite to the fresh water rivers of Moosalee, Modragam and Pomparipoo. It has been observed, that the pearls on the north west point of this bank, which consists of rock, are of a clearer water than those found on the south east nearest the shore, growing on corals and sand.

Condatchey is situated in a bay forming nearly a half moon, and is a waste, sandy district, with some miserable huts built on it. The water is bad and brackish, and the soil produces only a few widely scattered, stunted trees, and bushes. Those persons who remain here during the fishery are obliged to get their water for drinking from Aripoo, a village with a small old fort, lying about four miles to the southward. Tigers, Porcupines, Wild-hogs, Pangolins or the Ceylon Armadillos, are amongst other Quadrupeds here common. Of Amphibia there are tortoises, especially the Testudo geometrica, and various kinds of snakes. A conchologist meets here with a large field for his enquiries. The presents which I made to the people employed in the fishery, to encourage them to collect all sorts of shells which the divers bring on shore, produced but little effect; as they were too much taken up in searching after the mother of pearl shells, to pay attention to any other object. However my endeavours were not entirely useless; I will specify here a few of the number I collected during my stay. Different kinds of Pincta*, Palium porphyreum, Solen radiatus†, Venus castrensis

* Scallop.  † Radiated razor shell.
Linn.*, Ostrea byotis †, Ostr. Forskoli, Ostr. malleus ‡, Mytilus birundo
Linn. ||, Spondylus croceus, Pholas pustilia Linn. §, Mitra episcopalis
Bulla perfeita maculata **, Harpa nobilis, Porcellana salita Rumph. ||, Strombus scorpio, and other of inferior kinds. Amongst the Zoophytes,
many valuable species of Spongia, Coralina, Serpulina, &c., a great
variety of sea-stars, and other marine productions that cannot be preserved
in spirits, but should be described on the spot. These, as well as the de-
scription of the different animals inhabiting the shells, are the more worthy
of our attention, and deserve further investigation, as we are as yet very de-
cicient in this branch of natural history.

During the fishing season, the desert, barren place Condatchey, offers to our
view a scene equally novel and astonishing. A heterogeneous mixture of
thousands of people of different colours, countries, casts, and occupations;
the numbers of tents, and huts erected on the sea-shore, with their shops or
bazaars before each of them; and the many boats returning on shore in the
afternoon, generally richly laden: all together form a spectacle entirely new
to a European eye. Each owner runs to his respective boat as soon as it
reaches the shore, in hopes of finding it fraught with immense treasure,
which is often much greater in imagination than in the shell; and though he
is disappointed one day, he relies with greater certainty on the next: look-
ing forward to the fortune promised him by his stars, as he thinks it impos-
sible for the astrological predictions of his Brahmin to err.

* Alpha cockle. † Double cock-cob. ‡ Hammer oyster; these were pretty large, but many
broken and some covered by a calcareous crust. It is very probable that amongst these, there may be
some precious white ones.
|| Swallow muscle. § The Wood-piercer. ** Diving snail (Grew. Mus.). || Salt-coury, KL-
To prevent riot and disorder, an officer with a party of Malays is stationed here. They occupy a large square, where they have a field-piece and a flag-staff for signals.

Here and there you meet with brokers, jewellers, and merchants of all descriptions; also sutlers offering provisions and other articles to gratify the sensual appetite and luxury. But by far the greater number are occupied with the pearls. Some are busily employed in assorting them, for which purpose they make use of small brass plates, perforated with holes of different sizes; others are weighing, and offering them to the purchaser; while others are drilling, or boring them; which they perform for a trifle.

The instrument these people carry about with them for this purpose is of very simple construction, but requires much skill and exercise to use it; it is made in the following manner. The principal part consists of a piece of soft wood, of an obtuse, inverted, conical shape, about six inches high and four in diameter in its plain surface; this is supported by three wooden feet, each of which is rather more than a foot in length. Upon the upper, flat part of this machine, are holes or pits for the larger pearls, and the smaller ones are beat in with a wooden hammer. On the right side of this stool half a coconut shell is fastened, which is filled with water. The drilling instruments are iron spindles, of various sizes adapted to the different dimensions of the pearls, which are turned round in a wooden head by a bow. The pearls being placed on the flat surface of the inverted cone, as already mentioned, the operator sitting on a mat presses on the wooden head of his instrument with the left hand, while with his right he moves the bow, which turns round the moveable part of the drill; at the same time he moistens the pearl occasionally, dipping the
little finger of the same hand into the water of the coco-nut shell, with a
dexterity that can only be attained by constant practice.

Amongst the crowd are found vagabonds of every description; such as
Pandarams, Andee, or Hindoo monks, fakirs, beggars and the like, who are
impertinently troublesome. Two of these wretches particularly attracted the
attention of the mob, though their superstitious penance must have disgust-
ed a man of the least reflection. One had a gridiron of one and a half foot
long and the same in breadth fastened round his neck, with which he always
walked about, nor did he take it off either when eating, or sleeping. The
other had fastened round that member which decency forbids my mentioning,
a brass ring, and fixed to it was a chain of a fathom in length trailing on the
ground. The links of this chain were as thick as a man’s finger, and the
whole was exhibited in a most scandalous manner.

The pestilential smell occasioned by the numbers of putrifying pearl-fishes,
renders the atmosphere of Condaceby so insufferably offensive when the south
west wind blows, that it sensibly affects the olfactory nerves of any one unaccul-
tomed to such cadaverous smells. This putrefaction generates immense num-
bers of worms, flies, muskitoes, and other vermin; altogether forming a
scene strongly displeasing to the senses.

Those who are not provided with a sufficient stock of money suffer great
hardships; as not only all kinds of provisions are very dear, but even every
drop of good water must be paid for: those who drink the brackish water of
this place are often attacked by sickness. It may easily be conceived what
an effect the extreme heat of the day, the cold of the night, the heavy dews,
and the putrid smell, must have on weak constitutions. It is therefore no
wonder that of those who fall sick, many die, and many more return home with fevers, fluxes, or other equally fatal disorders.

The many disappointments, usually experienced by the lower classes of men in particular, make them often repent of their coming here. They are often ruined, as they risk all they are worth to purchase pearlshells; however, there are many instances of their making a fortune beyond all expectation. A particular circumstance of this kind fell within my own observation: a day-labourer bought three oysters * for a copper fanam (about the value of two pence), and was so fortunate as to find one of the largest pearls, which the fishery produced this season.

The divers appointed for the fishery are not all procured at Ceylon: many come from the coasts of Coromandel and Malabar, each of which has its distinguishing number. About ten o'clock at night a gun is fired as a signal, when they sail from Gondatchey with an easterly or land wind, under the direction of a pilot. If the wind continues fair, they reach the bank before day, and begin diving at sun-rise, which they continue till the west or sea breeze sets in, with which they return. The moment they appear in sight, the colours are hoisted at the flag staff, and in the afternoon they come to an anchor, so that the owners of the boats are thereby enabled to get their cargoes out before night, which may amount to 30,000 oysters, if the divers have been active and successful.

Each boat carries twenty-one men, and five heavy diving-stones for the

* The East India pearl-shell is well known to be the Matrix perlarum (mother of pearl) of Rumphius, or the Mytilus margaritferus of Linneus; consequently, the general term pearl-oyster must be erroneous, however as it has long been in common use, I hope to be excused for continuing it.
use of ten divers, who are called in Tamul, Koolly-kärer; the rest of the crew consists of a tandel, or head boatman, and ten rowers, who assist in lifting up the divers and their shells.

The diving-stone is a piece of coarse granite, a foot long, six inches thick, and of a pyramidal shape rounded at the top and bottom; a large cair rope is put through a hole in the top. Some of the divers use another kind of stone shaped like a half moon, to bind round their belly, so that their feet may be free. At present these are articles of trade at Condatchey. The most common or pyramidal stone, generally weighs about thirty pounds. If a boat has more than five of them, the crew are either corporally punished, or fined.

The diving, both at Ceylon and at Tutucorin, is not attended with so many difficulties as authors imagine. The divers, consisting of different castes and religions (though chiefly of Parrawer* and Musselmans), neither make their bodies smooth with oil, nor do they stop their ears, mouths, or noses with any thing, to prevent the entrance of the salt water. They are ignorant of the utility of diving-bells, bladders, and double flexible pipes. According to the injunctions of the shark-conjuror they use no food while at work, nor till they return on shore and have bathed themselves in fresh water. These Indians accustomed to dive from their earliest infancy, fearlessly descend to the bottom in a depth of from five to ten fathom, in search of treasures. By two cords, a diving-stone and a net are connected with the boat. The diver, putting the toes of his right foot on the cair rope of the diving stone, and those of his left on the net, seizes the two cords with one hand, and shutting his nostrils with the other, plunges into the water. On reach-

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* Fishermen of the Catholic religion.
ing the bottom he hangs the net round his neck, and collects into it the
pearl shells as fast as possible during the time he finds himself able to remain
under water, which usually is about two minutes. He then resumes his
former posture, and making a signal, by pulling the cords, is immediately
lifted into the boat. On emerging from the sea, he discharges a quantity of
water from his mouth and nose, and those who have not been long enured
to diving, frequently discharge some blood; but this does not prevent them
from diving again in their turn. When the first five divers come up and are
respiring, the other five are going down, with the same stones. Each brings
up about one hundred oysters in his net, and if not interrupted by any acci-
dent, may make fifty trips in a forenoon. They and the boat's crew get gen-
erally from the owner, instead of money, a fourth of the quantity which they
bring on shore; but some are paid in cash, according to agreement.

The most skilful divers come from Collefoo on the Coast of Malabar, some
of them are so much exercised in the art, as to be able to perform it with-
out the assistance of the usual weight; and for a handsome reward, will re-
main under water for the space of seven minutes: this I saw performed
by a Caffrey-boy belonging to a citizen at Karical, who had often frequented
the fisheries of these banks. Though Doctor Halley deems this
impossible, daily experience convinces us that by long practice, any man
may bring himself to remain under water above a couple of minutes.
How much the inhabitants of the South sea Islands distinguish themselves
in diving, we learn from several accounts; and who will not be surprized
at the wonderful Sicilian-diver Nicholas, surnamed the Fish †?

† According to Kircher, he fell a victim amongst the Polypi in the gulf of Charybdis, on his plun-
ing for the second time in its dangerous whirl pool, both to satisfy the curiosity of his king Frederic,
and his inclination for wealth. I will not pretend to determine, how far this account has been exaggerated.
Every one of the divers, and even the most expert, entertain a great dread of the sharks; and will not on any account descend until the conjuror has performed his ceremonies. This prejudice is so deeply rooted in their minds, that the government was obliged to keep two such conjurors always in their pay, to remove the fears of the divers. Thirteen of these men were now at the fishery from Ceylon and the Coast, to profit by the superstitious folly of these deluded people. They are called in Tamul, Pillát-kadtár, which signifies one who binds the sharks, and prevents them from doing mischief.

The manner of enchanting consists in a number of prayers learned by heart, that nobody, probably not even the conjuror himself, understands, which he, standing on the shore, continues muttering and grumbling from sunrise until the boats return. During this period they are obliged to abstain from food and sleep, otherwise their prayers would be of no avail; they are however allowed to drink, which privilege they indulge in a high degree, and are frequently so giddy, as to be rendered very unfit for devotion. Some of the conjurors accompany the divers in their boats, which pleases them very much, as they have their protectors near at hand. Nevertheless, I was told, that in one of the preceding fisheries, a diver lost his leg by a shark, and when the head-conjuror was called to an account for the accident, he replied that an old witch had just come from the Coast, who from envy and malice had caused this disaster by a counter-conjuration, which made fruitless his skill, and of which he was informed too late; but he afterwards shewed his superiority by enchanting the poor sharks so effectually, that though they appeared in the midst of the divers, they were unable to open their mouths. During my stay at Condatchey, no accident of this kind happened. If a shark is seen, the divers immediately make a signal, which on perceiving, all the boats return instantly. A diver who trod upon a

D d d 2
hammer-oyster, and was somewhat wounded; thought he was bit by a shark, consequently made the usual signal, which caused many boats to return; for which mistake he was afterwards punished.

The owners of the boats* sometimes sell their oysters, and at other times open them on their own account. In the latter case some put them on mats in a square surrounded with a fence; others dig holes of almost a foot deep, and throw them in till the animal dies, after which they open the shells and take out the pearls with more ease. Even these squares and holes are sold by auction after the fishery is finished, as pearls often remain there mixed with the sand.

In spite of every care, tricks in picking out the pearls from the oysters, can hardly be prevented; in this the natives are extremely dextrous; the following is one mode they put in practice to effect their purpose. When a boat owner employs a number of hired people to collect pearls, he places over them an inspector of his own, in whom he can confide, these hirelings previously agree, that one of them shall play the part of a thief, and bear the punishment, to give his comrades an opportunity of pilfering. If one of the gang happen to meet with a large pearl, he makes a sign to his accomplice who instantly conveys away one of small value, purposely in such a manner as to attract notice. On this the inspector and the rest of the men take the pearl from him; he is then punished and turned out of their company. In the mean time, while he is making a dreadful uproar, the real thief secures the valuable pearl, and afterwards the booty is shared with him, who suffered for them all. Besides tricks like this, the boat owners and pur-

* These are the individuals which farm one, or more boats from the renter, and though they are in possession of them only during the fishery, they are commonly called the owners of the boats.
chislers often lose many of the best pearls, while the dony is returning from the bank; for as long as the animal is alive and untouched, the shells are frequently open near an inch, and if any of them contain a large pearl, it is easily discovered and taken out by means of a small piece of stiff grass, or bit of stick, without hurting the pearl-fish. In this practice they are extremely expert, some of them were discovered whilst I was there, and received their due punishment.

Gmelin asks if the animal of the Mytilus margaritiferus is an Ascidia? See Linn. Sytf. nat. Tom I, P. VI, p. 3350. This induces me to believe, that it has never yet been accurately described: it does not resemble the Ascidia of Linneus, and may perhaps form a new genus. It is fastened to the upper and lower shells by two white flat pieces of muscular substance, which are called by Houttuin *ears, and extend about two inches from the thick part of the body, growing gradually thinner; the extremity of each ear lies loose, and is surrounded by a double brown fringed line. These lie almost a third of an inch from the outer part of the shell, and are continually moved by the animal. Next to these, above and below, are situated two other double fringed moveable substances, like the branchiae of a fish. These ears and fringes are joined to a cylindrical piece of flesh, of the size of a man’s thumb, which is harder and of a more muscular nature than the rest of the body. It lies about the centre of the shells, and is firmly attached to the middle of each; this in fact is that part of the pearl-fish, which serves to open and shut the shells. Where this column is fastened, we find on the flesh deep impressions, and on the shell various nodes of round or oblong forms, like imperfect pearls. Between this part and the hinge (cardo), lies the principal body of the animal, separated

from the rest, and shaped like a bag. The mouth is near the hinge of the shell, enveloped in a veil, and has a double flap, or lip on each side; from thence we observe the throat (aesophagus), descending like a thread to the stomach. Close to the mouth there is a curved brownish tongue, half an inch in length, with an obtuse point; on the concave side of this descends a furrow, which the animal opens and shuts, and probably uses to convey food to its mouth.* Near its middle are two bluish spots, which seem to be the eyes. In a pretty deep hole near the base of the tongue lies the beard (byssus), fastened by two fleshy roots, and consisting of almost one hundred fibres, each an inch long, of a dark green colour, with a metallic lustre; they are undivided, parallel, and flattened. In general the byssus is more than three-quarters of an inch without the cleft (rima), but if the animal is disturbed, it contracts it considerably. The top of each of these threads terminates in a circular gland, or head, like the flygma of many plants. With this byssus they fasten themselves to rocks, corals, and other solid bodies; by it the young pearl-fish cling to the old ones, and with it the animal procures its food, by extending and contracting it at pleasure. Small shell-fish, on which they partly live, are often found clinging to the former. The stomach lies close to the root of the beard, and has on its lower side a protracted, obtuse point. Above the stomach are two small red bodies, like lungs; and from the stomach goes a long channel or gut, which takes a circuit round the muscular

* The depth at which the pearl-fish generally is to be found, hindered me from paying any attention to the locomotive power, which I have not the least doubt it possesses, using for this purpose its tongue. This conjecture is strengthened by the accurate observations made on Muscles by the celebrated Réaumur, in which he found that this body serves them as a leg or arm, to move from one place to another. Though the divers are very ignorant with regard to the economy of the pearl-fish, this changing of habitation has been long since observed by them. They allude, that it alters its abode when disturbed by an enemy, or in search of food. In the former case they say, it commonly descends from the summit of the bank to its declivity.
column abovementioned, and ends in the anus, which lies opposite to the mouth and is covered with a small thin leaf, like a flap. Though the natives pretend to distinguish the sexes, by the appearance of the shell, I could not find any genitalia. The large flat ones, they call males, and those that are thick, concave and vaulted, they call females or Paedo-chippy; but on a close inspection, I could not observe any visible sexual difference.

It is remarkable that some of these animals, are as red as blood, and that the inside of the shell has the same colour, with the usual pearly lustre. Though my servant found a reddish pearl in an oyster of this colour, yet such an event is very rare. The divers attribute this redness to the sickness of the pearl-fish, though it is most probable, that they had it from their first existence. In the shade they will live twenty-four hours, after being taken out of the water. This animal is eaten by the lower classes of Indians either fresh in their carries, or cured by drying, in which state they are exported to the Coast; though I do not think them by any means palatable.

Within a mother of pearl shell I found thirteen Murices undati (vide Chemnitz's new Syft. Cagt. Vol. XI, Tab. 192, f. 1851 and 1852); the largest of which was three quarters of an inch long, but as many of them were putrid and the pearl-fish itself dead, I could not ascertain whether they had crept in as enemies, or were drawn in by the animal itself. At any rate turtles and crabs are inimical to the animals, and a small living crab was found in one of them.

The pearls are only in the softer part of the animal, and never in that firm, muscular column abovementioned: we find them in general near the cardo and on both sides of the mouth." The natives entertain the
fame foolish opinion concerning the formation of the pearl, which the ancients did. They suppose them formed from dew-drops, in connection with sun-beams. A Brahmin informed me that it was recorded in one of his Sanskrit books, that the pearls are formed in the month of May, at the appearance of the Sopatee Star (one of their twenty-seven constellations), when the oysters come up to the surface of the water, to catch the drops of rain. One of the most celebrated conchologists * supposes, that the pearl is formed by the oyster, in order to defend itself from the attacks of the pholades and boreworms. But we may be assured that in this supposition he is mistaken, for although these animals often penetrate the outer layers of the pearl-shell and there occasion hollow nodes, yet on examination it will be found, that they are never able to pierce the firm layer with which the inside of the shell is lined. How can the pearls be formed as a defence against exterior worms, when even on shells that contain them, no worm-holes are to be seen? It is therefore more probable that these worms take up their habitations in the nodes, in order to protect themselves from the attack of an enemy, than that they are capable of preying on an animal, so well defended as the pearl-fish is. It is unnecessary to repeat the various opinions and hypotheses of other modern authors; it is much easier to criticize them, than to substitute in their place a more rational theory. That of Reaumur mentioned in the memoirs of the French Academy for 1712, is the most probable, viz. that the pearls are formed like bezoars and other stones in different animals, and are apparently the effects of a disease. In short, it is very evident that the pearl is formed by an extravasation of a glutinous juice either within the body, or on the surface of the animal: the former case is the most common. Between one and two hundred pearls have been found within one oyster. Such extravasa-

* The Rev. Mr. Chemnitz at Copenhagen.
tions may be caused by heterogenous bodies, such as sand, coming in with the food, which the animal, to prevent disagreeable friction, covers with its glutinous matter, and which as it is successively secreted, forms many regular lamellae, in the manner of the coats of an onion, or like the different strata of bezoars, only much thinner." This is probable, for if we cut through the centre of a pearl, we often find a foreign particle, which ought to be considered as the nucleus, or primary cause of its formation. The loose pearls, may originally have been produced within the body and on their encreafe, may have separated and fallen into the cavity of the shell. Those compact ones, fixed to the shells seem to be produced by a similar extravasation, occasioned by the friction of some roughness on the inside of the shell. These and the pearl-like nodes have a different aspect from the pearls and are of a darker and bluer colour. In one of the former I found a pretty large, true, oval pearl, of a very clear water; while the node itself was of a dark bluish colour. The yellow or gold coloured pearl, is the most esteemed by the natives; some have a light, red, lustre; others are gray or blackish, without any shining appearance and are of no value. Sometimes when the grey lamella of a pearl is taken off, under it is found a beautiful genuine one, but it oftener happens that after having separated the first coat, you find a worthless impure pearl. I tried several of them, taking one lamella of another, and found clear and impure ones by turns, and in an impure pearl I met with one of a very clear water, though in the center of all I found a foreign particle. The largest and most perfect pearl which I saw during my stay at Condatchey, was about the size of a small pistol bullet, though I have been told, since my departure, many others of the same size had been found. The spotted and irregular ones are sold cheap, and are chiefly used by the native physicians as an ingredient in their medicines.
We may judge with greater or lesser probability by the appearance of the pearl-shell, whether they contain pearls or not. Those that have a thick, calcareous crust upon them to which Serpula (sea tubes), Tubularia marini irregulariter intortae, Crista galli, Chama lazarus, Lepas titionabulum, Madrepora, Millipora, Cellipora, Gorgonia, Spongiae, and other Zoophytes are fastened, have arrived at their full growth, and commonly contain the best pearls; but those that appear smooth, contain either none, or small once only.

Were a naturalist to make an excursion for a few months to Manar, the small islands near Jaffna, and the adjacent coast, he would discover many natural curiosities, still buried in obscurity, or that have never been accurately described.

Indeed, no place in the East Indies abounds more with rare shells, than these: for, there they remain undisturbed, by being sheltered from turbulent seas, and the fury of the surf. I will just name a few of them, viz. Tellina foliacea LINN*; Tell. Sprengleri, Areca cuculata†, Areca Noev, Solen anatinus LINN, Olrea Isognomum, Terebellum albidum striatum, Turbo scalaris‡, Bulla volva LINN; Vexillum nigrarum, &c. Amongst the beautiful Cone-shells: Conus Thalassarches anglicanus lullatus §, Amadis Thalassarches, Con. Generalis LINN. C. Capitanus**, C. Miles††, C. Stercor muscarum‡‡, C. rete curum; C. glaucus||, C. cereola, Regia corona, Murus lapideus, Cauda erminea, Societas cordium. There are many other besides those already mentioned, equally valuable and curious.

The great success of the Reverend Doctor John in conchology, when at

Tutucorin, and assisted by Governor Angelbeck, with a boat and divers; and the capital collections made by his agents, whom he afterwards sent there with the necessary instructions and apparatus, may be seen in Chemnitz's elegant Cabinet of Shells in 4to (with illuminated plates), and how many new species of zoophytes he discovered, we learn from another German work by Esper at Erlangen, the third volume of which is nearly finished.
### Astronomical Observations made in the Upper Provinces of Hindustan

**By William Hunter, Esq.**

#### Latitude Observed

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July

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March

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March

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<tr>
<td>Nainkaurdy</td>
<td>27°19'54&quot;</td>
<td>Sirius</td>
<td>27°34'58.5°</td>
<td>clear, do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°20'34&quot;</td>
<td>M. A.</td>
<td>27°20'18°</td>
<td>do. windy, do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'27&quot;</td>
<td>Urs. Min.</td>
<td>27°20'05°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'13&quot;</td>
<td>Can. Maj.</td>
<td>27°20'00°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'02&quot;</td>
<td>Sirius</td>
<td>27°20'00°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°20'54&quot;</td>
<td>Can. Maj.</td>
<td>27°34'58.5°</td>
<td>clear, do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°20'34&quot;</td>
<td>M. A.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'27&quot;</td>
<td>Urs. Min.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'13&quot;</td>
<td>Can. Maj.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'02&quot;</td>
<td>Sirius</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°20'54&quot;</td>
<td>Can. Maj.</td>
<td>27°34'58.5°</td>
<td>clear, do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°20'34&quot;</td>
<td>M. A.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'27&quot;</td>
<td>Urs. Min.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'13&quot;</td>
<td>Can. Maj.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'02&quot;</td>
<td>Sirius</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°20'54&quot;</td>
<td>Can. Maj.</td>
<td>27°34'58.5°</td>
<td>clear, do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°20'34&quot;</td>
<td>M. A.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'27&quot;</td>
<td>Urs. Min.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'13&quot;</td>
<td>Can. Maj.</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Ditto</td>
<td>27°19'02&quot;</td>
<td>Sirius</td>
<td>27°34'58.5°</td>
<td>do. do. do.</td>
</tr>
<tr>
<td>Place</td>
<td>Star or Star</td>
<td>Sun or Star</td>
<td>Latitude</td>
<td>Remarks</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>-------------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>25</td>
<td>&quot;Secundus&quot; (Raw)</td>
<td>S. 74° E.</td>
<td>35° W. &amp; clove.</td>
<td>clear, windy.</td>
</tr>
<tr>
<td>26</td>
<td>Bellah; Mr. Longcroft's house,</td>
<td>S. 35° E.</td>
<td>35° W. &amp; clove.</td>
<td>clear, windy.</td>
</tr>
<tr>
<td>27</td>
<td>Arrawly; Northgate,</td>
<td>S. 35° W.</td>
<td>North gate</td>
<td>clear, calm, flares rather obvious by the moon.</td>
</tr>
<tr>
<td>28</td>
<td>S. 7° W.</td>
<td>S. 35° E.</td>
<td>North gate</td>
<td>clear, calm, flares rather obvious by the moon.</td>
</tr>
<tr>
<td>29</td>
<td>Asopologatur: Col. Ware's bungalow.</td>
<td>S. 35° W.</td>
<td>North gate</td>
<td>clear, calm, flares rather obvious by the moon.</td>
</tr>
<tr>
<td>30</td>
<td>Ditto.</td>
<td>S. 35° E.</td>
<td>North gate</td>
<td>clear, calm, flares rather obvious by the moon.</td>
</tr>
<tr>
<td>31</td>
<td>Ditto.</td>
<td>S. 35° W.</td>
<td>North gate</td>
<td>clear, calm, flares rather obvious by the moon.</td>
</tr>
<tr>
<td>32</td>
<td>Ditto.</td>
<td>S. 35° E.</td>
<td>North gate</td>
<td>clear, calm, flares rather obvious by the moon.</td>
</tr>
<tr>
<td>33</td>
<td>Ditto.</td>
<td>S. 35° W.</td>
<td>North gate</td>
<td>clear, calm, flares rather obvious by the moon.</td>
</tr>
<tr>
<td>Date</td>
<td>Place</td>
<td>Sun or Star</td>
<td>Latitude</td>
<td>Remarks</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------</td>
<td>-------------</td>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td>March</td>
<td>Arawal South gate, distance 4-6 F.</td>
<td>Can. Maj.</td>
<td>28 1 31</td>
<td>clear, calm</td>
</tr>
<tr>
<td></td>
<td>Ditto</td>
<td>Can. Maj.</td>
<td>28 1 43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ditto</td>
<td>Navis</td>
<td>28 2 36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ditto</td>
<td>Hydraæ</td>
<td>28 1 48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alygunge E gate, distance 1-3 Fs.</td>
<td>Navis</td>
<td>27 30 27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ditto</td>
<td>Hydraæ</td>
<td>27 30 54</td>
<td>clear, windy</td>
</tr>
<tr>
<td></td>
<td>Ditto</td>
<td>Urs. Maj.</td>
<td>27 29 9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Betourah N 62 E 1 mile.</td>
<td>Urs. Maj.</td>
<td>29 3</td>
<td>do. do.</td>
</tr>
<tr>
<td></td>
<td>Right-hand bank of Ganges.</td>
<td>Urs. Min.</td>
<td>26 1 29</td>
<td>clear, moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Draconis</td>
<td>26 1 23</td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>Yacoot Gunge (small village, left hand bank of Ganges)</td>
<td></td>
<td>26 1 51</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shazadpoor S 22 W about 2 miles</td>
<td></td>
<td>25 40 2</td>
<td>clear, moderate</td>
</tr>
<tr>
<td></td>
<td>Aliath</td>
<td>Aliath</td>
<td>25 24 54</td>
<td>hazy, calm</td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>a</td>
<td>26 25 54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>a</td>
<td>26 25 14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>a</td>
<td>25 17 47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>a</td>
<td>25 17 31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mudura, near Litchager.</td>
<td>Draconis</td>
<td>25 16 6</td>
<td>clear, moderate</td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>a</td>
<td>25 16 42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>a</td>
<td>25 16 42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>a</td>
<td>25 16 42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mirzapore E ½ mile.</td>
<td>Urs. Min.</td>
<td>25 9 43</td>
<td></td>
</tr>
</tbody>
</table>
### Eclipses of Jupiter's Satellites observed with Dollond's Achromatic Telescope, magnifying 80 Times.

<table>
<thead>
<tr>
<th>Apparent Time</th>
<th>Sat.</th>
<th>Place of Observation</th>
<th>Longitude</th>
<th>Weather</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1794</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan.</td>
<td>24</td>
<td>17 28 44</td>
<td>Tandah</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>4</td>
<td>15 54 8</td>
<td>Lucknow (Mr. Ott's House)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>14 59 15</td>
<td>Meinpooor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>29</td>
<td>12 41 39</td>
<td>Futtehurg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>5</td>
<td>14 44 37</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>16 39 16</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>3</td>
<td>14 19 21</td>
<td>Kanhpoor (Mr. Yeld's Bungalow)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1795</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>23</td>
<td>17 9 31</td>
<td>Camp near Aliaagur</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>5 41 42</td>
<td>Dhaly; Sadler Jung's House</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>16 13 43</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>13 58 6</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>14 29 15</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>14 48 44</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>4</td>
<td>15 55 0</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>7 23 12</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>7 29 12</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>11</td>
<td>10 38 40</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov.</td>
<td>15</td>
<td>6 42 30</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec.</td>
<td>5</td>
<td>23 12 2</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>29 12 12</td>
<td>Ditto</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The brightness of Jupiter made the Satellite indistinct.

The planet was clouded, a few seconds, about the time of immersion.

The Satellite certainly visible till this time; as the sky was not very clear, the immersion may have been some seconds later.

As the Telescope was shaken by the wind, the emergence was probably a little earlier.

The observation very distinct; but there is some uncertainty in the time, from an irregularity of the watch this day. It had been losing at the rate of 8s a day, mean time; but between the 4th at 740, and the 5th at the same hour, lost 259, from being wound up 5 hours later than usual, i.e. at 5 p.m. on the 4th instead of noon. I observed again at 44 p.m., and found the loss in 9 hours apparent Time to be 40. Allowing this rate from 4 a.m. to 74, the loss in that Time will be 19, giving Watch flow for apparent Time 21 18 30 at the time of observation, and this is the quantity here allowed.

Planet rather near the Horizon.
The Variation of the Compass, observed by the Sun's Azimuth.

N. B. Both the Altitudes and Azimuth were taken with the Theodolite.

<table>
<thead>
<tr>
<th>Year</th>
<th>Place</th>
<th>A. or P.M.</th>
<th>Altitude</th>
<th>Azimuth</th>
<th>Variation</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1792</td>
<td>Feb. 23</td>
<td>Baad</td>
<td>P.</td>
<td>22 30 00</td>
<td>16 2 00</td>
<td>18 00 E</td>
</tr>
<tr>
<td></td>
<td>May 1</td>
<td>Oujein</td>
<td>A.</td>
<td>41 25 53</td>
<td>78 8 00</td>
<td>0 2 00 E</td>
</tr>
<tr>
<td>1796</td>
<td>April 9</td>
<td>Futtebgurb</td>
<td>P.</td>
<td>1 20 00</td>
<td>82 20 00</td>
<td>1 37 00 E</td>
</tr>
<tr>
<td></td>
<td>April 12</td>
<td>Ditto</td>
<td>A.</td>
<td>22 30 51</td>
<td>90 19 00</td>
<td>1 47 27 E</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A.</td>
<td>23 20 57</td>
<td>89 52 00</td>
<td></td>
</tr>
</tbody>
</table>

1796. April 15th, at Futtebgurb; observed the following distances of the Moon from Aldebaran and Spica.

<table>
<thead>
<tr>
<th>Time by Watch</th>
<th>Distant Moon and Aldebaran nearest Limb</th>
<th>Time by Watch</th>
<th>Distant Moon and Spica farthest Limb</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. M. S.</td>
<td>°</td>
<td>H. M. S.</td>
<td>°</td>
</tr>
<tr>
<td>6 43 22</td>
<td>61 10 15</td>
<td>8 1 58</td>
<td>72 54 30</td>
</tr>
<tr>
<td>50 20</td>
<td>13 00</td>
<td>5 10</td>
<td>52 15</td>
</tr>
<tr>
<td>57 05</td>
<td>15 15</td>
<td>8 46</td>
<td>51 15</td>
</tr>
<tr>
<td>7 3 45</td>
<td>18 00</td>
<td>12 2</td>
<td>49 45</td>
</tr>
<tr>
<td>9 05</td>
<td>19 45</td>
<td>15 49</td>
<td>47 30</td>
</tr>
<tr>
<td>6 56 43</td>
<td>61 15 15</td>
<td>8 8 45</td>
<td>72 51 03</td>
</tr>
</tbody>
</table>

Also, the following Altitudes, for rectifying the Watch.

<table>
<thead>
<tr>
<th>Time by Watch</th>
<th>Altitude Aldebaran</th>
<th>Time by Watch</th>
<th>Altitude Spica</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 36 58</td>
<td>24 39 45 double angle</td>
<td>7 46 3</td>
<td>63 49 00 double angle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>48 33</td>
<td>64 36 30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 9</td>
<td>65 34 15</td>
</tr>
</tbody>
</table>

Error of the Sextant " 2' 15" Subtractive

f f 2
Astronomical Observations made in the

Results.

H. M. S.

Watch Slow. By Aldebaran 00 46 49
By Spica 42

46

47

Mean, flow for apparent Time 00 46 46

<table>
<thead>
<tr>
<th>Apparent Time</th>
<th>Apparent Altitude</th>
<th>True diff. center Moon and Star</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moon.</td>
<td>Star.</td>
<td></td>
</tr>
<tr>
<td>1st Set Aldebaran</td>
<td>7 43 29</td>
<td>78 49 41 21</td>
<td>7 96 38 26</td>
</tr>
<tr>
<td>2nd Set, Spica</td>
<td>8 55 31 64</td>
<td>40 48 35 54</td>
<td>72 54 14</td>
</tr>
</tbody>
</table>

Longitude of Futtehgar by mean of both sets 79 54 45
NOTE.

RESPECTING THE INSECT DESCRIBED IN PAGE 215.

THIS insect is the *Meloe Cicborii* of *Linnaeus*. The following extract from a late publication will show how much the gentlemen of the faculty are indebted to Captain *Hardwicke*, for having pointed out to them so valuable an addition to their *Materia Medica* in this country.

"I shall only observe, that the *Papilio &c.* are here extremely common, as is likewise the *Meloe Cicborii* *Lin.* towards which Doctor *Manni* has endeavoured to direct the attention of his countrymen. It remains from *May to August*, and especially during *June* and *July*, in astonishing quantities, not only upon the *Cicborium*, but also upon the *Cerealis*, *Carduns* and *Cynora Cardunculus*. The common people have long used the liquor that distils from the insect, when the head is torn off, for the purpose of extirpating warts; and Mr. *Casimir Sanso* has often employed it in lieu of the common blistering drug: but to render it more generally useful, Doctor *Manni* has made a variety of experiments, and found that forty-five grains of the *Meloe*, and fifteen grains of *Euphorbium*, fermented with flower and common vinegar, and well mixed up, made a most excellent blistering plaister. The proportions must be increased, or diminished, according to the age, sex and constitution of the person, but the above mentioned quantity usually produces a proper effect in thirteen or fourteen hours. These insects are collected morning and evening, and put into a covered vessel, where they are kept until they are dead, when they are sprinkled with strong vinegar, and exposed to the hot sun, until they be-
"come perfectly dry; after which they are put into glass bottles, and carefully kept from humidity."

*Travels to Naples, by Charles Ulysses, of Salis Morshchins.*—Translated from the German, by Anthony Aufrere, Esq.—London 1795, page 148.
NOTE.

REFERING TO PAGE 294 OF THIS VOLUME.

HAVING lately passed Benares, I took that opportunity of again examining the Observatory, and ascertained the circle which stands on the elevated terrace to the East, (respecting the position of which I formerly spoke with some degree of hesitation) to be situated in a plane parallel to the Equator.

W. HUNTER.

September 28, 1797.
CONTENTS OF THE FIFTH VOLUME.

I. Historical remarks on the Coast of Malabar, with some description of its Inhabitants. 1

II. An account of two Fakereers, with their Portraits. 37

III. Enumeration of Indian Classics. 53

IV. Some account of the Sculptures at Mahabaliboorum, usually called the Seven Pagodas. 69

V. Account of the Hindooance Horometry. 81

VI. On Indian Weights and Measures. 91

VII. On the city of Pegue, and the temple of Shoemadoo Praw. 111

VIII. Description of a Tree, called by the Burmas, Launzan. 123

IX. Specimen of the language of the People inhabiting the hills in the vicinity of Bhauulgapore. 127

X. An account of the discovery of two Urns, in the vicinity of Benares. 131

XI. Account of some ancient Inscriptions. 135

XII. Observations on the Alphabetical System of the Language of Awá and Rác'baín. 143

XIII. Some account of the Elastic Gum Vine of Prince of Wales's island, and of experiments made on the milky juice which it produces; with hints respecting the useful purposes to which it may be applied. 157

XIV. A Botanical description of Urceola elastica, or Caut-choue Vine of Sumatra and Pulo-Penang. 167

XV. Some account of the astronomical labours of Jayasinha, Rajah of Ambbere, or Jayanagar. 177
XVI. Description of a species of Meloë, an insect of the 1st or Coleopterous order in the Linnean system, found in all parts of Bengal, Bhebar, and Oude: and possessing all the properties of the Spanish blistering fly, or Meloë vesicatorius. 213

XVII. A comparative Vocabulary of some of the languages spoken in the Burma empire. 225

XVIII. On the Chronology of the Hindus. 241

XIX. Remarks on the names of the Cabirian Deities, and on some words used in the mysteries of Eleusis. 297

XX. Account of a Pagoda at Perwuttum. 303

XXI. Remarks on the principal eras and dates of the ancient Hindus. 315

XXII. On the religious ceremonies of the Hindus, and of the Brâhmins especially. 345

XXIII. The Rudbiradhyayâ, or sanguinary chapter, translated from Câlicâ-puran. 371

XXIV. An account of the Pearl-fishery in the gulph of Manâr, in March and April 1797. 391

XXV. Astronomical observations made in the upper provinces of Hindustan. 413
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CORRECTIONS.

Page.  Line.  
---  8  --

133  2  -- for गुरवः नवीनमेव गुरोः नवीनानमेव

---  167  2  -- Urecola elasica.

---  168  21 & 24  -- The same correction as above.

---  177  5  -- After countries put a comma.

---  179  10  -- Right hand column आक्रमण begins the 2d paragraph.

---  180  6  -- بلى begins 3d paragraph.

---  181  2  -- for خال begins 5th paragraph.

---  182  8  -- for بد renov begins 6th paragraph.

---  182  5  -- ي برجند begins 7th paragraph.

---  184  16  -- Left hand column for HIPPARCHUS read HIPPARCUS.

---  186  9  -- begins 8th paragraph.

---  188  penult.  

---  192  23  -- numbers number

---  201  15  -- whereas and

---  204  11  -- described described

---  209  14  -- a powerful the powerful

---  213  last line  -- parallel

---  214  17  -- dele the comma after Hibiscus,

---  248  last line  -- for SWAYAMBHWA, read SWAYAMBHUVA,
for Nara'hí, read Na'bhi.
left hand column—the same correction as above.
for more little read little more

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<thead>
<tr>
<th>Page</th>
<th>Line</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>left line</td>
<td>— Sandracuptas,</td>
</tr>
<tr>
<td>251</td>
<td>5</td>
<td>Chandra-gupta,</td>
</tr>
<tr>
<td>258</td>
<td>8</td>
<td>Racshaca,</td>
</tr>
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<td>262</td>
<td>—</td>
<td>Saraseni,</td>
</tr>
<tr>
<td>268</td>
<td>21</td>
<td>Uccentus,</td>
</tr>
<tr>
<td>270</td>
<td>8</td>
<td>Nunnus</td>
</tr>
<tr>
<td>275</td>
<td>25</td>
<td>Tavernier parts,</td>
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<td>276</td>
<td>—</td>
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<td>277</td>
<td>8</td>
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<td>2</td>
<td>XX.</td>
</tr>
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<td>297</td>
<td>13</td>
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<tr>
<td>413</td>
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There are some other oversights, or errors of the press, both in punctuation and orthography, which the reader is desired to correct.