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I.

HISTORICAL REMARKS

ON THE

COAST OF MALABAR,

WITH SOME DESCRIPTION OF THE MANNERS OF ITS INHABITANTS.

BY JONATHAN DUNCAN, Esq.

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 remorse for the blood he had so profusely shed in overcoming the *Rajahs* of the *Khetry* tribe, applied to *VARUNA*, the god of the ocean, to supply him with a tract of ground to bestow on the *Bráhmens*; and *VARUNA* having accordingly withdrawn his waters from the *Gowkern*, (a hill in the vicinity of *Man-galore*) to *Cape Comorin*, this strip of territory has from its situation, as lying along the foot of the *Sukbein* (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

A



Maleam; whence are also probably its common names of *Mulievar*, and *Mala-bar*; all which *PURESAM* is firmly believed by its native *Hindu* inhabitants to have parcelled out among different tribes of *Bráhmens*, 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 *Kermbhoomy*, 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 *PURESAM* 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 *PURESAM* 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 *Malyalum* was according to the *Keral Oodputtee* afterwards divided into the four following *Tookrees* or divisions:

1st. FROM the *Gowkern*, already mentioned, to the *Perumbura* river, was called the *Tooroo* or *Turu Rauje*.

* In a manuscript account of *Malabar* that I have seen, and which is ascribed to a bishop of *Virapoli*, (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 foot of the *Sukbien*, 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 *Moshek Rauje*.

3d. FROM *Poodum* or *Poodputtun*, to the limits of *Kunety*, was called the *Kerul* or *Keril Rauje*; and as the principal seat of the ancient 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 *Kunety* to *Kunea Koomary* or *Cape Comorin*, was called the *Koop Rauje*, and these four grand divisions were parcelled out into a greater number of *Naadhs*, (pronounced *Nqars*, and meaning districts or countries) and of *Kbunds*, or subdivisions under the latter denomination.

IV. THE proportion of the produce of their lands that the *Brábmens* are stated to have originally assigned for the support of government amounted to only one sixth share; but in the same book of *Kerul Oodputtee* 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 *Brábmens* 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 *Brábmens* landholders had recourse to foreign assistance; which terminated, either by conquest or convention, in their receiving, to rule over them, a *Permal*, or chief governor, from the prince of the neighbouring country of *Chaldesth*, (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 *Chaldesb*; 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 landholders 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 *Mabommedanism*, 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.

VI. 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)

mentions, that after this defeat of KISHEN RAO's army, SHUNKER, a supposed son of MAHADEO, (the principal of the *Hindu* gods,) regulated the castes in *Malabar*, and restricted the various subdivisions of the four general tribes to their particular duties, down to the lowest orders of the fourth, consisting of the artificers, tillers of the soil, and inhabitants of the woods, whom he declared it unlawful for the other castes to approach; in so much, that the bare meeting with them on the road entailed pollution for which the party of the superior caste is required to bathe.

* Of the several castes in *Malabar*, and their distinctions, I received the following summary account from the Rajah of *Cortinad*.

1st. *Namboory Bráhmens*; 2d. *Nayrs*, each of various denominations, 3d. *Teer*; 4th. *Malere*; 5th. *Polere*; (called he says *Dera* in *Hindostan*.) The *Teers* are cultivators of the ground, but free men. The *Maleres* are musicians and conjurors, and also free men. The *Poleres* or *Polears*, are bondsmen attached to the soil in the lower part of *Malabar*, in like manner as are the *Puniers* above the *Ghauts*. The proper name of the *Ghaut* hills is, the Rajah adds, *Sukbien Purbut*, or hills of *Sukbien*, with the guttural *kb* pronounced

N. B. *Pouliats* and *Poulicbis*, 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 *Cortinad*'s explanation) as under specified.

1st. A *Nayr* may approach, but must not touch, a *Namboory Bráhmén*.

A *Teer* is to remain thirty-six steps off from one.

A *Malere* three or four steps farther.

A *Polere* ninety-six steps.

2d. A *Teer* is to remain twelve steps distant from a *Nayr*.

A *Malere* three or four steps farther.

A *Polere* ninety-six steps.

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

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

If a *Polere* wishes to speak to a *Bráhmén*, or *Nayr*, or *Teer*, or *Malere*, he must stand at the above prescribed distance and cry aloud to them.

If a *Polere* touch a *Bráhmén*, the latter must make expiation by immediately bathing and reading much of the divine books, and changing his *Bráhmanical* thread.

If a *Polere* touch a *Nayr* he has only to bathe, and so of the other castes.

VII. It is the received tradition among the *Malabars*, that SHERMANOO PERMALOO was, just at the completion of the distribution of the *Malabar* country, applied to for some provision by an *Erary*, or person of the cow-herd cast; who, with his brother had, during the preceding warfare, came from their native town of *Poondera* (on the banks of the *Cavery* near *Errode*) 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 authorised 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 SAMOORY 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 SHEO RAM or SHERMANOO PERMALOO'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 comprized in the wars carried on during this long period by the SAMOORY or ZAMORIN 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 *Chaldesth* 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 *Mulyalum* or *Maleyam*.

X. DURING this period, also, the *Mahomedan* religion made great progress in *Malabar*, as well from the zeal of its more early profelytes 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 *Mabomedans*, 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 Colonel) *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 *Mabomedan* 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 *Mabomedan* Princes of *India* and the *Zamorin* against the *Portuguese*, 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; relative to both which articles I shall here insert some of the information ac-

quired by this *Mahomedan* 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 CHUCKERWUTTY) 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 PERMAL, 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*; CHUCKERWUTTY (whom MAHOMMED had dignified with the title of *Sultaun TAUJE UL HERID*) is mentioned in ZEIRREDDIEN'S

* THIS footstep of ADAM is under the name of SREEPUD, or the "holy foot", equally revered and resorted to by the *Hindus*, as appears by the relation of a journey made to visit it by a fakcer of this last mentioned persuasion, called PRAUN POORY, 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 *Oordh-bahn*, 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* fakeers' propensity to travelling I may here add that I saw a few months ago, at *Benares*, one of them who had travelled as far as *Pekin*, which he described under the name of *Pechin*; and had passes 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 *Mahomedan* æra.

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 *Colafrican* Rajah to the north, the SAMOORY or ZAMORIN in the centre; and farther south, a Prince who ruled from the town of *Kolum* 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."

2^d. "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 *Cochin*; 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 *Brábmens*, (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-

“ cepts, and are men of study and piety *. However among the *Brábmens*,
 “ 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 casts.”

5th. “ BUT the *Nayrs* practise not marriage, except as far as may be im-
 “ plied 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 *Brábmens*, 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 main-
 “ tain celibacy do nevertheless cohabit with *Nayr* women, without mar-
 “ riage, 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 *Brábmens*) 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 *Toorcherie*, 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 casts, such as carpenters, ironsmiths, and others, have
 “ fallen into the imitation of their superiors, the *Nayrs*, with this differ-
 “ ence however, that the joint-concern in a female is among these last limit-
 “ ed to the brethren and male relations by blood *, to the end, that no ali-
 “ enation may take place in the course of the succession and the right of in-
 “ heritance.”

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 *Nayr* 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 cast, unless the paramour be of a lower tribe than her own.

- “ Alone in lewdness, riotous and free,
- “ No spousal rights withhold, and no degree.
- “ In unendear'd embraces free they blend;
- “ Yet but the husband's kindred may ascend
- “ The nuptial couch; Alas! too blest, they know,
- “ Nor jealousy's suspense, nor burning woe;
- “ The bitter drops which oft from dear affection flow.

MICKLE'S CAMOENS: Book VII.

This custom prevails among the five low casts of *Teer*, of *Agaree* or Carpenters, *Muzalie* or Brass-founders, *Fattam* or Goldsmiths, and *Kollen Peremcollen* 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 casts, 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 *Bráhmens* this
 “modesty and decorum are attended to.”

10th. “AMONG the *Nayrs*, 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 rulership 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 *Paulghat*, 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 *Rauje* or lordship of *Vittulnaad* 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.

13**th**. “THEY have moreover subjected themselves to a multitude of inconveniencies, or difficult observances; which they do nevertheless stedfastly 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 possess the *Islam** or else become a *Jogui*, or a *Fringy*, i. e. a *Christian*.

14**th**. “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.

15**th**. “THOSE who are entitled to wear the *Zunaar* or *Brámenical* 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 *Mopilla Mussulmans*, being now greater in the *Calicut* districts than the *Hindus* and *Nayrs*; 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 *Namboory Bráhmens*, who thus disposed of their own women without incurring any disparagement of cast, to the *Mopillas*; which rule holds also good in respect to other females, as intimated in the second note, page 13, and in the sequel of ZETREDDIEN's text.

“ of *Malabar*, and among these *Zunaar* wearers there are also the higher,
 “ middle and lower, of the first are the *Bráhmens*, who are above all others
 “ the most respectable, and these also have among themselves the same distinc-
 “ tions of first, second, and third degrees.”

16th. “ THE *Nayrs* of *Malabar* follow the martial profession* and ex-
 “ ceed both in numbers and dignity; having sundry degrees among them-
 “ selves, 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 *Poliars* (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†.

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

CAMOENS, 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 stuck 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 commission 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 *Chrif-*
 " *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 *Brâhmen* fornicate 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 increas-
 " 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

* I HAVE allowed this paragraph of ZEIRREDDIEN's text to stand inserted in the order of his own enumeration, because it is connected with the one that follows; though the custom it refers to seems so unreasonable 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 ZEIRREDDIEN'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 *Rajahs*, 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 *Portuguese*, the first under *VASCO DE GAMA*, in the 904th year of the *Higeree* (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 accounts 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 *Mahomedan* traders, a commercial jealousy immediately sprang 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 *Portuguese* had sailed, on their breach with the former prince,) and his *European* allies, on the other; the former being afterwards reinforced from the *Arabian* gulph by a large fleet, fitted out under the command of *AMEER HOSAIN*, 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

* The 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 *Coulum* (by us called *Quiloan*) about twenty-four *Cadums* (*Malabar* leagues), or eighty *British* miles south of *Cochin*: it was formerly very famous as the emporium of the coast, and founded in the 825th 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 re-
 " viled 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 occa-
 " sions 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 se-

“verest tasks, 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
 “*Seyyuds*, 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.”

21. “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 *Mabommedans* residing principally on the sea coasts, it was
 “customary for the newly arrived *Europeans* (who used to resort annually to
 “*India* at the appointed seasons,) deridingly 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 *Mabommedan* 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-
 “rued to him from their traffick; 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 *Bejapoor* kings in *Decan*; nor could any of the ships of the *Mabommedans* sail in safety to either gulph, without being furnished with *Christian* passes.

XIX. IN the *Hejira* year 931, answering to A. D. 1524-5, the *Mabommedans* 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 *Sbaliaut*; 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 ZEIR-REDDIEN, with having afterwards slain) the cession of the fortrefs of *Diu*, of which they still retain possession.

XXII. THE author ZEIRREDDIEN places within the following year the *Portuguese* building a fort at *Cranganore*, and their successful resistance at *Diu* to an expedition fitted out against them from *Egypt*, by command of the *Ottoman* emperor SOLYMAN, whose *Bajsha* 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 *Mahomedan* chief of *Cananore*, and to whom belonged also the *Laccadivean* islands, which on this occasion ZEIRREDDIEN 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 *Mahomedans* 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 *Concan*, &c. and they became rulers in all the towns and cities, and swarmed there-

* 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 *Bajsha* or monarch of which is said to be to this day jealous of them on that account.

“ in, and reared fortresses in *Hurmuz (Ormus,)* *Saket,* and *Diu Mebel,* and
 “ in *Sumatra,* and at *Malacca,* and *Milkoop;* and at *Mylatoor,* and *Nagputtun,*
 “ 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 CÆSAR FREDERICKE, having been on the *Ma-*
labar coast, about the time that ZEIRREDDIEN's history closes; it may tend
 to contrast the preceding state of facts according to our *Mahomedan* author's
 view of them to subjoin his *Christian* cotemporary's account of some of the
 same circumstances.

XXV. TREATING of *Barcelore,* a town on the northern part of the *Ma-*
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 naugh-
 “ ty and malicious people; always having delight to be in war with the
 “ *Portugals,* and when they are in peace, it is for their interest to let their
 “ merchandize 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

“ 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 nest and resting for stranger-thieves, and those be called *Moors* of
 “ *Carpofa*, 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 *Colastry* or *Cberical* 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 Nair*, 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 *Cberical*, 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 *Cottiote* 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 *Tellicherry* mediated a peace between the kings of *Canara* and *Colastria*; 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 *Tellicherry*; 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 antient *Colastrian* 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 *Colastria*; 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 *Cberical*, 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 *Cberical* 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 *Bráhmén* 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 *Cberical*, 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-

* Or the term *Mabapilla* or *Mapilla* I have heard many derivations, one of which was given me by a Cauzy of their own tribe who scrupled not (whether jocularly 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 casts, 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 *Syrian 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 *Maba* or *Mabai* and *Pilla*, though not, in the aforesaid Cauzy'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 *Mabai*, whilst *Pilla* 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 *Mabai* or *Mocha*."

stant 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 casts; 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 *sagwan* 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 *Kbetrie* 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 *Erery* (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 *Nellampoor Mella* in the talook of *Ernaar* or *Ernaad*.

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 Bráhmens* (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 *Kolgum* or *Kollum*, 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 stiled the first, and the others, or the heirs in expectancy, are (as for instance in the SAMOORY'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 *Kolgum* 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-

* NAMBOORY or *Namboodirie* is said by some (according to the explanation furnished to me by Lieut. MACLEAN) to be a corruption of *Nambie*, applicable to those whose privilege it is to attend to and perform the religious service in the temples; whilst others assert that the name is derived from *Nama* and *Poo-gia*, or *Poogikanna*; to invoke, pray, or perform religious ceremonies.

NAMBADIE or *Nambidie*, a class of inferior *Bráhmens*, said to have become degraded from their ancestor, a *Namboorie*, having been employed by SHERMANOO PERMALOO, and the *Malabarians*, to cut off by treachery (which he effected) CHORA, a former *Percimal* or governor, whom KISSEN RAO had sent back with an army to supercede SHERMANOO, as intimated in Section VII, and besides these there are above a dozen more subdivisions of the *Bráhmenical* 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 SAMOORY or 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 un-
 " cle, 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 set-
 " tled. 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 MOOKUT 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 HY-
 " DER's men to the late Rajah, and informed him of what had passed; where-
 " upon 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

* THIS is to be understood with the exception of *Paulghat*, 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 *Bráhmens*, he would, on their swearing by
 “ their *Bráhmenical* 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 *Toorsbery*, the Rajah my uncle went with SREE
 “ NEWAUS RAO and MOOKUT RAO, to meet HYDER, who advanced to
 “ *Coorunnar*, 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 *Ghauts* a second time, with an army, into the northern parts, and sending another, under SREE NEWAUS RAO, through *Paulghaut*, 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 siege of *Tellicherry* 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 *Mahomedan*, 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 *Bráhmens*, and to render them examples to the other classes by enforcing circumcision on them, and compelling them to eat beef; and accordingly many *Bráhmens* were seized in or about the month of *July* 1788; and were thus forcibly deprived of their casts: whilst others sought for shelter with the Rajahs of the SAMOORY'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 PEREPNAAD (one of the southern talooks), and of TICHEERA TEROOPAR, (a principal *Nayr* of *Nelembhoor*, in the same southern division of that country,) together with some other persons whom he had for various causes carried up with him into *Coimbeetoor*; 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 RUVÉE 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 *Bráhmens* (including their wives and families) escaped from *July* to *November* 1788, from the *Calicut* districts into *Travancore*; besides which, resenting these oppressions by TIPPŌO, on those of his sect and religion, RUVÉE VURMA proceeded to open hostilities with the officers of TIPPŌO's government, and proving victorious, and being assisted by the *Nelembboor* and *Perrepnaad* 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 TIPPŌO 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 TIPPŌO, 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 cast; one affecting instance of which is related of the Rajah of *Cheerical* who finding that he was also to be circumcised, attempted to escape, and being pursued by TIPPŌO'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 survival; 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 *TIPPOO* 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 cession 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 *Mahomedans*, 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 *Mahomedans*, 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 *Hinduee*) PRAUN POORY, a *Sunyaffy*, 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 *Khetry* or *Raujepoot* tribe. . At nine years of age he secretly withdrew from his father's house, and proceeded to the city of *Bethour* 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 *Debli* to *Lucknow*, and two or three years before the sack of *Mat'hura* 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 *Allahabad* to the great annual meeting of Pilgrims; where hearing of the merits attached to what he describes as the eighteen different kinds of *Tupifya*, 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 *Ramisher*, opposite to *Ceylon*, taking his route by *Kalpi*, *Oujeine*, *Burhanpoor*, *Aurangabad*, 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 Princess was then the Sovereign; whence he went on to *Seringapatnam* then in the possession of its Hindu Princes, whom he names NUND RAUJE and DEO RAUJE; leaving which, he descended through the *Tamerchery* pass into *Malabar* and arrived at *Cochin*, whence he crossed the Peninsula through a desert tract of country to *Ramisher*, after visiting which, he returned up the *Coromandel Coast* to the Temple of JAGGERNAUTH 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 *Jaggernaut* our traveller returned by nearly the same route to *Ramisser*, whence he passed over into *Silán* or *Ceylon*, and proceeded to its capital, which some he observes call *Kbundi* (*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 worshipping which he returned by the same route.

V. FROM *Ceylon* this *Sunyassy* passed over among the *Malays*, whom he describes as being *Mussulmans*; 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 *Cochin* 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 *Dwáradá*, *Tatta Hingulaj* or *Henglaz*, and through *Multan*, beyond the *Attock*; whence he changed his route to the Eastward and arrived at *Hurdewar* 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 *Gbizni*, 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 adviseable 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 *Mush-bed*, to *Astrabad*, on the borders of the *Caspian* sea; and to the *Maba* or *Buree*, i. e. larger, *Jowalla Mookhi*, or *Juâla Mûchi*, 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 *Sanfrit* "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 Mookhi*, 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 ancient 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 *Shamaki*, *Sherwaun*, *Tubrez*, *Hamadan*, and *Ispahan*; in which capital he sojourned during forty days, and then passed on to *Shirauz*; 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 *Aboosheher*, on the southern coast of *Persia*, he reached the isle of *Kbarek*, 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 *Bufforah* 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 *Mokha*, where also he

found a number of *Hindus*, and he thence returned into *India*, landing on its west coast in the port of *Sanyanpoor*, situated I suppose towards or in the *Cutch* or *Sinde* countries.

XIV. FROM this port he journeyed to *Balkh* (where he also mentions *Hindus* being settled) and to *Bokhara*, at which he notices having viewed the famous *Dergah* of KHAJA CHESTEE, and the loftiest minar or spire he has ever seen. From this place, after twelve days journey he arrived at *Samarkand*, 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 *Budukhsan*, in the hills around which rubies are he says found, whence he travelled into *Cashmir*, and from that passing over the hills towards *Hinduстан*, he came to the *Gungowtri*, or “descent of the *Ganges*,” where there is he observes a statue of *Baghiratha*; at which place the river may he says be leaped over: and he farther notices, that thirty cofs to the southward of *Gungowtri* 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 now, he observes the four rivers of *Naugmutty*, *Bishenmutty*, *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 *Thibet*, crossing in his way to it the *Cofa* river by a bridge composed of iron chains, and observing, that at *Lessee*, 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 *Khaffa*, 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 *Labaffa*, 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 *Mánasāróvara*) 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
 " *Lunkadb* or *Lunkadeb*. From the *Maun Surwur*-part issues one river, and
 " from the *Lunkadb*-part two rivers. The first is called *Bráhmia*, where
 " PURESRAM making *Tupisya*, the *Brahmaputra* issued out, and took
 " its course to the eastward; and of the two streams that issue from the *Lun-*
 " *kadb*, one is called the *Surju* being the same which flows by *Ayóddyà* or

“ *Oude*; and the other is called *Sutroodra* (or in the *Puranas* *Sbutudru*,
 “ and vulgarly the *Sutluje*) which flows into the *Punjaub* country; and two
 “ days journey west from the *Maun Surzur*, 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 *Thibetians*. Pro-
 “ ceeding from *Ladac*, seven days journey to the southward there is a
 “ mountain called *Cailasa Cungri* (*Cungur* meaning a peak) which is exceed-
 “ ingly lofty, and on its summit there is a *Bhowjputr* or *Bhoorjputr* tree,
 “ from the root of which spouts or gushes a small stream, which the peo-
 “ ple say is the source of the *Ganges*, and that it comes from *Vaicont’ha* or
 “ heaven, as is also related in the *Puranas*, although this source appears
 “ to the sight to flow from the spot where grows this *Bhowjputr* 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 *Yagui* somehow pene-
 “ trated; who having immersed his little finger in it, it became petrified.
 “ At four days journey from *Cailasa Cungri* is a mountain called *Brabma-*
 “ *danda* or BRAHMA’S staff, in which is the source of the *Aliknundra Ganga*;
 “ and five or six days journey to the south of that are situated on the moun-
 “ tains the temples dedicated to CEDARA, or KEDARNAUTH, and BUDRA-
 “ NAUTH; and from these hills flow the streams called the *Kedar Ganga*
 “ and *Sheo Ganga*; the confluxes of which, as well as of the *Aliknundra*,
 “ with the main stream of the *Ganges*, take place near *Kernpraug*, and *Deo-*
 “ *praug*, in the vicinity of *Serinagur*; whence they flow on in a united
 “ stream which issues into the plains of *Hindustan* at the *Hurdwar*.”

XVII. PRAUN POORY went back from this part of the country into
Nepaul and *Thibet*, 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 SING, 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 *Affapoor*, 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 *Nepaul*.

XVIII. THE name of the other *Hindu* fakeer or *Brahmchary*, (whose picture reclining, in his ordinary position, on his bed of iron-spikes, accompanies this) is PERKASANUND, and he assumes the title or epithet of PURUM 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 *August* 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 *Bakee*, 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 PERKASANUND 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 Surwur* 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 PERKASANUND to the So-

ciety, 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 season, 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 *Sunyassy*, 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 expence, 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 SOATUNTRE
PURKASANUND BREHMCHARY of his travels and life; de-
livered on the 14th August 1792.*

I AM a Bráhmén of the *Yujerveda* 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 *Gopegarwn*, 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 *Ootrakhund* 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 Talace* (i. e. tank or lake) as far as which is inhabited, but not beyond it, and the lake called *Maun Surwur*, 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*, *Mabesho*, *Mabadeo*, and of *Teloke*, *Nauthjee*, and the *Debbees*, or cooking places of *Nownauth*, and of the eighty-four *Sidhs*, or religious persons, thus distinguished; all situated on this side of the *Maun Surwur*. 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 Talace* the boundaries of four countries meet, viz. that of *China*, of the LAMA's country, of the *Beseher* country, and that of the *Cooloo* country.

Proceeding thus in religious progress from hill to hill, I passed through the *Shaum* 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 *Thibet* to the great *Jowallab*, which is situated in a country where fire rises out of the ground for a space of twelve cofs. 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 *Peishore*, where the *Sendke* 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 *Gowpha* 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 *Sindh* 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 *Preyago* or *Allahabad*, and passing by *Casbi* or *Benares*, I went to the temple of *Jagernaut*, and visiting *Balajee*, proceeded on to *Ramisker*, 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 *Cbeilas* 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 *Yugs* 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 expences 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 *Sutya Yug* or first age, there was a *Rikk* or holy-man called *AG-NIBURNA*, 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 *Calè 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 *Ramisher*, at what distance was *Lunka*?

ANSWER.

WE go to *Ramisher* 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 *HUNQOMAN*'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 found 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, *Sanskrit* 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 *Jātimālā*, 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-purāna*.* On more important points its authority could not be compared with the *D'herma-sāstra*; but, on the subject of classes,

* The texts are cited in the *Vivādarāveśetu*, from the *Vṛibad Dherma-purāna*. This name I therefore retain, although I cannot learn that such a *purāna* 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 PA'RVATÍ, confirmed by VISHNU, and therefore called *Agama*, from the initials of three words in a verse of the *Tódala Tantra*:

“ COMING from the mouth of SIVA, heard by the mountain-born goddess, admitted by the son of VASUDE'VA, 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'herma-purána*, in the digest of which a version was translated by Mr. HALHED, name thirty-nine mixed classes, and the *Játimálá* gives distinct names for a greater number.

ON the four original tribes, it may suffice, in this place, to quote the *Játimálá*, where the distinction of *Bráhmanas* according to the ten countries to which their ancestors belonged, is noticed: that distinction is still maintained.

“ IN the first creation by BRA'HMA, *Bráhmanas* proceeded, with the *Véda*, from the mouth of BRA'HMA; from his arms *Cshatriyas* sprung; so, from his thigh, *Voisyas*; 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, (*Bráhmaveda*), therefore he was *Bráhmāna*; the protector from ill (*ekshate*) was *Cshatriya*; him whose profession (*vēśa*) consists in commerce, which promotes 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 *Súdra*: he should humble himself at their feet."

AND, in another place,

"A CHIEF of the twice-born tribe was brought by VISHNU's eagle from *Sáca dwipa*: thus have *Sáca dwipi Bráhmanas* become known in *Jambu dwipa*.

"IN *Jambu dwipa*, *Bráhmanas* are reckoned tenfold; *Sáreswata*, *Cányacubja*, *Gauda*, *Maithila*, *Utcala*, *Drávidā*, *Máraháshtrā*, *Tailānga*, *Gujjara*, and *Cásmíra*, residing in the several countries, whence they are named.(1)

"THEIR sons and grand-sons are considered as *Cányacubja* priests, and so forth; their posterity descending from MENU, also inhabit the southern regions: others reside in *Anga Benga* and *Calinga*; some in *Camrupa* and *Odra*;

(1) THESE several countries are *Saríswata*, probably the region watered by the river *Serfatty*, as it is marked in maps, unless it be a part of *Bengal* named from the branch of the *Bhágirathí*, which is distinguished by this appellation; *Cányacubja*, or *Canaj*; *Gaurá*, probably the western *Gár*, and not the *Gaur* of *Bengal*; *Mit'bila*, or *Tirabhuṭi*, corrupted into *Tirhut*; *Utcala*, said to be situated near the celebrated temple of *Jagannátha*; *Drávidā*, pronounced *Dravira*; possibly the country described by that name, as a maritime region south of *Carnata* (*Asi. Res.* vol. 2. p. 117); *Máraháshtrā* or *Marhátta*; *Telīnga* or *Telīngāna*; *Gujjara*, or *Guzarat*; *Cásmíra*, or *Cáshmir*.

others are inhabitants of *Sumbbadēsa* : and twice-born men, brought by former princes, have been established in *Bāda*, *Māgadha*, *Varēndra*, *Cbōla*, *Swernagrāma*, *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 *Bráhmāna* by a girl of the *Cshatriya* class; his duty is the teaching of military exercises, the same origin is ascribed, in the great *Dherma purāna*, to the *Cumbbacāra* (2) or potter, and *Tantravāya* (3) or weaver : but the *Tantravāya* according to the *Jātimālā*, 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 sacerdotal class. The same origin is given by the *D'herma purāna*, to the *Canfacāra* (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 *Canfacāra* from the *Tāmracūta* and *Sanc'bacāra*; and the *Sanc'bacāra*, also named *Sancbadāreca*, from the *Rājaputra* and *Gāndhika* : for *Rājaputras* not only denote *Csha-*

(1) ANGA includes *Bhāgalpūr*. *Benga*, or *Bengal* proper, is a part only of the suba. *Varēndra*, a tract of inundation north of the *Ganges*, is a part of the present zila of *Rājshāhi*. *Calinga* is watered by the *Godāveri* (*Asi. Res.* vol. 3. p. 48). *Camrupal*, an ancient empire, is become a province of *Asām*. *Odra* I understand to be *Orissa* proper. *Rāda*, (if that be the true reading) is well known as the country west of the *Bhāgirat'hi*. *Māgadha*, or *Magadha*, is *Babār* proper. *Cbōla* is part of *Bīrbhūm*; another region of this name is mentioned in the *Asiatick Researches* (vol. 3. p. 48). *Swernagrama*, vulgarly *Sunārgām* is situated east of *Dacca*. *China* is a portion of the present *Chinese* empire. On the rest I can offer no conjecture; *Sāca* and *Berbera*, here mentioned, must differ from the *Dwīpa*, and the region situated between the *Cusba* and *Sancha-dwīpa*.

(2) Vulgarly *Clāmār*. (3) Vulg. *Tānti*. (4) Vulg. *Baidya*. (5) Vulg. *Caférā*. (6) Vulg. *Sac'bérā*.

triyas 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 *Vāiśya* on the daughter of an *Ambaśi’ba*. Again, thousands of others sprung from the foreheads of cows kept to supply oblations.”

3. **NISHADA**, or *Pāraśava*, whose profession is catching fish, was born of a *Sūdra* 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 *Sūdra* 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 *Varajīvi* or astrologer. In the *Tantra*, that origin is given to the *Brāhma-sūdra*, whose profession is to make chairs or stools used on some religious occasions: under the name of *Varajīvi* (1) is described a class springing from the *Gōpa* and *Tantravāya* and employed in cultivating beetle. The profession of astrology, or, at least that of making almanacks, is assigned, in the *Tantra*, to degraded *Brāhmaṇas*.

“**BRAHMANAS**, 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. MAHISHYA is the son of a *Cshatriya*, by a woman of the *Vaishya* tribe : his profession is musick, astronomy, and attendance on cattle.

5. UGRA was born of a *Súdra* 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 *Curvina* woman, by a man of the *Patticāra* class.

6. CARANA (2), from a *Vaishya*, by a woman of the *Súdra* class, is an attendant on princes or secretary. The appellation of *Cayast'ha* (3) is, in general, considered as synonymous with *Carana* ; and accordingly the *Carana* tribe commonly assumes the name of *Cāyast'ha* : but the *Cāyast'has* of Bengal have pretensions to be considered as true *Súdras*, which the *Játimāla* seems to authorise ; for the origin of the *Cayast'ha* is there mentioned, before the subject of mixed tribes is introduced, immediately after describing the *Gōpa* as a true *Súdra*.

ONE named BHŪTIDATTA was noticed for his domestick assiduity (4) ; therefore, the rank of *Cayast'ha* was by *Bráhmaṇas* assigned to him : from him sprung three sons CHITRAṄGADA, CHITRASENA, 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*.

(1) Vulg. *Nāya* or *Nái*. (2) Vulg. *Caran*. (3) Vulg. *Cāit*. (4) Literally staying at home, (*Cāy saṁskṛitab*) whence the etymology of *Cayast'ha*.

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 *Cshatriya*, or a woman of the priestly class; his occupation is managing horses, and driving cars; the same origin is given, in the *Purána*, to the *Málacára* (1) or florist; but he sprung from the *Carmacára* and *Tailica* classes, if the authority of the *Tantra* prevails.

8. MA'GADHA, born of a *Cshatriya* girl, by a man of the commercial class, has, according to the *Sástra*, the profession of travelling with merchandize; but according to the *Purána* and *Tantra* is an encomiaft. From parents of those classes sprung the *Gopa* (2), if the *Purana* may be believed; but the *Tantra* describes the *Gopa* as a true *Súdra*, and names *Gópajivi* (3) a mixed class using the same profession, and springing from *Tantravaya Manibandha* classes.

9 and 10. VAIDEHA and *Ayógava*; the occupation of the first, born of a *Bráhmén* by a man of the commercial class, is waiting on women; the second, born of a *Vaisya* woman by a man of the servile class, has the profession of a carpenter.

11. CSHATTRI or *Cshatta*, 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 *Purána* to the *Carmacára* or smith, and *Dása* 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 *Sástra* and *Tantra*.

(1) *Málh.*

(2) *Góp.*

(3) *Góariá-Góp.*

ALL authorities concur in deriving the *Chândala* from a *Sûdra* father and *Brabmenî* 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 *Abbîra* or milkman, they are not noticed by the other authorities to which I refer. But the *Purâna* 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 AMERA SINHA 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 *Játimála* 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 *Súdra*, 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 *Rudrajámala*, the domestick priests of twenty of these classes are degraded. "Avoid," says the *Tantra*, "the touch of the *Chandála* 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 *Molécchbha*, and going to the region of *Yavana* have been named *Yavanas*."

"THESE seven, the *Rajaca*, *Chermacára*, *Nat'a*, *Barúda*, *Caiverta*, and *Mé-dabbilla*, 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 *Nat'a* and *Capála* 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 *Nat'a* and *Natáca* 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 *Pattasutracára* or feeder of silk worms and silk twister,

deserve notice ; for it has been said, that silk was the produce of *Cbina* solely, until the reign of the *Greek* Emperor JUSTINIAN ; and that the laws of *Cbina* jealously guarded the exclusive production. The frequent mention of silk in the most antient *Sanfrit* 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 ancient, since it is named in the *Durgamebàta*, 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 *Bráhma*, are assisting to sacrifice,

* Thus enumerated, *Cált-Tantri*, *Mundmálá*, *Tárá*, *Nirbána-Tantra*, *Serva sárva*, *Bira-Tantra*, *Singár-chana*, *Bhúta-Tantra*, *Uddisân* and *Cálicácalpa*, *Bhairav-Tantra* and *Bhairavicalpa*, *Tódala*, *Mátri-bébidancha*, *Máya-Tantra*, *Biréswara*, *Biswes-ára*, *Samayá-Tantra*, *Brahma-Yámala-Tantra*, *Rudra-yá mala-Tantra*, *Sanfryámala-Tantra*, *Gâyatri-Tantra*, *Cálicácula Servaswa*, *Culárnava*, *Yógini-Tantra*, and the *Mebisamardint*. These are here universally known, oh BHAIRAVI greatest of souls ! And many are the other *Tantras* uttered by SAMBU.

teaching the *Védas*, and receiving gifts; for a *Cshatriya*, bearing arms; for a *Vaisya*, 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 *Véda*, defending the people, commerce, or keeping herds and flocks, and servile attendance on the learned and virtuous priests.

A BRAHMANA, 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 *Cshatriya*, in distress, may subsist by all these means, but he must not have recourse to the highest functions. In seasons 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 *Bráhma* and *Cshatriya*. A *Vaisya*, 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 *Múrdhábhisikta*, *Ambastha*, and others. The mixed classes are also per-

mitted to subsist by any of the duties of a *Súdra*, 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 *Bráhma*, which consists in teaching the *Véda* 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 *Bráhma* and *Cāyastha*, because some of the appellations, by which the different races are distinguished, will be familiar to many readers.

THE *Bráhmanas* of Bengal are descended from five priests invited from *Canyacubja* by A'DISURA king of *Gaura*, who is said to have reigned about three hundred years before CHRIST. These were BHAT'TA NERAYNA of the family of SAN'DILA, a son of CAS'YAPA ; DACSHA also a descendant of CAS'YAPA ; VE'DAGARVA of the family of VATSA CHANDRA of the family of SAVERNA, a son of CAS'YAPA ; and SRI' HERSHU a descendant of BHAVADWA'JA.

FROM these ancestors have branched no fewer than a hundred and fifty-six families, of which the precedence was fixed by BALLA'LA SE'NA, who reigned in the twelfth century of the *Christian* era ; one hundred of these families settled in *Varéन्द्रa*, and fifty-six in *Rara*. They are now dispersed throughout *Bengal*, but retain the family distinctions fixed by BALLA'LA SE'NA ; they are denominated from the families to which their five progenitors belonged ; and are still considered as *Canyacubja Bráhmanas*.

At the period when these priests were invited by the king of *Gaura*, some *Sāreswata Brāhmanas*, and a few *Vaidicas* resided in *Bengal*. Of the *Brāhmanas* of *Sāreswata* 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 *Vārēdra*, 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 *Mit'hilā* and other countries, where that title is only used on important occasions, and in religious ceremonies.

* VA'RI'NDRA BRA'HMANAS.

CULI'NA 8.

MOITRA.

BHIMA.

Rudra-VA'G'ISI.

SANYAMINI.

OR

OR

CA'LI.

SANDYA'L.

LA'HARI'.

BHADURI.

Sudhu-VA'G'ISI.

BHADARA.

The last was admitted by election of the other seven.

SUDHA SRO'TRI' 8.

CASHTA SRO'TRI' 84.

The names of these families seldom occur in common intercourse.

† RA'RI'YA BRA'HMANAS.

CULI'NA. 6.

MUCHUTI.

GANGULI.

CA'NJELALA.

Vulgarly MUC'KERJA.

BANDYAGATI.

CHAT'ATI.

GHO'SHA'LA.

Vulg. BANOJI'.

Vulg. CHATOJI'.

SRO'TRI 50.

The names of these families seldom occur in common intercourse.

IN *Mit'bilá*, the additions are fewer, though distinct families are more numerous. No more than three surnames are in use in that district. *T'ácura*, *Misra*, and *Ojbá*; each appropriated in any families.

THE *Cáyast'has* of *Bengal* claim descent from five *Cáyast'has* who attended the priests invited from *Canyacubja*. Their descendants branched into eighty-three families; and their precedence was fixed by the same prince *BALLÁLA SE'NA*, who also adjusted the family rank of other classes.

IN *Benga* and *Decshina Rára*, three families of *Cáyast'has* have pre-eminence, eight hold the second rank*.

THE *Cáyast'has* of inferior rank generally assume the addition of *Dáśa* common to the tribe of *Súdras*, in the same manner as other classes have similar titles common to the whole tribe. The regular addition to the name of *Cshatriya* is *Verma*; to that of a *Vaisya*, *Gupta*; but the general title of *Déva* is commonly assumed; and with a feminine termination, is also borne by women of other tribes.

* CA'YAST'HAS OF DECISHINA Rára and BENGÁ.

CUL'NA 3.					
GHOSHÁ.	VASU.			MITRA.	
	Vulg. Bo'se.				
	SANMAULICA 8.				
DR'.	DATTA.		CARA.	PALITA.	
SE'NA.	SINHA.		DA'SA.	GUHA.	
	MAULICA 72.				
GUHAN.	GANÁ.	HEDA.	HUHN.	NAGA.	BHADRE.
SO'MA.	PUI.	RUDRA.	PA'LA.	ADITYA.	CHANDRA.
SA'NYA or Sain.			SUIN, &c.		
SYA'MA, &c.					
TE'JA, &c.					
CHA'CI', &c.					

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 *Culina* of the *Cáyast'bas*, the rank has been counted from thirteen degrees; and in every generation, so long as the marriage has been properly assorted, 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 *Gar'tacas* or genealogists, whose compositions are in the provincial dialect, and are known by the name of *Culajt*.

The first of these is the fact that the
 country was a very fertile one, and
 the soil was very rich. The second
 fact is that the climate was very
 warm, and the people were very
 happy. The third fact is that the
 people were very intelligent, and
 they were very fond of learning.
 The fourth fact is that the people
 were very brave, and they were
 very fond of fighting. The fifth
 fact is that the people were very
 kind, and they were very fond of
 helping each other.

The sixth fact is that the people
 were very honest, and they were
 very fond of truth. The seventh
 fact is that the people were very
 generous, and they were very fond
 of giving. The eighth fact is that
 the people were very patient, and
 they were very fond of waiting.
 The ninth fact is that the people
 were very strong, and they were
 very fond of exercise. The tenth
 fact is that the people were very
 clean, and they were very fond of
 washing.

The eleventh fact is that the people
 were very brave, and they were
 very fond of fighting. The twelfth
 fact is that the people were very
 kind, and they were very fond of
 helping each other. The thirteenth
 fact is that the people were very
 honest, and they were very fond of
 truth. The fourteenth fact is that
 the people were very generous, and
 they were very fond of giving.

The fifteenth fact is that the people
 were very patient, and they were
 very fond of waiting. The sixteenth
 fact is that the people were very
 strong, and they were very fond of
 exercise. The seventeenth fact is
 that the people were very clean, and
 they were very fond of washing.

IV.

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 *CHRISNA* is the most conspicuous, with *ARJOON* 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 *ARJOON*, both figures proving the sculptor possessed no inconsiderable skill. Here are the representations of several animals, and of one which the *Bráhmens* 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 *Mahabarat*, and exhibits the principal persons, whose actions are celebrated in that work.

OPPOSITE 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 massy 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 CRISHNA 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 *Sphinx* ; on the pavement is an inscription (*see inscrip.*). Near, is the almost deserted village which still retains the ancient name *Mahabalipoorum*, the few remaining *Bráhmens* 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 shewn 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 *Bráhmens* 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 SÍVA, 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 PARVATÍ is observed; 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 SÍVA, with eight arms, mounted on a *Singam*, opposed to her is a giantick 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 *Bráhmens*, 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 pagod, 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 SÍVA; 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 *Bráhmens* tell you is designed for a rajah who was thus secured by VISHNU; probably alluding to a prince of the VISHNU cast having conquered the country and taken its prince. The surf here breaks far out over, as the *Bráhmens* 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 *Bráhmien* 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 Śrī VA, 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 *Bráhmén* 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* rajah, 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 *Bráhméns* 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.*

This inscription is above a figure apparently female, but with only *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.

Northern Face.

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

Northern Face.

ಶ್ರೀಕೃತಿಃ ಪಠಾ ರೂಪಃ

ದಿವಿ

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 Bráhmén's *string* of the present day.

ಶ್ರೀಕೃತಿಃ ಪಠಾ ರೂಪಃ ಪುಷ್ಪಃ

ಶ್ರೀಕೃತಿಃ ಪಠಾ ರೂಪಃ

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*.

ಶ್ರೀಕೃತಿಃ ಪಠಾ ರೂಪಃ

ಶ್ರೀಕೃತಿಃ ಪಠಾ ರೂಪಃ

Above two figures male and female; the former has four arms, and the *string*

കലകടനാലാലാലാ

പുറകാക:

Above a male figure with four arms, and the *Brábménical* string.

Southern Face.

കുറുഡി

കുറുഡി

Above a male figure with four arms.

കലകടനാലാലാലാ

പുറകാക:

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

കുറുഡി

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.

ககி

கிபுது

Above a male figure with four arms.

West Front.

புதுபுது:

புதுபுது

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.

ଶ୍ରୀମଦ୍ଭଗବାଦ୍‌ପଞ୍ଚାବତାରମ୍

|| ଶ୍ରୀ ଗୁରୁ ||

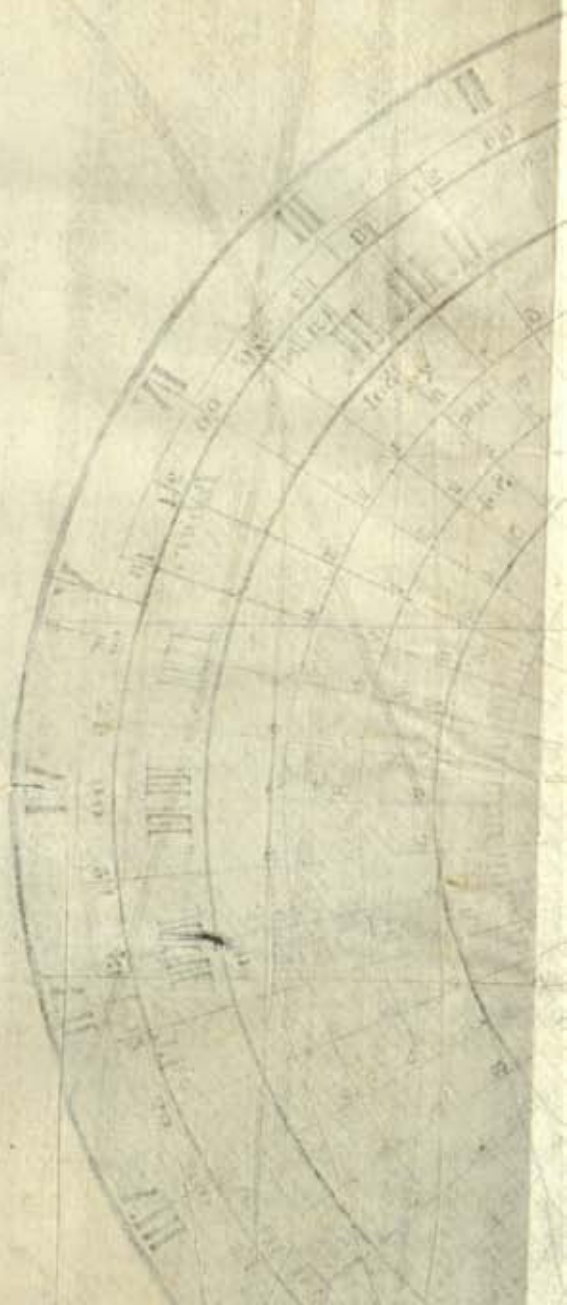
The characters of this inscription bear a strong resemblance to those of the inscription in the stone pagoda near the village, mentioned in the first part of the account of the place.

ଶ୍ରୀ ଗୁରୁ ଓ ଶ୍ରୀ ଶାସ୍ତ୍ର

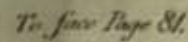
ପଞ୍ଚାବତାରମ୍

ସଦାଶିବ

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.



Hindoostanee Horal Diagram.



Engraved by A. Upjohn.

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

* On this principle, one minute of ours, being equal to 24 *puls*, and one moment to 24 *bipuls*; it is neither easy nor necessary to trace and mark the coincidence of such diminutives any farther; I may, however add, what the *Furbung Kardanee* contains, relative to these horal divisions, as follows:—

4 *Remos*, constitute 1 *puluk*; 16 *pulaks*, 1 *kast,ba*; 30 *kast,has*, 1 *kula*; 30 *kulas*, 1 *gubun*; 60 *gubuns*, 1 *dund*; 2 *dunds*, 1 *g,buree*; 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 *Zurru*, 1 *Dum*; 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 *kast,ba* is equal to 4 *tis*, the *kula*, or two *bipuls*, the *gubun* and *pul* are the same, so are the *dund* and (*kucbee*) *g,buree*, but the learner must advert to the *g,buree* in this note, being *pukkee*, or two of the former, as this distinction is frequently used, when they allot only four *g,burees* to the *pubur*, and *pukkee* 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,buree*, (called also *d,und*, which we may here translate *hour*) 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 suns pro-

* *Lumbu* and *dum*, perhaps answer to our *minutes* and *seconds*, as the constituent parts of the *sa,ut* or 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 our's 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 *sa,ut* 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,burees*, and the night of 26 only, or *vice versa*; but what is most singular in the *Indian* horometry, their *g,burees* 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,burees*, or 2 hours 48 minutes of ours, while the extremes have 8 *g,burees* 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 publick 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,burees* only give 28, and the other 4 extreme watches consisting at these periods also of 8 *g,burees* each, form 32—60 in all; not 64 *g,burees**, as some calculators have made it, who were not aware that the *g,buree* 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 soon nor easily eradicated; nay this very idea of *sixty-four* may be supported from an old distich.

At, h puhur *chun sut* *g,buree*, k, huree pokaroon pee.

Jee nikse, 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,burees* in each of the eight *pubur*, and 64 in the natural day; though this prevails among the illiterate *Indians* 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 *pubur*, of three hours each, are twelve of course, and 8 of these must give our 24. A brief but truly incorrect mode of settling this account.

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 *chime* (*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 interior 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, 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 *gujur* 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 I. 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

inserted 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 *Hindustanee* with the *English* hours, or of the rules on which *their* economy is founded. I certainly might have traced out, and inserted 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 sound the exact number, without regard-

ing its disproportion to the rest, in the same *pubur* 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 replied, in the true style of oriental adulation: “*Rat to ho chookee mugut peer moorshid ke waste do g,buree myn luga rukbee,*” “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 suspended 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 gradually 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 astrolabe, used for such purposes in *India*. These *kutorees* are now and then found with their requisite divisions, and subdivisions, very scientifically marked in *Sanscrit* characters, and may have their uses for the more difficult and abstruse operations of the mathematician or astrologer, but for the ordinary occurrences of life, I believe the simple rude horology described above, suffices (perhaps divided into the fourths 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 flurred 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 *one* 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 GO'PĀLA BHATTĀ' on numbers and quantities, which is entitled *Sanc'hyaparimāna*.

MENU, YA'JNYAWALKYA and NĀ'ĀRADA trace all weights from the least visible quantity, which they concur in naming *trasarēnu*, 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 *trasarēnu* contains thirty *parāmanu* or atoms; they describe the *trasarēnu* in words of the same import with the definition given by MENU; and they furnish another name for it, *vansī*. According to them, eighty-six *vansīs* make one *marīchi*, or sensible portion of light.

THE legislators above named proceed from the *trasarénu*, as follows :

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|--------------------------|--|
| 8 <i>trasarénus</i> | = 1 <i>licsha</i> , or minute poppy seed. |
| 3 <i>licshas</i> | = 1 <i>rāja serśhapa</i> , or black mustard seed. |
| 3 <i>rāja serśhapas</i> | = 1 <i>gaura serśhapa</i> , or white mustard seed. |
| 6 <i>guara serśhapas</i> | = 1 <i>yava</i> , or middle sized barley corn. |
| 3 <i>yavas</i> | = 1 <i>crīśhnala</i> , or seed of the <i>gunjā</i> . |

THIS weight is the lowest denomination in general use, and commonly known by the name of *retti* corrupted from *retticā**, which, as well as *raśticā* denotes the red seed, as *crīśhnala* indicates the black seed of the *gunjā*-creeper. Each *retti*, used by jewellers, is equal to $\frac{2}{3}$ th of a carat. The seeds themselves have been ascertained by Sir WILLIAM JONES, from the average of numerous trials, at $1\frac{2}{3}$ grain. But factitious *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 $179\frac{2}{3}$ grains nearly ; the *māśha* $17\frac{1}{4}$ nearly ; the *retti* $2\frac{2}{3}$ nearly.

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

- | | |
|--------------------------------|---|
| 30 <i>paramānus</i> , or atoms | = 1 <i>trasarénu</i> , or <i>vanśi</i> . |
| 86 <i>vanśis</i> | = 1 <i>marichi</i> , or sensible quantity of light. |
| 6 <i>marichis</i> | = 1 <i>rājicā</i> , or black mustard seed. |
| 3 <i>rājicās</i> | = 1 <i>serśhapa</i> , or white mustard seed. |
| 8 <i>serśhapas</i> | = 1 <i>yava</i> , or barley corn. |
| 4 <i>yavas</i> | = 1 <i>gunjā</i> or <i>raśticā</i> . |

* *Asiatick Researches*.—vol. 2. page 154.

A *retticà* is also said to be equal in weight to four grains of rice in the husk; and GÓPA'LA BHATTA' affirms, that one seed of the *gunjà*, according to writers on astronomy, is equal to two large barley-corns. Notwithstanding this apparent uncertainty in the comparison of a seed of the *gunjà* to other productions of nature, the weight of a *raeticà* 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'JNYAWALEYA and NA'REDA.

WEIGHTS OF GOLD.

5 <i>crishnalas</i> or <i>raeticàs</i>	= 1 <i>māsha</i> , <i>māshaca</i> , or <i>māshica</i> .
16 <i>māshas</i>	= 1 <i>carsha</i> , <i>acsha</i> , <i>tōlaca</i> , or <i>suverna</i> .
4 <i>carshas</i> or <i>suvernas</i>	= 1 <i>pala</i> (the same weight which is also denominated <i>nishca</i>).
10 <i>palas</i>	= 1 <i>dharana</i> of gold.

YA'JNYAWALEYA adds, that five *suvernas* make one *pala* (of gold) according to some authorities.

WEIGHTS OF SILVER.

2 <i>raeticàs</i> , or seeds of the <i>gunjà</i>	= 1 <i>māshaca</i> of silver.
16 <i>māshacas</i>	= 1 <i>dharana</i> of silver, or <i>purana</i> .
10 <i>dharanas</i> of silver	= 1 <i>satamāna</i> or <i>pala</i> of silver.

BUT a *carsha* or eighty *raeticàs* of copper is called a *pana* or *cārshāpana*.

COMMENTATORS differ on the application of the several terms. Some consider *crishnala* as a term appropriated to the quantity of one *raeticà* of gold; but CULLU'CA BHATTA' thinks the *suverna* only peculiar to gold, for which metal it is also a name. A *pana* or *cārshāpana* 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 *másha* may also be considered as the twentieth of a *cárohápana*; and VRIHASPATI describes it as the twentieth part of the *pala*. Hence we have no less than four *máshas*: one *másha* of five *raeticás*; another, of four *raeticás* (according to NA'REDA); a third of sixteen *raeticás* (according to VRIHASPATI); and a fourth (the *máshaca* of silver) consisting of two *raeticás*; not to notice the *máshaca* used by the medical tribe, and consisting of ten, or, according to some authorities, of twelve *raeticás*, which may be the same as the jeweller's *másha* of six double *rettis*. To these I do not add the *másha* of eight *raeticás*, 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 *másha*; but twelve *máshas* compose one *tóla*. This *tóla* is nowhere suggested by the *Hindu* legislators. Allowing for a difference in the *retti*, it is double the weight of the legal *tóla*, or 210 grains instead of 105 grains.

A *nishca*, 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 *survenas*, or *tólas* of gold, constitute an *urubhúshana*, *pala*, or *dínára*.

100 *palas*, or *nishcas*, make one *tulá*; 20 *tulá's* or 2000 *palas*; one *bbára*; and 10 *bbára*, one *achita*.

200 *palas* or *nishcas*, constitute one *bára*.

ACCORDING to *Dánayógíswara*, the tenth of a *bbára* is called *ad'bára*, which is consequently synonymous with *bára*, as a term for a specific quantity of gold.

GO'PA'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 *másha* to a very low denomination; and I suppose it to be the jeweller's weight.

[6 *rájicás* (*rañicás*) = 1 *máshaca*, *kéma* or *vánaca*.

4 *vánacas* = 1 *sala*, *dharana*, or *tanca*.

2 *tanca*s = 1 *cóna*.

2 *cónas* = 1 *carsha*.

PROBABLY it should be *rañicás* instead of *rájicás*, which would nearly correspond with the weights subjoined, giving twenty-four *rañicás* for one *dhanara* in both statements. It also corresponds with the tables in the *Ayén Acberí* (vol. 3, p. 94.) where a *tánc* of twenty-four *rettis*, fixed at ten barley-corns to the *retti*, contains two hundred and forty barley corns; and a *másha* of eight *rettis*, at seven and a half barley corns each, contains sixty *rettis*; consequently four *máshas* 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'PA'LA BHATTA') observes, that weights are thus stated in astronomical books:

2 large barley corns = 1 seed of the *gunjâ*.

3 *gunjâs* = 1 *balla*.

8 *ballas* = 1 *dharana*.

2 *dharana* = 1 *alaca*.

1000 *alaca* = 1 *dbatáca*.

THE tale of shells, compared to weight of silver, may be taken on the authority of the *Lílavastí*.

20 <i>capardacas</i> , shells, or cowries	=	1 <i>cáciní</i> .
4 <i>cáciní</i>	=	1 <i>pana</i> , <i>cārshāpana</i> , or <i>carshica</i> .
16 <i>pana</i> (= 1 <i>purāna</i> of shells)	=	1 <i>bberma</i> [of silver].
16 <i>bbermas</i>	=	1 <i>nishca</i> [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 *tólaca* 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 BHĀSCARA.*

ON the measures of grain GO'PĀ'LA BHĀTTA' quotes the authority of several *Purānas*.

VARĀ'HA-purāna:	1 <i>musti</i> or handful	=	1 <i>pala</i> .
	2 <i>palas</i>	=	1 <i>prāsrīti</i> .
	8 <i>mustis</i>	=	1 <i>cunchi</i> .
	8 <i>cunchis</i>	=	1 <i>pushcala</i> .
	4 <i>pushcalas</i>	=	1 <i>ād'bacā</i> .
	4 <i>ād'bacas</i>	=	1 <i>drōna</i> .
BHĀWISHYA-purāna:	2 <i>palas</i>	=	1 <i>prāsrīti</i> .
	2 <i>prāsrītis</i>	=	1 <i>cudāvā</i> .
	4 <i>cudāvās</i>	=	1 <i>prāsthā</i> .
	4 <i>prāsthās</i>	=	1 <i>ād'bacā</i> .
	4 <i>ād'bacas</i>	=	1 <i>drōna</i> .
	2 <i>drōnas</i>	=	1 <i>cumb'ha</i> or <i>sūrpa</i> .
	16 <i>drōnas</i>	=	1 <i>c'hārī</i> , or <i>shārī</i> .

* The comparative value of silver and copper was the same in the reign of ACBER. For the *dām*, weighing five *tāncs* or twenty *māshas* of copper, was valued at the fortieth part of the *Jelālī rūpiya* weighing twelve *māshas* and a half of pure silver; whence we have again the proportion of sixty-four to one.

PADME purána :	4 palas	= 1 cudava.
	4 cudavas	= 1 prast'ha.
	4 prast'has	= 1 àd'haca.
	4 àd'hacas	= 1 dróna.
	16 drónas	= 1 c'várì.
	20 drónas	= 1 cumb'ha.
	10 cumb'has	= 1 bába, or load.

SCANDA purána :	2 palas	= 1 prast'iti.
	2 prast'itis	= 1 cudava.
	4 cudavas	= 1 prast'ha.
	4 prast'has	= 1 àd'haca.
	4 àd'hacas	= 1 dróna.
	2 drónas	= 1 cumb'ha, according to some.
	20 drónas	= 1 cumb'ha, according to others.

FROM these may be formed two tables. The first coincides with the texts of the *Varáha purána*, and is preferred by RAGHUNANDANA; the second, formed on the concurrent authority of the *Bhavisya*, *Padme*, and *Scanda puránas*, is adopted in the *Calpateru*, rejecting however the *cumb'ha* of two *drónas*, and making the *pala* equal to the weight of three *tólas* and a half.

TABLE I.

8 mushtis, or handfuls	= 8 palas = 4 prast'itis = 1 cunchi.
8 cunchis	= 1 pushcala.
4 pushcalas	= 1 àd'haca.
4 àd'hacas	= 1 dróna.
20 drónas	= 1 cumb'ha.

TABLE II.

4 <i>palas</i> = 2 <i>prastiti</i> = 1 <i>cudava</i> , or <i>séticā</i> .	14 <i>tōlas</i> .
4 <i>cudavas</i> = 1 <i>prast'ha</i> .	56 —
4 <i>prast'has</i> = 1 <i>ād'haca</i> .	224 —
4 <i>ād'hacas</i> = 1 <i>drōna</i> .	896 —
20 <i>dōnas</i> = $1\frac{1}{4}$ <i>c'hāri</i> = 1 <i>cumb'ha</i> .	17,920 —
10 <i>cumb'has</i> = 1 <i>bāba</i> ,	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 cubick 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'hāri* and a quarter, will contain three bushels and three gallons nearly. According to LACSHMÍDHERA'S valuation of the *pala* at three *tōlas* and a half, the *c'hāri* weighs 14,336 *tōlas* or 215 lb. avoirdupois nearly, and the *cumb'ha* 17,920 *tōlas* or 268 lb. which corresponds nearly to the weight of a comb of good wheat: and a *bāba* will be nearly equal to a wey or a ton in freight.

THE name of *Séticā*, for the fourth of a *prast'ha*, is assumed from the *Vārāha purāna*; and *Hemādri*, accordingly, declares it synonymous with *cudava*: the *Calpateru*, *Smṛitīfara*, *Retnācara*, and *Samayapradīpa* also make the *séticā* equal to the *cudava*, or a quarter of the *prast'ha*, but it contains twelve *prastiti* according to these commentaries; and the *prastiti* is described, in the *Dānacānda*, by LACSHMÍDHERA, 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 VA'CHESPATIMISRA adopts this *cudava* of twelve *prasthis*, whence we have a third table of legal measures in general use.

TABLE III.

12 double handfuls	-	=	1 <i>cudava</i> .
4 <i>cudavas</i>	-	=	1 <i>prast'ha</i> .
4 <i>prast'has</i>	-	=	1 <i>ad'haca</i> .
4 <i>ad'hacas</i>	-	=	1 <i>dróna</i> .
20 <i>drónas</i>	-	=	1 <i>cumb'ha</i> .

BESIDES the difference already noticed on the subject of the *cumb'ha*, commentators have suggested wider differences. According to CULLU'CA BHATTA', it contains twenty *drónas*, but this *dróna* contains two hundred *palas*.

IN the *Dána vivéca*, the *cumb'ha* is stated at one thousand *palas*; in the *Retnácara*, at twenty *prast'has*. But, according to *Játúcarna*, five hundred and twelve *palas*, only, constitute a *cumb'ha*. This may be the same quantity with the *dróna*, as a measure or weight estimated by the hand: it should consist of four *ad'hacas*, each equal to four *prast'has*, and each of these weighing, according to the AT'HARVA *véda*, thirty-two *palas* of gold. This, again, seems to be the *prast'ha* of MAGAD'HA, described by GO'PATHA BRA'HMANA;

4 <i>crishnalas</i>	-	=	1 <i>másha</i> .
64 <i>máshas</i>	-	=	1 <i>pala</i> .
32 <i>palas</i>	=	=	1 <i>prast'ha</i> as used in MAGADHA.

SINCE the *pālā* of the gold weighs 420 troy grains, the *prast'ba* contains one pound avoirdupois, fourteen ounces and three quarters nearly. The *drōna* last mentioned contains 30 lb. 11 oz. and a fraction, and a *cumb'ba* of twenty such *drōnas*, 614 lb. 6 oz. and a half nearly.

THE measures of grain in common use are probably derived from the ancient *cumb'ba* and *drōna*; but their names are not suggested by any of the preceding tables. Twenty *cat'hās* make one *bisī*; and sixteen *bisīs* one *pautī*. The size of the *cat'hā* varies in different districts, in some containing no more than two and a half *sér* of rice, in others five *sér* (80 sicca weight) or even more. In the southern districts of Bengal, a measure of grain is used, which contains one *sér* and a quarter. It is called *réc*. Four *récs* make one *pālī*; twenty *pālīs* one *solī*; and sixteen *solīs* one *cāben*.

THE *Vṛibat Rājamartanda* specifies measures, which do not appear to have been noticed in other Sanscrit writings;

$$24 \text{ tólacas} = 1 \text{ sér},$$

$$2 \text{ sér} = 1 \text{ prabh.}$$

IT is mentioned in the *Ayén Ackberī*, that the *sér* formerly contained eighteen *dāms* in some parts of Hindustan, and twenty-two *dāms* in others; but that it consisted of twenty-eight *dāms* at the commencement of the reign of ACBER, and was fixed by him at thirty *dāms*. The *dām* was fixed at five *tāncs* or twenty *māshas*, or, as stated in one place, twenty *māshas* and seven *rettis*. The ancient *sér* noticed in the *Ayén Ackberī* therefore coincided nearly with the *sér* stated in the *Rajamartanda*. The double *sér* is still used in some places, but called by the same name (*panchaseri*) as the weight of five *sér* used in others.

FOR measures used in *Mit'hila* and some other countries, we have the authority of CHANDE'SUARA, in the *Bála bhūshana*: they differ from the second table, interposing a *mānica* equal to a fourth of a *c'hārī*, and making the *bāba* equal to twenty *c'hārīs*.

4 *palas* = 1 *cudava*.

4 *cudavas* = 1 *prast'ha*.

4 *prast'has* = 1 *ā d'haca*.

4 *ā d'hacas* = 1 *dróna*.

4 *drónas* = 1 *mānica*.

4 *mānicas* = 1 *c'hārī*.

20 *c'hārīs* = 1 *bāba*.

GO PA'LA BHATTĀ states another set of measures, without furnishing a comparison to any determinate quantity otherwise known.

4 *āyus* = 1 *śācsha*.

4 *śācshas* = 1 *bilwa*.

4 *bilwas* = 1 *cudava*.

4 *cudavas* = 1 *prast'ha*.

4 *prast'has* = 1 *c'hārī*.

4 *c'hārīs* = 1 *góni*.

4 *gónis* = 1 *drónicā*.

I HAVE already quoted a comparison of the *cudava* to a practical measure of length; and we learn from the *Lilāvati*, that the *c'hārī* or *c'hārīca* of MAGAD'HA should be a cube measured by one cubit: "a vessel measured by a cubit in every dimension is a *ghanahasta*, which, in MAGAD'HA, is called *c'hārīca*; 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'barica* of UTCALA is in general use on the south of the river
 “ *Gó dá veri*; there the *dróna* is the sixteenth part of a *c'bari* (as in the se-
 “ cond table); the *ad'baka*, the fourth of a *dróna*; the *prast'ba*, the fourth of
 “ an *ad'baka*; and the *cudava*, a quarter of a *prast'ba*, but the *cudava*,
 “ formed like a *ghanabasta*, should be measured by three fingers and a half
 “ in every dimension. This vessel must be made of earth or similar mate-
 “ rials; for such alone is a *cudava*.”

BOTH by this statement, and by the second table, a *c'bari* 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
cudáva, thirteen and a half cubick *angulas*. Its solid contents, there-
 fore, are the half of a cube whose side is three fingers: a slight change
 in the reading would make the description quoted from the *Lílávati* coincide
 with this computation, and the *c'barica* of UTCALA and MAGAD'HA
 would be the same.

HOWEVER, LACSHMÍ'DHERA 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'baka* 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 mercial of 3,384 cubick inches, nearly double to the *dróna* of 1,728 cubick
 inches. If the *cudava* of UTCALA 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'barica* of UTCALA contains 44,118 cubick *angulas*, or
 18,612 cubick inches, taking the cubit at eighteen inches.

ON the measures of space GO'PA'LA BHATTA' quotes a text from *Vṛiddha MENU*, which traces these from the same minute quantity as weights.

8 <i>trasarénus</i>	= 1 <i>rénu</i> .
8 <i>rénus</i>	= 1 <i>bálógra</i> , or hair's point.
8 <i>bálágras</i>	= 1 <i>licsha</i> , or poppy seed.
8 <i>licshas</i>	= 1 <i>yúca</i> .
8 <i>yúcas</i>	= 1 <i>yava</i> , or very small barley-corn.
8 <i>yavas</i>	= 1 <i>angula</i> , or finger.

FROM this MENU proceeds to larger measures.

12 <i>angulas</i> , or fingers	= 1 <i>viteśti</i> , or span.
2 <i>viteśtis</i> , or spans	= 1 <i>hesa</i> , or cubit.

IN the MA'RCANDE'YA *purána* measures are traced from atoms.

8 <i>paramánus</i> , or atoms	= 1 <i>para sushma</i> , most minute substance.
8 <i>para sushmas</i>	= 1 <i>trasarénu</i> .
8 <i>trasarénus</i>	= 1 <i>mehirajaés</i> , grain of sand or dust.
8 grains of sand	= 1 <i>bálógra</i> , or hair's point.
8 <i>bálágras</i>	= 1 <i>licsha</i> .
8 <i>licshas</i>	= 1 <i>yúca</i> .
8 <i>yúcas</i>	= 1 <i>yava</i> .
8 <i>yavas</i>	= 1 <i>angula</i> , or finger.
6 fingers	= 1 <i>pada</i> , or breadth of the foot.
2 <i>padas</i>	= 1 <i>viteśti</i> , or span.
2 spans	= 1 cubit (<i>hesa</i>)
2 cubits	= the circumference of the human body.
4 cubits	= 1 <i>dbanush</i> , <i>denda</i> , or staff.
2 <i>dendas</i>	= 1 <i>naricà</i> , (or <i>nādi</i>)

IN another place the same *purāna* 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 to the *Calpateru*, it should be ten breadths of the thumb and a half. And we learn from the *ADITYA purāna*, that, according to *VY-ĀSA*, it should be measured by the breadth of the thumb at the tip. The same *purāna* makes two *retnis* (or 42 thumbs) equal to one *cishcu*: but *HĀRIṬA* 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 purāna* 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 *nadi*, two *dendas*.

THE same *purāna* notices the larger measures of distance,

2000 *dhanush* = 1 *crośa*,

2 *crośas* = 1 *gavyuti*,

8000 *dhanush* = *gavyutis* = 1 *yōjana*.

ON one reading of the *VISHNŪ purāna*, the *crośa* contains only one thousand *dhanush*; accordingly *GOṂPĀLA BHATTĀ* 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 *crośa*, *gavyuti*, and *yōjana*, as they are given in the *ADITYA purāna*. The *Lilāvati* confirms this computation.

8 barley-corns	= 1 finger's breadth.
24 fingers	= 1 <i>besta</i> , or cubit.
4 cubits	= 1 <i>denda</i> (= 1 <i>dhanush</i>).
2000 <i>dendas</i>	= 1 <i>crósa</i> *.
4 <i>crósas</i>	= 1 <i>yójana</i> .

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

10 hands = 1 *vanśa*, or bamboo cane.

20 *vanśas* (in length and breadth) = 1 *niranga* of arable land.

DIVISIONS of time are noticed in the first chapter of MENU (v. 64):

18 *niméśhas*, or twinklings of an eye = 1 *cáśht'bhá*,

30 *cáśht'hás* = 1 *calá*,

30 *calás* = 1 *śhana*,

12 *śhanas* = 1 *muhúrta*,

30 *muhúrtas* = 1 day and night, (according to mean solar time.)

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

15 days and nights (*abóráttra*) = 1 *pacśba*, or interval between the *śizygies*.

first and last *pacśba* = 1 month.

* If the cubit be taken at eighteen inches, then 4000 yards = 1 standard *crósa* = 2 miles and a quarter nearly; and 2000 yards = 1 computed *crósa* = 1 mile and one eighth; and Major RENNEL states the *crós* as fixed by ACBEN at 5000 *ge* = 4757 yards = 2 British miles and 5 furlongs; and the average common *crós* at one statute mile and nine-tenths.

2 months	= 1 season (<i>rītu</i>)
3 seasons	= 1 <i>ayana</i> (half year).
2 <i>ayanās</i>	= 1 year.

ACCORDING to the *Sūrya Siddhānta* (see As. Ref. vol. 2, p. 230).

6 respirations (<i>prāṇā</i>)	= 1 <i>vicalā</i> .
60 <i>vicalās</i>	= 1 <i>danda</i> .
60 <i>dandas</i>	= 1 sydereal day.

THE VISHNU *purāṇa* states a mode of subdividing the day, on which GO'PĀLA BHATTĀ remarks, that "it is founded on astronomy," and sub-joins another mode of subdivision.

TEN long syllables are uttered in one respiration (*prāṇā*.)

6 respirations	= 1 <i>vinādicā</i> .
60 <i>vinādicās</i>	= 1 <i>dhātā</i> .
60 <i>dhātās</i>	= 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 <i>pala</i> .
60 <i>palas</i>	= 1 <i>ghaticā</i> .
60 <i>ghaticās</i>	= 1 day and night.
30 days and nights	= 1 month.
12 months	= 1 year.

THE VARĀHA *purāṇa* concurs with the *Sūrya Siddhānta* in another subdivision of time.

Night,	1	2	3	4	5	6	7	8	9	10	11	12
	৪	২	৫	৩	০	৪	৬	৮	১	৫	৩	০

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 *bóra* of the subsequent day, whose regent, the fourth from ০, is ৫; and thence proceed by the above-mentioned rule to the regents of *bóras* for *Monday*.

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

বাক্পূৰ্বে ঘটিকাধ্বনিয়াঃ কালাত্ম্যহোৰাপত্যঃ শব্দাণ্ডাঃ ১

দিনেনিভায়া মৃতবাণবত্যা নিজাহনাথা পৈতম্যঃ পুৰুষাঃ ১১

বেথাপূৰ্ব্বা পৰযো স্বাকঃ সূৰ্য্যোদয়া পৈবন্তা প্রোক ১

দেশান্তর যোজনমিত বিঘটীতিঃ পাদহীনীতিঃ ১১ ২ ১১

“ THE *Ghatikas*, elapsed from the beginning of the day, being doubled and divided by (five) arrows, show the cords of time called *bóra*; in the day these cords are regulated by intervals of (six) 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 *yójanas*, and reduced into *ghatás* after deducting a fourth from the number of *yójanas*.”

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.

The consequence of this for the first twenty-four hours of the day is certainly remarkable. But still we find the same division of time noticed by a more ancient author than Herodotus, it must remain doubtful whether it may not have been derived from Egypt 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 retrenchment 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 SEMBUAN 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 *Talians* or *Peguers*; 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 re-people their deserted city.

THE better to effect this purpose, his *Birman* majesty, on the death of TAOMANGEE, the late *Mayoon* or viceroy, which happened about five years ago, directed his successor MAIN LLA NO RETHEE to quit *Rangoon*, and make *Pegue* his future residence, and the seat of provincial government of the thirty-two provinces of *Henzawuddy*.

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 *Tangboe*, *Martaban*, and *Talowneou*, 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

* THESE people are called *Pagwasat*, 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—*Putchoo Khoo, 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.

† SHOE 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 *Birmans* the origin or etymology of the term, but it was explained to me as importing a *Promontory that overlooked land and water*; *Praw* signifies *lord*, and is always annexed to the name of a sacred building, it is likewise a sovereign, and sacerdotal title, and frequently used by an inferior when addressing his superior, the analogy between the *Birmans* and the ancient *Egyptians* in the application of this term, as well as in many other instances, is highly deserving notice.

PHRA 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 conferred it on their kings and priests, in the first book of MOSES, chap. 41, PHAROAH gives, "JOSEPH to wife the daughter of POTI-PHARA, 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 quadrangular; 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 strewn 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 fortrefs is coeval with this building, 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 neighbourhood, that could have afforded a tenth part of the quantity.

THESE terraces are ascended by flights of stone steps, broken and neglected; 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 benches 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 "PHAROAH OPHRA," and it is not a very improbable conjecture, that the title PHAROAH given to successive kings of *Egypt*, is a corruption of the word *Phra* or *Praw*, in its original sense signifying the SUN, and applied to the sovereign and the priesthood as the representatives on earth of that splendid luminary.

menſe breadth diminifhes 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 form. The raiſing and conſecration of this laſt and indiſpenſable 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 *Ummera-poor* to be preſent at the ceremony of putting it on.

THE circumference of the *tee* is fifty-fix feet, it reſts on an iron axis fixed in

* Vide Mr. HUNTER's account of *Pegue*.

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 361 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 pyramidical 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 *PALLOO*, 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 strewn 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 *Rabeans*, 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 emblematick of purity,

* These flags are made of long stripes of white cloth sewed together at the sides, and extended by hoops of thin bamboos.

and their sacred function ; on the top of the staff there is commonly the figure of a *benza* or goose, 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 *Galladzet* 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 then 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 no where an opportunity of examining. With some difficulty, however, I procured, whilst at *Amerapoorra*, 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, stam: 10 receptaculo inserta. Nect: maximum, orbiculatum, 10 sulcum, germen involvens. Styli 5, conniventes. Drupa monosperma, nuce bivalvi. Habitat in montosis regni Barmanorum.

ARBOR elata ramis fuscis nudis; ramulis foliosis. Ramuli floriferi glabri, rubicundi, viridè-punctati; fructiferi rimosi.

FOLIA approximata, alterna, petiolata, oblonga, basi attenuata, integra, integerrima, retusa, glabra, venis reticulata.

FULCRA, petiölus anceps, acutangulus, brevissimus, glaber. Stipulæ, pubes, arma cirrhi nulla.

INFLORESCENTIA. Paniculi axillares ad apices ramorum congesti, laxi, nudi, foliis longiores, ramosissimi; ramis teretibus, horizontalibus, sparsis. Flores parvi, albidii, plurimi, pedicellati, sparsi. Racemi fructiferi penduli, foliis multo longiores. Fructus rubri, acescenti-dulces.

CAL: perianthum proprium monophyllum, concavum, corollâ brevius, quinquefidum: laciniis obtusis. Lacinia calycis aliquando tres, sæpius quatuor.

COR: petala quinque, rarius sex, receptaculo inserta, sessilia, sublinearia, obtusa, revoluta.

NECT. Maximum, in centro floris orbiculatum, depressum, decem-striatum, germen involvens.

STAM: Filamenta decem, subulata, erecta, petalis breviora, receptaculo inserta, antheræ parvæ, ovatæ.

PIST: Germen superum. Nectario tectum. Styli quinque subulati, erecti, conniventes, longitudine staminum, stigmata obtusa.

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

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

AFFINIS, ordine naturali, terminaliis proximus habitu, generi a Roxburgio *tsaroo mamaday* dicto, sed nectaria diversissima, characterem habet non-nihil similem generi altero, a Roxburgio *cbitraca* dicto, sed habitus diversi; singularis est drupa monosperma cum stylis quinque; simile aliquod tamen occurrit in genere Roxburgiano *odina*.

A SAPONARIA diversum genus, drupâ uniloculari.

IX.

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 *Rajahmahl* 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.

The Head	Cook.	Eyelash	Cunmeer.
Eye-brow	Cunmudbâ.	Cheek	Cullâ.
Nose	Moëë.	Chin	Kyboo.
Throat	Cuffer.	Tooth	Pul.
Armpit	Buddee puckda.	An Arm	Tât buddee.
Blood	Keefs.	Breast (of a woman)	Doodah.
A Finger	Angillee.	Heel	Teeknâ.
The Breast	Bookah.	Flesh	Mâäk.
Belly	Coochah.	A Fever	Meed.
Loins	Cudmah.	Headake	Cooknogee.
Back	Cookah.	Cholick	Coochoonoogee.
A Vein	Nâroo.	A Tiger	Toot.
A Toe	Cuddah angillee.	Dog	Alah.
Hair	Tullee.	Ant	Choobah.
An Eye	Cun.	Kite	Chunneeâdee.
Ear	Kydoob.	Paroquet	Apud.
The Countenance	Teefoo.	A Fly	Teelcur.
Beard	Pâchoodee.	A Bee	Ook.
Throat	Tood.	Heaver	Surruncuffa.
Shoulder	Dupna.	A Star	Badëkah.
A Nail (of finger)	Ooruk.	A Cloud	Badelee.
A Lip	Boocootooda.	A Cow	Ooce.
Navel	Cood.	A Jackal	Checcâloo.
Buttock	Moodoocudmullâ.	A Cat	Beerkah.
Liver	Cuckâlee.	A Cock	Noogeer.
The Foot	Chupta.	A Crow	Câcah.
A Bone	Coochul.	A Dove	Poorah.
Forehead	Neepee.	A Pigeon	Cooteerah.

A Scorpion	Teelah.	Oil	Heescun.
A Buffalo	Mung.	A Turband	Doomée, Cocudee.
A Hog	Keefs.	A Tree	Mun.
A Deer	Chutteedah.	Linen Cloth	Lookâ.
A Hen	Dooteegeer.	Cold	Kaidah.
A Bat	Cheedgoo.	Heat	Oomee.
A Snake	Neer.	A House	Adâ,
A Fish	Meen.	North	Colah.
Male, masculine,	Peechâlah.	South	Purrubmoha.
Sunshine	Beer.	West	Beerhotroo.
Moonshine	Beelah.	A Peacock	Choobah.
Lightning	Chudkah.	Sweet	Ameebade.
Light	Abublee.	Bitter	Câdkah.
Earth	Kycul.	Sour	Seeteed.
A Stone	Châchah.	Prayer, worship	Aydecootee.
An Arrow	Châr.	<i>Hindustan</i>	Coler.
A Bone	Eedut.	Wheat	Gyhoom.
Fire	Chuchah.	To sleep	Cooda.
Water	Oom.	To beget, procreate	Keena.
Grass	Doobah.	To sleep	Cunderco.
Food	Jacoo.	To go	Aycoocoo.
Bread	Putteeâ.	To tear	Aseehee.
Cloth	Durjâ.	To squeeze, press	} Ayrcoo.
Black	Fudcooroa.	out	
White	Cheen burroo.	To grind	Tudyecâ.
Red	Kyfoo.	To know, under-	} Boojee een.
Yellow	Balcoo.	stand	
Rice	Teekeel.	To rub	Mâleeâ.

To break	Turrâ.	This	Bhee.
To sound	Ahootee.	Him	Naheen.
To laugh	Alkee.	They	Nuckeed.
To weep	Boolkee.	Ignorant	Oo cullee mulla.
To pull, draw	Bundra.	Justice	Muzcoor.
A river	Abeen.	Which	Chuchee.
Salt	Beek.	A liar	Puffeearree.
A cup	Coree.	A rope, cord	Meer.
Below, under	Tuttâ.	A hill	Tookah.
A tent rope	Jumkâ.	Sick	Chootah.
High	Arkâ.	A sheet	Chuppoedah.
A door	Dowaree.	Left (hand, or side)	Akdo.
A flower	Kâdah.	Crooked	Deeza.
Game (beasts of)	Cubbree.	Sand	Bâlah.
An idiot	Bootah.	Accusation, com-plaint	} Mâfee.
The world	Oorahâ.		
A mat	Tâlee.	A garment, vest	Joollee.
Before	Moodâhee.	Phyick	Bhudder.
Why	Pundreck.	A fash	Sujar.
Me, to me	Aykee.	A mill	Mookah.

X.

*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 JUGGUT SING*, in digging for stones from the subterraneous materials of some extensive and antient buildings in the vicinity of a temple called *Sarnauth*, at the distance of about four miles to the northward of the present city of *Benares*.

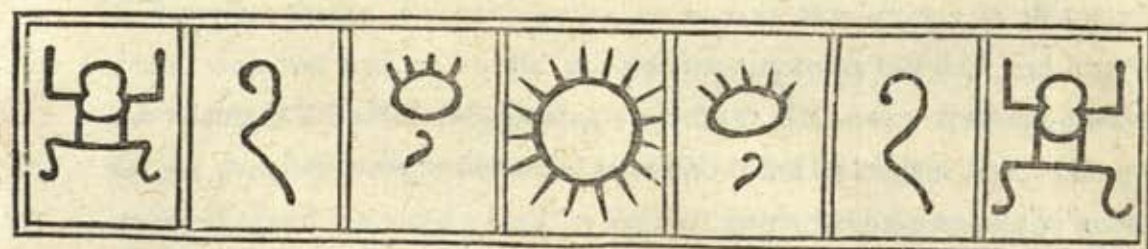
IN the innermost of these cases (which were discovered after digging to the depth of eighteen *bauts* or cubits under the surface) were found a few human bones, that were committed to the *Ganges*, and some decayed pearls, gold leaves, and other jewels of no value, which cannot be better disposed of 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.

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

नमोबुद्धाय वाराणसीसरस्यां गुरवः श्रीधामराशिपादाञ्ज
 आराध्यनमितनृपति शिरोरुहैः शैबलाकीर्णम् १
 भूपालचित्तयस्यादि कीर्तिरत्नधराब्जयः
 गौडाधिपो महीपालः काश्याश्रीमानकार्यत् २
 सहजीकृतपांडित्यै वोद्धारानिवर्त्तिनौ
 यौ धर्मराजिकं सांगं धर्मचक्रं पुनर्नवम् ३
 कृतवन्तौ च नवीनमेषु महास्थानशैलराजकुटीम्
 एनां श्रीस्थिरपालो वसंतपालो नुजः श्रीमान् ४
 सम्वत् १० ८३ पौष दिन ११



सधर्महेतुप्रकरो हेतुं तेषां तथा फलोह्यवदत्
 तेषां च यो विरोध एवं वादी महाश्रमणाः

ॐ नमो भगवते वासुदेवाय ॥ १ ॥
ॐ नमो भगवते वासुदेवाय ॥ २ ॥
ॐ नमो भगवते वासुदेवाय ॥ ३ ॥
ॐ नमो भगवते वासुदेवाय ॥ ४ ॥
ॐ नमो भगवते वासुदेवाय ॥ ५ ॥
ॐ नमो भगवते वासुदेवाय ॥ ६ ॥
ॐ नमो भगवते वासुदेवाय ॥ ७ ॥
ॐ नमो भगवते वासुदेवाय ॥ ८ ॥
ॐ नमो भगवते वासुदेवाय ॥ ९ ॥
ॐ नमो भगवते वासुदेवाय ॥ १० ॥



ॐ नमो भगवते वासुदेवाय ॥ ११ ॥
ॐ नमो भगवते वासुदेवाय ॥ १२ ॥

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 decyphering 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 decypher 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 decyphering; 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 *Sanserit*, 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 VYA'SA, 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. VYA'SA is the ſuppoſed author of the *Purānas*.

No. I.

Conſiſts of four diſtinct parts which are to be read ſeparately. In the firſt part (I), either VIDURA or VYA'SA informs YUDISHTIRA, of the hoſtile intentions of DURYODHEN.

“ From what I have ſeen of him (DURYODHEN), 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 closes thy cave) come here secretly;
 “ old man, that thou mayst obtain the object of thy desire. Thy suf-
 “ ferings 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 VYA'SA; 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 MAHADEV^{VA},
 “ twice expressed, is an exclamation used by people in great distress) af-
 “ cend 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-

“ 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 statute of SA'CYA-UDA'RACA (now a form of BUDDHA)
 “ but who was before a *Brahmachári*, called SRI'-SOHILA.”

No. VI.

“ SACYA-PA'DA'MRATA made this statute.”

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 discovering the abovementioned book, which I conceive to be a most fortunate circumstance.

F. WILFORD.

No. I.

बहुलाऊरा पकटवठरवुध गुप्तसप्रथितप	वरप्पुतवृद्ध पयखटुठ चैपे	कडूतख इचैपे	इतरया वृत्त
<i>Bhalá úrá</i> <i>pacat'ba vra'dhara bud'ba</i> <i>gupta suprathitapa</i>	<i>Varappu pluta wradd'ba</i> <i>pattharc'batút'ba t'ba</i> <i>paipé.</i>	<i>Cra'drata c'ba-</i> <i>i paipé</i>	<i>Itarattbá</i> <i>wrattam</i>

The same in Sanscrit.

बहुलातर्कनाप्रकटवृत्तः मूर्खःछन्नःसप्रथितप	वरंप्राप्तं गुप्तःवृद्ध प्रस्तारंखंडयित्वा प्राप	कष्टरत खलःप्राप्तः	अन्यथा वृत्तान्तं
<i>Babulá tarcaná pracatá wratab</i> <i>múrc'bab cb'hannab suprathitapa.</i>	<i>Varam práptum guptab wraddha</i> <i>prastaramc'ban'deyitwá ba prápa.</i>	<i>Cashatarata</i> <i>c'balab práptab.</i>	<i>Anyatbá</i> <i>wrattántam.</i>

No. III.

The same in Sanscrit.

रुचिररुरुर गुरुस्त्रलेखानि प्रेषयगुठःगच्छ	<i>Ruchira Hara-hara</i> <i>aruruba lēhāni</i> <i>rurui guba i i.</i>	रुचिररुरुर अरुरुलेख रुरगुच्छ	<i>Ruchira Hara-hara</i> <i>gubám rubya lē'hyāni</i> <i>prēbhaya gú'dhad guch'ba.</i>
---	---	------------------------------------	---

No. IV.

कलद्वजठेरुहैपहृष्टहैलेखरअरेषगुहदरलठ
Calā-i jat'hé rubabai paba-i ibé suēhara's arurē sbagubadara latā.

The same in Sanscrit.

जानीहिजठेरुठाःप्रहितंश्छंति स्तेषंआरुएतद्गुहद्वारंलिख
Jāulbi jat'haré rá'dháb prabhitam ich'hanti sūebam āvara ētadgubā dvādrām lī'ba.

No. V.

The same in *Sanſcrit*.

ओज्रेष्ठशेषशब्धुठरुरुलरु
रुसुटेरुजरुगुठटेरुरुलरु

*Objé-i t'ka-i ſhégū ſabru d'but'bara ruha hāla ruha
baſuté hajé ru-i-té guḍha te i raru habaracru.*

अजुश्च निष्ठ श्री भ्रं मां प्रीतिनि प्रविशत्तथर
आवसथे अघापि गत्वा गुप्तः तिष्ठ पश्चात् उद्योगं कुरु

*Ajya iwa tiſhtia ſigbram grāmam jbatiti pravishatad'bara
āvasaṭhē aḍyāpi gatawā gupta' tiſhtia poſ' chāt ud'hyogam
cru.*

Pure Sanſcrit.

No. II.

श्री सोहिल ब्रह्म
चारिणः शाकारुदा
रक प्रतिमयं

*Sri Sobila Brahma-
chāribhāḥ Śācyaruda-
rāca pratimēyam.*

Pure Sanſcrit.

No. VI.

शाकापादामृतकृता प्रतिमा ॥
Śācyā Pādāmṛata cratā pratimā.

Nº. 1.

Ucl 2 cl 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

From Verool or Ellora.

Nº. 2.

श्रीशो डि ल प्र क
या रि लः शा कि रु च
र क प रि मे य

Verool or Ellora.

Nº. 3.

ए ल म स ॥ १ ॥
॥ २ ॥ ३ ॥ ४ ॥ ५ ॥
॥ ६ ॥ ७ ॥ ८ ॥ ९ ॥

Ekvira or Jebire.

Nº. 4.

Ekvira or Jebire.

म ४ ५ ६ ७ ८ ९ १० ११ १२ १३ १४ १५ १६ १७ १८ १९ २० २१ २२ २३ २४ २५ २६ २७ २८ २९ ३० ३१ ३२ ३३ ३४ ३५ ३६ ३७ ३८ ३९ ४० ४१ ४२ ४३ ४४ ४५ ४६ ४७ ४८ ४९ ५० ५१ ५२ ५३ ५४ ५५ ५६ ५७ ५८ ५९ ६० ६१ ६२ ६३ ६४ ६५ ६६ ६७ ६८ ६९ ७० ७१ ७२ ७३ ७४ ७५ ७६ ७७ ७८ ७९ ८० ८१ ८२ ८३ ८४ ८५ ८६ ८७ ८८ ८९ ९० ९१ ९२ ९३ ९४ ९५ ९६ ९७ ९८ ९९ १००

Nº. 5.

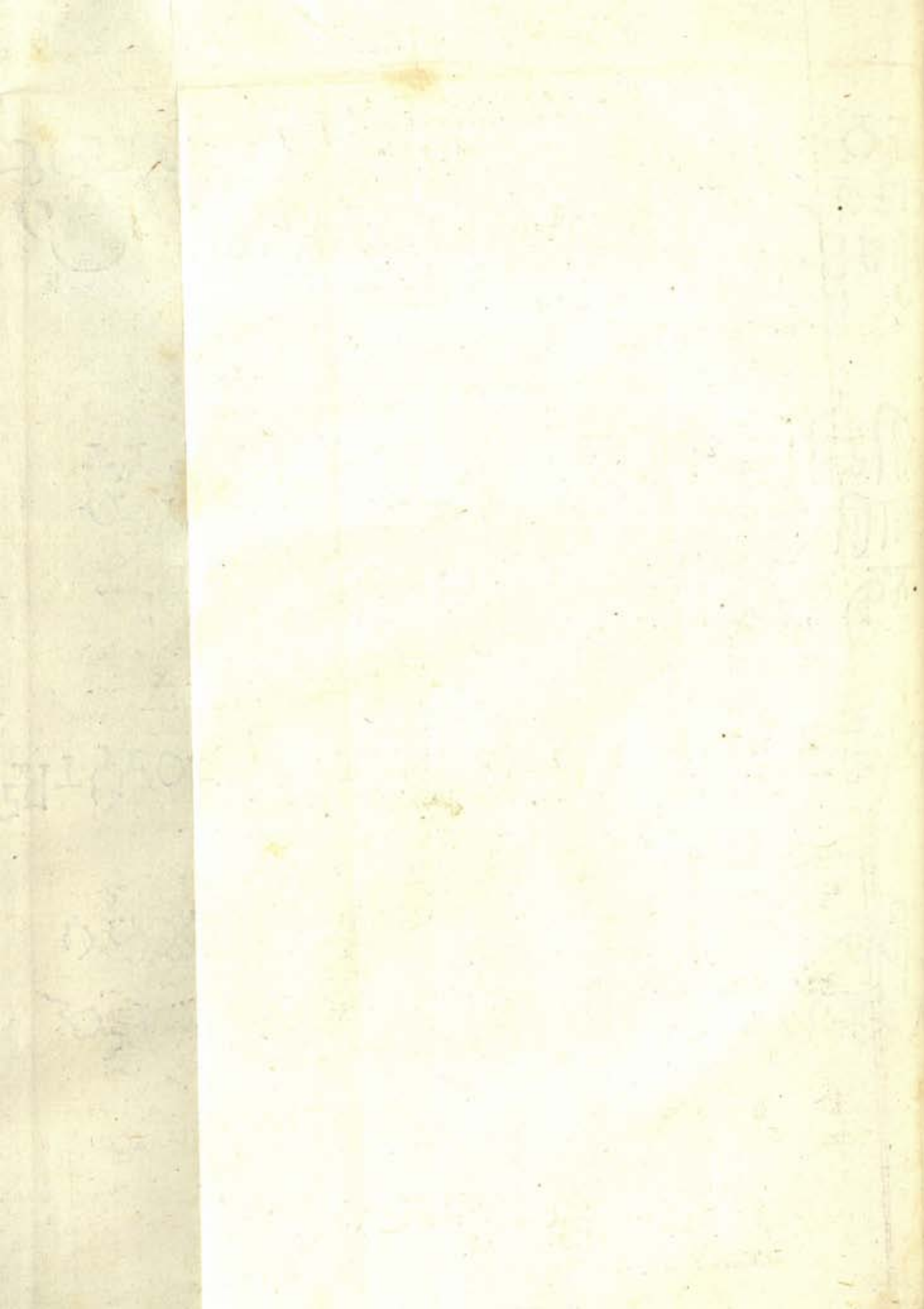
१ २ ३ ४ ५ ६ ७ ८ ९ १० ११ १२ १३ १४ १५ १६ १७ १८ १९ २० २१ २२ २३ २४ २५ २६ २७ २८ २९ ३० ३१ ३२ ३३ ३४ ३५ ३६ ३७ ३८ ३९ ४० ४१ ४२ ४३ ४४ ४५ ४६ ४७ ४८ ४९ ५० ५१ ५२ ५३ ५४ ५५ ५६ ५७ ५८ ५९ ६० ६१ ६२ ६३ ६४ ६५ ६६ ६७ ६८ ६९ ७० ७१ ७२ ७३ ७४ ७५ ७६ ७७ ७८ ७९ ८० ८१ ८२ ८३ ८४ ८५ ८६ ८७ ८८ ८९ ९० ९१ ९२ ९३ ९४ ९५ ९६ ९७ ९८ ९९ १००

Salfette.

Nº. 6.

Verool or Ellora.

श्रीशो डि ल प्र क



မဟာသမတ မင်္ဂလံ ဝိသုဒ္ဓိသုတ္တံ သန္တံ ဖြစ် ဖြစ် တံ
တိုင် ပိတ္တံ တံခါး နှိုက် ဆောင် ချေ သွား တဆ
သွပ်ပါး သွား ခန္ဓသတ် စကား တိုင် လိုက် လိုက်
လိုက် သံ လိုက် မူလား နှိုက် လိုက် န ဖြစ် အသွေ နှိုက်
ဗျက် နှိုက် မူလံ တမံ တားမှ ဗျက်စံ ဗျက်စံ ခံတိုင်
ပါး နှိုက် ဆယ် ခြောက် ဝင် လိုက် နှိုက် လိုက် လိုက်
လိုက် သုတ် သင်္ဂြိုဟ် သင်္ဂြိုဟ် သွား သွား လိုက် ဖြစ် ဝတ်
တား တဆ ဆင် ဖြစ် သွား အမျှင် လေ ပါး ပုံတိုက်
သတ် တိုင် နှိုက် လေ လေ ခြေ နှိုက် ဗျက် လိုက် အုပ်
ခါးမှ နှိုက် နှိုက် သုတ်မား လိုက် နှိုက် နှိုက် နှိုက် စ
သွား နှိုက် သံလား တိုင် လိုက် လိုက် လိုက် နှိုက် တံ
ငါး ဖြစ် နှိုက် တဆယ် သွပ်ပါး ခန္ဓသတ် တည်း
စကား လိုက် မဟာသမတ မင်္ဂလံ အား လား လေ
လိုက် သွား ငှါ ...

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 Mārāmās, or natives of those kingdoms.

To avoid tedious and perplexing reference, it was thought adviseable to place under each symbol its characteristick 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 *Sānburū*, or *the system of instruction*. They are classed under

* *Āwa* and *Aracan*.† *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 *ārwī*, *āsāitne*, and *āsāitcri*, 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 *cāgric'he* or *the alphabet*, respecting which there is little to observe. In certain cases to facilitate utterance, *c* is permuted with *g*, *cb* 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*, *cb'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 *āpāñ*; *ārañ*; *brāñch'bwe*, *bmāñch'bwe*, &c. according to the letter it is associated with; and *wāñch'bwe*.

ĀPĀÑ.

THE mark of this symbol is *y*, though it might more properly, and sometimes more conveniently, be marked by our third vowel, commencing a diphthong. 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 *sb*;

* The 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 *i* coalescing with a following vowel.

ĀRAĪT.

THIS mark is typified by *r*, and is always prefixed to the letters with which it associates. These are *c*, *c'b* (1), *g*, *ñ*, *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, *ārāit*, designates its natural form—meaning *erect*, or *upright*.

HMAČH'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 *ñ*, *ny*, *n* (2), *m*, *r*, *l* (1), *w*, *s*; before the *first seven* of which its type is *h**. *s* it hardens into *z*, the appropriate symbol; or adds a syllable to the inherent vowel, as *sāmi* 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

* 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 exotick words, and that of the *Mārāmās* 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 *Aracan* 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 *Nāgarī* 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.

ă, ā, â, ăc.

OUR extended sound in *ail*, and its contracted one in *fond*, are the basis of these four vowels. The *first* is pronounced with an accent peculiarly acute by an inflection pretty far back of the tongue towards the palate, terminated by a kind of catch. It seems, however, to drop this distinction when followed by a *grave* accent, as *tārâ*, just; a property that it would appear to possess in common with the other vowels distinguished by *acute* accents. It is inherent in every vowel, which may be the reason why it is placed last in the alphabet. The accent of the *third* is as remarkably *grave* as the other is acute — the *second* forming a medium between both, being our broad vowel in *all*; while the *fourth* is a guttural analogous to the *Arabian kaf*; a suppression of the final utterance by which this is characterized as a consonant, being all that is necessary to form the sound before us.

i, î, it.

THE *two first* are accented in the same proportion as *ă* and *â* 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 *āpūn* 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, ù, 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 *āsaîñe* and *āsaîteri* 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 *Wācb'have*, and inflected by the two first of these vowels remains the same as in its unassociated form: but the *figma* 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 abbreviated in writing, as in the verbal terminations *ze* and *roe* 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.

aò, ao; 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 rotundity of the mouth." The two first may be often mistaken for the last; and, in some words, even for *ā* and *ā̇* when inflecting the other letters with *wāch'we* suspended. Like *u*, *ū*, the symbol in association with *wāch'we* when inflected with these four vowels, is redundant.

ait, aip; aich, aic.

Our diphthong in *ay*, 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.

auc.

THE diphthong of the *first* and *fifth* vowels already so fully described in the *system*, with the guttural termination of *āē*, 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.

* See Plate I, c.

āñ, ãñ.

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 *sāñbuñ* *.

in.

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

um, uñ.

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 *cumbup*, a *small eminence*, or rising ground. The nafal is frequently represented by a point above the letter.

āñ, ãñ, aim; aññ aiñ.

THE vowels of these nafals are in the same proportion as *āit*, *aich*, pronounced without the acute accent and abrupt termination by which they are respectively distinguished. The *obscure* nafal †, formed by a slight inflection 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 *cāimp'hā* the *earth* ‡. It

* See Plate I, d.

† This nafal appears to hold a middle place between the *dental* and *guttural* nafals considered as *finals*; with the last of which it has but one common type in the *system*.

‡ See Plate I, e; 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 *āññ* being suppressed; an abbreviation very common in the vowels and nafal 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 *aiñ* and *aiñ* are permuted with *è* and *e* when inflecting *ny*, *y* and the whole class of *āpāñ*; as *nyèñ*, *nyeh*, &c. and *aiñ*, when inflecting those letters with *wäch'bwe* suspended, and the class *āpāñ-wäch'bwe*; as *nywèñ*, &c. This last nasal, by an anomaly not to be accounted for, is very often written for *e*.

aiñ, aiñ.

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. *ā*, considered in its *syllabic initial* capacity, in its inflections of *ārwī* and *āsāirñe* with *wäch'bwe* suspended, is preceded by the fourth vowel, which, in this instance only, forms the symbol for *wäch'bwe*. The notation, therefore, for this deviation should be as follows: *oá, oa, oà, oac, oañ, oañ; o'i, o'i; o'e, o'e; o'āit, o'āip, o'āim, o'āin, o'āim; o'aich, o'aic, o'añ, o'añ.* 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, ù; aò, ao; o, ò*; they retain the same sound, as has been already observed, either with or without *wäch'bwe*.

THE following extract taken from a book entitled MĀNU SAṆGWĀN, or the *Iron ring of MĀNU*, is offered merely as a specimen of the notation here laid down. It scarcely from its insignificance, deserves a translation; however one is subjoined.

Māhāsāmādhā mān gri chāē crāwālā sānchyā praiñ braiñ tāiñ daiñ pit', tā
tāiñchā bnaic chhāwñ chye zād tächhe shaich'pā zād thāimāsāit chāgā
do go crā lo fi lo mu'gā nāiñ nāc cri gā blyāñ ā'bri zo myāc'bnā mu'rwe tā muñ
chā hmā myāc'chi myāc'bnā chāiñ'dwāñ pā nā chhe grao'rwe chāñ gre jwā colāc
co sup sāñ'rwe sāiñ shāñ jwā zād co phrāñ wāit chā tāiñ'chhā chhāñ bri zao āmyo
le'ba pārit'sāit do hnāñ che we chrāiñ rāiñ lyāc lāc up chyi hmā rādāñā sumbā
go bri'cho'rwe brāimma chā zao nāit figrā do go bri'cho tairñ dāiñ u hmā blyāñ
i tächhe shaich'pā thāimāsāit tārā chāgā go māhāsāmādhā mān gri ā crā pe
lo zād hnā*.

AND MĀNU said, "Oh, mighty Prince, MĀHĀSĀMĀDHĀ! if thou hast an inclination to hear and understand the words of the eighteen holy books which I brought from the gate of Chāc'crāwālā† 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 ear; and with the four friends‡ assembled and forming a circle, closing thy hands and making obeisance to the three inest-

* 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 NĀIR and SIKRĀ, supposed to possess the peculiar guardianship of mankind; and Brāimma, through an attribute, it would seem, of ubiquity.

valuable jewels* and prostrating thyself before BRĀIMMĀ, (and the two classes of beneficent genii) NĀIT and SIGRĀ and making known to them thy grievances (having performed all these acts, then) will I present unto thee, illustrious monarch, MAHĀSAMADĀ, 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 *Brāimmās* and *Māramās*; 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*

* *Phurā*, *Tārā Sānc'hā*,—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 sanguine expectation.

* EVERY writing that has hitherto come under observation has been full of the grossest inaccuracies; even those stamped by the highest authority—such as official papers from the king of *Ava* to our government. How far the *Pālit*, or sacred language in which their religious ordinances are written, may be exempted from this remark, it is impossible to say. The *Priests*, are almost the only people conversant in it, and few even among them are celebrated for the accuracy and extent of their knowledge: between *Rámu* and *Ist mabáá*, 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 *Ajam*, *Népal*, 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 cutlasses 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 coast of *Sumatra*, I understand they have been more successful: Dr. ROXBURGH having procured fromthence 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 employment 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 *Caout-chouc*, 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 scissars. 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 elasticity 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 *Cossimbazar* 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 thicknefs wanted. For the reasons above-mentioned, care muft be taken that one fold does not come in contact with another while wet.

HAVING obferved that moft of the patent catheters and bougies made with a folution of the elastic gum, whether in ether or in the effential oils, had either a difagreeable ftickinefs, or were too hard to admit of any advantage being derived from the elasticity of the gum; I was induced to make fome experiments with the milk towards removing thefe objections.

FROM that fluid by evaporation, I made feveral large fized bougies of pure gum, which from their over-flexibility were totally ufelefs. I then took fome flips of fine cloth covered with the gum which I rolled up until of a proper fize, and which I rendered folid by soaking them in the milk and then drying them. Thefe poffeffed more firmnefs than the former, but in no degree fufficient for the purpofe intended: pieces of ftrong catgut coated with the gum, I found to anfwer better than either.

BESIDES an effectual cloathing for manufacturers employed with the mineral acids, which had been long a defideratum, this fubftance under different modifications might be applied to a number of other ufeful purpofes in life, fuch as making hats, great coats, boots, &c. for failors, foldiers, fifhermen, and every other defcription of perfons who from their purfuits are expofed to wet ftockings; for invalids who fuffer from damps; bathing caps, tents, coverings for carriages of all kinds, for roofs of houfes, 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 commisioned 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*, *Raujmahal*, and *Bauglipore* hills as situations, where there is every probability of succeeding, being very fimilar 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. GROSBART, 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.

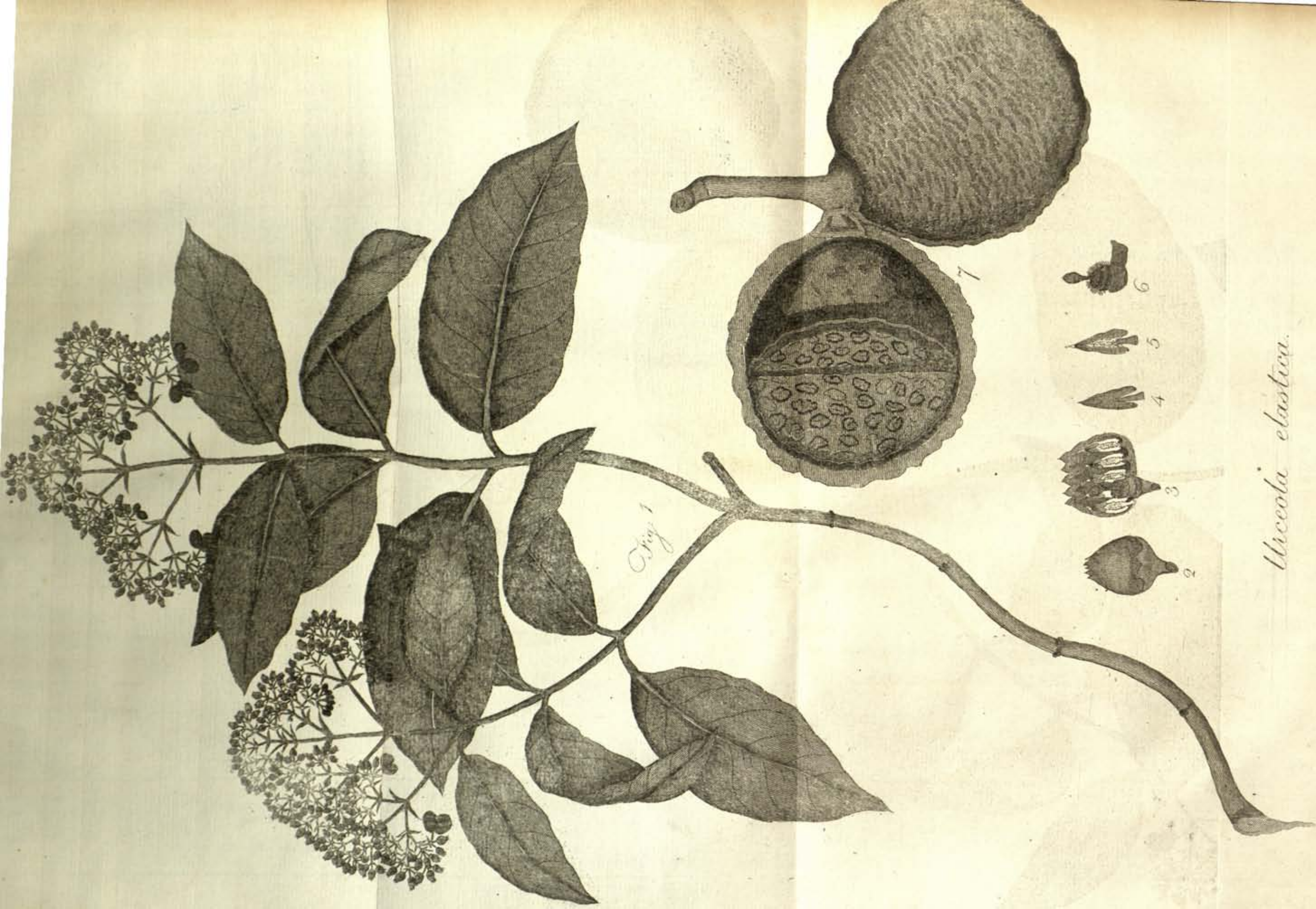


Fig. 1

Urtica elastica.

XIV.

A Botanical description of Urecola elastica, 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 *Monogynia* and comes in immediately after *Tabernaemontana*, consequently belongs to the thirtieth natural order, or class called *Contortæ* by LINNÆUS, 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 possesses 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 possess elasticity, inflammability, and are soluble in the essential oils without the assistance of heat.

IN a mere definition it would be improper to state what qualities the object does *not* possess, consequently, it must be understood that this substance ; is not soluble in the menstrua 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.

Braets, 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

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 Out-side of one of the stamens, - - - - -
- 5 Inside of the same, - - - - - } much magnified.
- 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 seed 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

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 semifluid state, but totally void of elasticity. In *America* the *Caout-chouc* 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, consequently 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 *Caout-chouc*, 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.

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

NITRIC æther I did not find a better menstruum than the vitriolic, consequently if the æther 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 æther.

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 æther 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 menstrua 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 tenaceous 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*, *alkohol*, fat and essential 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*.

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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 *Vicramadittya* 1750, corresponding to 1693 of the *Christian* æra. 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. JAYASINHA undertook the task, and constructed a new set of tables, which in honor of the reigning prince he named *Zeej Mahommedshahy*. By these almanacks are constructed at *Dehly*, 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 Mahommedshahy*, which follows, with a literal translation.

‘ PRAISE be to GOD, such that
 ‘ the minutely discerning genius of
 ‘ the profoundest geometers in ut-
 ‘ tering the smallest particle of it,
 ‘ may open the mouth in confession
 ‘ of inability; and such adoration,
 ‘ that the study and accuracy of as-
 ‘ tronomers who measure the hea-
 ‘ vens, on the first step towards ex-
 ‘ pressing it, may acknowledge their
 ‘ astonishment and utter insufficien-
 ‘ cy. Let us devote ourselves, at the
 ‘ altar of the *King of Kings*, hallow-
 ‘ ed be his name! in the book of
 ‘ the register of whose power the

بسم الله الرحمن الرحيم
 شناسی که خرد خورده بین مهندسان عقده
 کشادر ادای دقیقه ازان زبان اعتراف
 اعجز و قصور کشاید و سنایشی که فکر اصابت
 قرین را صدان فلک پیماهی باولین درجه
 آن شرح و بیان اقرار به تجر و نارسایی
 نماید شمار بارگاه شهنشاهی که طباق سموات
 بلند و رفیست چند از دفتر دیوان قدرت
 او تقدس اسماء و انجم و خورشید آسمان
 پیوند دینار و درهمی است محدود از خزینہ

' lofty orbs of heaven are only a few
' leaves; and the stars and that hea-
' venly 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 construct-
' ed the almanack of the various
' kinds of seeds and of fruits which
' it contains. And if he had not en-
' lightened the dark path of the ele-
' ments with the torches of the fixed
' stars, the planets, and the resplen-
' dent 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 preci-
' pices of ignorance.'

' From inability to comprehend
' the all-encompassing beneficence of
' his power, HIPPARCHUS is an
' ignorant clown, who wrings the

نازن ماطنات او تعاللات الاله اكر صحنات
زنج اقاليم زمين را بجدا ول انهار و رقوم
نجوم و اشجار مجلي و مزین نمي ساخت اسج
مستخرجي است تجراج

تقویم انواع حبیب و شمار نتوانستی نمود
و اگر راه ظلمت اباد عناصر را بمشاعل نداشت
و سیار تابدار و مهتاب و آفتاب نور بار ظاهر
نمیکرد و رسیدن بسر منزل مقصود و نجات
از ورطات غفلت و مهالک چه ممکن بود
از نار ساسی غور محیط قدر نشابر
خس خسی است بر ارم زن دست
افسوس و در اندیشه ارتفاع قدرش
بطلمیوس خفاشی از رسیدن بافتاب
حقیقت مایوس بر اهرین اقلیدس در بیان
اشکال صنایع او حرفی ناتمام و هزاران جمشید
کاشی چون نصیر طوسی در چختن سودای خام

‘ hands of vexation; and in the con-
 ‘ templation of his exalted majesty,
 ‘ PROTEMY 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 Ja-
 ‘ bour in vain.’

‘ BUT since the well-wisher of the
 ‘ works of creation, and the admiring
 ‘ spectator of the theatre of infinite
 ‘ wisdom and providence, SEWAI-
 ‘ JEYSING from the first dawning
 ‘ of reason in his mind, and during
 ‘ its progress towards maturity, was
 ‘ entirely devoted to the study of ma-
 ‘ thematical science, and the bent of
 ‘ his mind was constantly directed to
 ‘ the solution of its most difficult pro-
 ‘ blems; by the aid of the supreme arti-
 ‘ ficer he obtained a thorough know-
 ‘ ledge of its principles and rules.—
 ‘ He found that the calculation of the
 ‘ places of the stars as obtained from

انجامد خیرخواه اصناف آفرینش و نماشای
 کارگاه دانش و بینش سواهی جیستگاه
 از بدو فطرت و عنقوان شعور بفن ریاضی
 مشغوف و مالموف بود و امواره عمان
 طبعش بکشف دقایق و حل غوامض آن
 مصروف بنامید کردگار از وصال و قربانین
 آن حظی وافر و نصیبی کامل حاصل کرد
 چنان یافت که استخراج تقادیم کواکب
 که از زجهای متعارف مثل زج جدید سعید
 کورکانی و خاقانی و نسیمیات ملاچاند اکبر شاه
 و کتبههای هند می و زج فرنگی میشود اکثر
 و اغلب اوقات دور از مرصود و عیان می یابند

“ the tables in common use, such as the
 “ new tables of SEID-GOORGANEE
 “ and KHACANEE, and the *Tusheelat-*
 “ *Mula-Chand-Akber-shabee*, 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-

حصه ما رفته ايم كه حساب آن با مشاهد
 كم موافقت ميكنند و حال آنكه كارهاي سترگ
 ارباب ملل و خيال و اصحاب دين و دول بدان
 منوط و مربوط است و همين طور در اوقات
 ظهور و خفاي كواكب سيارات و ازمنه كه سونات
 و خسوفات اكثر تفاوت فاحش رو ميدهد
 اينهمچنين را بعرض حضرت قدر قدرت مهر
 سپهر ابهت و كامكاري غره ناصيه عظمت
 و شهر ياري و ريكتاي بحر نلافت كبري دري
 بي همناي فلک سلطنت عطسي خورشيد عظم
 مكر ششم مريخ رنج عطارد قلم

' est 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 centinel 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 myste-
 ' ries 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

تا بهید خدم سپهر آستان مشنری نگین کعبه ان
 پاسبان السلطان ابن السلطان الخاقان ابن
 الخاقان سکندر جاه ظل اسد بادشاه غازی محمد شاه
 لا زال مظفر افی المعمارک والمنازی رسانید
 فرمودند که چون آن دانای اسرار را درین
 امر مهارت تمام است مهندسان و منجمان فرقه
 اسلام و برهمنان و هندوان و منجمان فرنگ را
 جمع نموده و آلات رصدی ساخته بحقیقت کار
 وار سیده چنان سعی نمایند که این احتمال که در
 زمان محسوب امور مزبور و وقت مرصود
 آنها واقع میشود مرتفع گردد هر چند که این
 امر خطیر بود و مدت مدید شده که از راههای
 ذوالاقتدار کسی بپیر امون نگردیده و در فرقه

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 mar-
tyr-prince, whose sins are forgiven,
MIRZA ULUGA BEG to the pre-
sent, which comprehends a period of
more than three hundred years, had
any one of the kings possessed of
power and dignity, turned his atten-
tion to this object; yet, to accomplish
the exalted command which he had
received, he (JEYSING,) 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 *Samarcand*, agreeably to
the *Musulman* books: such as *Zat-*
ul-buluck, of brass, in diameter three
guz of the measure now in use, (which
is nearly equal to two cubits of the

اهل اسلام هم از زمان شاه شهید مغفور
مرزا الملق بیک تا این زمان که زیاده از سیصد
سال گذشتہ هیچ یکی از سلاطین ذی شان
وصاحب ثروتان بلند مکان باین کار متوجه
نگشته از برای بجای آوردن فرموده ارفع اعظمی
سراخجام امرامور را نطق اہمت بر میان
جان بسته چندی از آلات رصدی مانند انکه
در سمرقند ساخته بودند از روی کتب
اسلام در اینجا ہم ساخت ذات الحاق برنجی
بقطر سه کز راجع این عصر کہ قریب ضعف
ذراع اہل شرع است و ذات الشعبین
و ذات الشعبین و سدس فخری و شامہ
لیکن چون آلتہای برنجی را بسبب خردی
و عدم تقسیم بدقیق و لرزش خوردن و سیوہ
کشتن قطبہای و اینجا شدن مرکز دوایر

' *Coran*) and *Zat-ul-shobetein*, and
 ' *Zat-ul-fuchetein* 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 HIPPARCUS and
 ' PTOLEMY proved inaccurate, must
 ' have been of this kind; therefore he
 ' constructed in *Dar-ul-khelâset Shab-*
 ' *Jehanabad*, which is the seat of em-
 ' pire and prosperity, instruments of
 ' his own invention, such as *Jey-per-*
 ' *gâs* and *Ram-junter* and *Semrât-*
 ' *junter*, 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 stabi-
 ' lity, with attention to the rules of
 ' geometry, and adjustment to the

و احتمال وضع مقرری مطلوب گمانی نمی شود
 مدعا نیست

معلوم کرد که سبب درست نیامدن مقررات
 قدما مانند ابرخس و بطلمیوس امثال
 همین امور خواهد بود بنا بر آن در دارالخلافه
 شاه جهان آباد که محل دولت و اقبال است
 آئینه های اختراعی خود مثل چرخ ورام جنتر
 و سمرا ته جنتر که نصف قطر آن هر دو
 ذراع است و دقیقه آن یک و نیم شصت
 میشود از سنگ و آهک با استحکام تمام
 و زانیت مالا کلام بر عایت قوانین هندسی
 و تحقیق خط نصف النهار و عرض بلد و احتیاط
 در پیاپی و نصب آئینه های کار کرده تا بدین سبب
 خلل لرزش حلقه های دوا بر و سائیدن
 اقطاب و بیجا شدن مراکز و تفاوت و تباين
 بر طرف گردید و برای رصدها طریق مستقیم
 پیدا گشت و نظایر آن که در

meridian, and to the latitude of the place, and with care in the measuring and fixing of them; so that the inaccuracies from the shaking of the circles, and the wearing of their axes, and displacement of their centres, and the inequality of the minutes, might be corrected.

Thus an accurate method of constructing an observatory was established; and the difference which had existed between the computed and observed places of the fixed stars and planets, by means of observing their mean motions and aberrations with such instruments, was removed. And, in order to confirm the truth of these observations, he constructed instruments of the same kind in *Sewai Jeypoor* and *Matra*, and *Benares* and *Oujein*. — When he compared these observatories, after allowing for the difference of longitude between the places where they stood, the observations and calculations agreed. —

... Hence the determination to erect a similar observatory in other large cities, that to every person who is devoted to these studies, when they wish to ascertain the place of a star, or the relative situation of one star to another, might by these instruments be given the phenomena. But, being that in many cases it is necessary to determine past or future phenomena, and also that in the instant of their occur-

محسوب نوابت و عیار و مرصود آنها میشد
باستانت چنین آلات اوساط و حرکات واقعی
آنها دانسته مرتفع ساخت و برای استشهاد
حقیقت مدعا بمجموع قسم آلات در سواهی جی پور
و متبر و بنارس و اوچین ام بنا کرده شد
چون رصدی این امکانه را بعد از تفاوت
ملاحظه اطوال بلاد مقابله کردند محسوب
بامرصد یکی امد قصد بران مصمم شد که بمحین
طور آلات در شهرهای کلان و بکربم ساخته
و پرداخته گردد تا هر که آشنای این فن باشد
هرگاه که موضع کوکبی یا وضع کوکبی بسته
بکوکب دیگر خواهد که معلوم کند ازین آلاتها

Hence he determined to erect si-
 milar observatories in other large
 cities, that so every person who
 is devoted to these studies, when-
 ever he wishes to ascertain the place
 of a star, or the relative situation of
 one star to another, might by these
 instruments observe the phenome-
 na. But, seeing that in many ca-
 ses it is necessary to determine past
 or future phenomena, and also,
 that in the instant of their occur-
 rence, clouds or rain may prevent
 the observation, or the power and
 opportunity of access to an observa-
 tory may be wanting; he deemed it
 necessary that a table be construct-
 ed, by means of which the daily
 places of the stars being calculated
 every year, and disposed in a calen-
 dar, may be always in readiness.

In the same manner as the geo-
 meters and astronomers of antiqui-
 ty bestowed many years on the
 practice of observation, thus, for
 the establishment of a certain me-

بعیان مشاهده نماید اما چون اکثر احتیاج واقع
 میشود که اوضاع مستقبله و حالات ماضیه معلوم
 نمایند و نیز در وقت مطالب گاه باشد که ابر و باران
 مانع رصد شود یا اقتدار و فرصت وصول
 بر رصدخانه مفقود باشد

زیجی ساخته شود که از روی آن تقویمهای
 هر روزه کواکب سال بسال استخراج
 نموده در دفتر ثبت نماید که در هر وقت
 باشد چون مهندسان پیشین و راصدان
 سابق سالهای بسیار در شغل رصد بسر
 برده اند بنا بر طریق معهود بعد تیار ساختن
 این آلات هر روز در رصد کواکب کرده تقید
 میشد چون در یکار هفت سال گذشت
 مسموع گشت که در نزدیک باین زمان

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 observations 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

در فرنگ هم آلات رصدی درست کرده اند و اکابر انجبا و دانایان ایشان باینکار شگرف مشغول و متوجرانند کارخانه رصد در انجبا هنوز هم جاریست و همواره در تحقیق و قیاس این علم اندینا علیه از اینجا چند کس معتد عالم دانای این فن را بر فاقست منویان پادری بان سمت فرستاده زنج جدید انجبا که باسم لبر

سمیه یافته و سی سال گذشته که بتازگی مرتب گشته باز پچهای سابق آن دیار طلبند داشته ملاحظه نموده چون محسوب آرا با مرصود لحاظ

* *JAYSING* finished his tables in the year of the *Hijra* 1141, or A. D. 1728.

† *Dr 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 as-
 signing 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 gburry, 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 un-
 ring artificer, astronomical instru-
 ments have been constructed with
 all the exactness that the heart can
 desire, and the motions of the stars
 have, for a long period, been con-
 stantly observed with them, agree-
 ably to observation, the mean

کرده شده در تقویم قمر تفاوت نیم درجه ظاهر
 گردید اگرچه در سیارات دیگر آنقدر نبود و از من
 کسوفات و خسوفات را تا ربع دقیقه يوم
 که عبارت از پانزده میل باشد پیش و پس
 یافت و آنست که چون در فرنگ آلات رصدی
 باین برزگی و اقطار نیماخته اند حرکاتی که
 بتوسط آن دریافته اند پاره از تحقیق دور افتاده
 چون بتأید کار ساز تحقیقی اینجا آلات رصدی
 بحسب خواش دل چنانچه باید مرتب شد
 و نامدت مدید تحقیق حرکات کواکب و
 رصدی آن نموده از روی آن اوساط و
 تبدیلات برای آنها مقرر گشت

† 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 esta-
 * blished. He found the calculation
 * to agree perfectly with the observa-
 * tion. 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 ac-
 * curate rules, and most perfect me-
 * thods of computation, was construc-
 * ted, that so, 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 compu-
 * ted by it, they may arrive, as near
 * as possible to the truth, which, in
 * fact, is every day seen, and confirm-
 * ed in the observatory.

* It therefore becometh 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.

محسوب را با مرصود بی تفاوت یافت و هر چند
 که نوزیم کار رصد جاریست زنجی بنام نامی حضرت
 ظل الهی مشتمل بر اصول و احسن وجه
 درست کرده شد که چون بدان استخراج تفاوت
 و رویت ایام و کموفات و خسوفات و قرانات
 نمایند اقرب به تحقیق یا شد چنانکه این نعمتی
 بالفعل در رصدخانه مشاهد و مبین می شود و باید که
 ارباب این فن و در مقابل این نعمت عطی
 بدعا دوام دولت و خلافت چین بادشا، عالم به
 مشغول گشته معادوت دارین حاصل نمایند

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, $28^{\circ} 37' 37''$ N.* longitude, $77^{\circ} 2' 27''$ 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, $28^{\circ} 37'$, 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 *Zeej Mahomedshahy* is $28^{\circ} 37'$.

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 $3\frac{1}{10}$ 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

Ufuanab. 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 encrease 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 altitude, 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,		feet.	inches.
	- - - - -	24	6 $\frac{1}{2}$
Length of one degree on the circular wall.	- - - - -	00	5 $\frac{3}{4}$
Which gives for the whole circumference.	- - - - -	172	6
Circumference of the pillar	{ measured by a handkerchief carried round it: - - - - - }	17	0 $\frac{1}{4}$
	{ Deduced from its coloured divisions } { measured with compasses, }	17	2 $\frac{1}{4}$

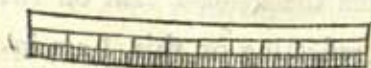
I do not see how observations can be made when the shadow falls on the spaces between the stone radii or sectors; and from reflecting on this, I am inclined to think that the two instruments, instead of being duplicates, may be

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 *Oujein*. It is situated at the southern extremity of the city, in the quarter called *Jeyfingpoorab*, where are still the remains of a palace of JAYASINHA, 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 $23^{\circ} 10' N$.

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	$23^{\circ} 11' 54''$
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 η taken at the house in town;	
at different latitude $32'' S$.	$23 11 28$
	<hr/>
	164
Latitude of SHAH DAWUL's <i>Durgah</i> , by medium of all ob-	
servations,	$23 11 41$
Difference of latitude camp and observatory,	$1 17$
Gives the latitude of the observatory,	$23 10 24$

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:

Latitude of the observatory,	-	-	-	-	° ' "
					23 10 24
Its complement, being the true altitude of the sun on the					
equator,	-	-	-	-	66 49 36
Refraction,	-	-	-	-	- 24
					<hr/>
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
					<hr/>

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 $\frac{1}{100}$ 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 *Encyclopedie. art. Refraction*.

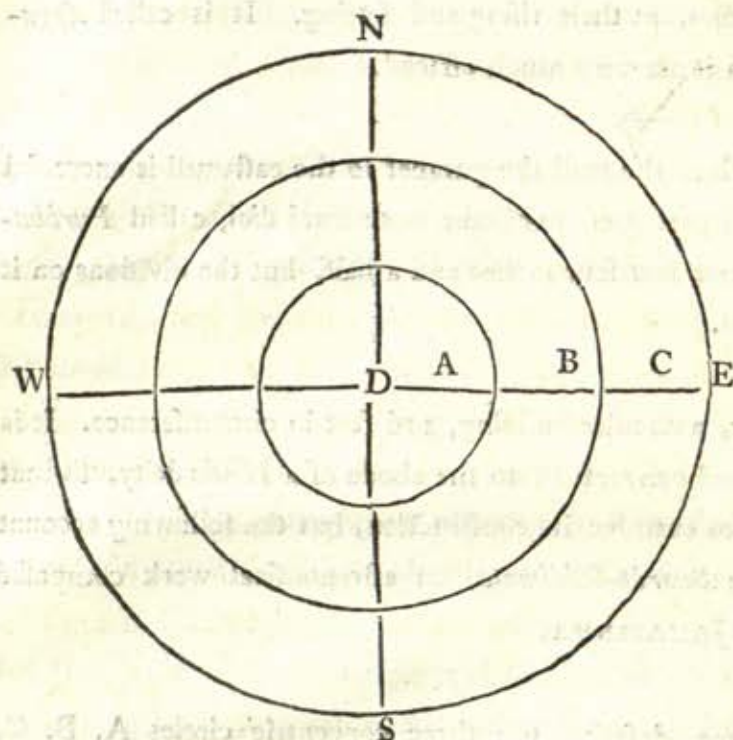
THIS instrument is called *Yâm-utter-bhitti-Yunter*. With one of the same kind at *Debly* (No. 4, *Debly* Observatory) in the year 1729, JAYASINHA says, he determined the obliquity of the ecliptic to be $23^{\circ} 28'$. In the following year (1730) it was observed by GODIN $23^{\circ} 28' 20''$.

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 *Agra-Yunter*. 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 *Purbha-Yunter*. Its length is two feet four inches and a half, but the divisions on it are almost totally effaced.

4. *Dig-anfa-Yunter*, a circular building, 116 feet in circumference. It is now roofed with tiles, and converted into the abode of a *Hindû* deity, so that I could not get access to examine its construction, but the following account of it is delivered in the *Semrât-Siddhanta*, 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-anfa*) 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. *Náree-Wila-Yunter*, 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 (*Náree-Wila*). On each of these ends a circle is described, the diameter of which in this instrument, is 3 feet $7\frac{1}{2}$ 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-Yunter*, also called *Náree-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 intersection. 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 (*krānti*) 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, *Oujein* 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-

KER and Mr. WILLIAMS, I have only a few remarks to offer, in addition to the account delivered by those gentlemen.

I. A, (of Sir R. BARKER's plate) is the *Semrat-Yunter*, 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 *gburry*. 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 *Rajah* 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 *Rajah'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-raje*) probably ought to be *Yunter* or *Yunter-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 $\frac{1}{10}$ 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 immoveable 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 *Sanſcrit* 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 *Semrat Sid-dhanta* 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-anſa-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 *Yām-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-Mahommedsbaby*. But here I should regret, that, not having access to the *Tabulæ Ludovicæ* 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-Mahommedsbaby*) convince me, that he will ascertain, better than I could have done, the point in question.

I. 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 *horary 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 *Mumussil*; 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 *node*, 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 these descended 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 *Nerbuddah*. There he fell in with RUNG RAW APPAH, Dewan 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 *Oujein* 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, *DON PEDRO DE SYLVA* is still alive at *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 *European* science. And as the means of promoting so desirable an end, those among the natives who have penetration to see, and ingenuousness to own its superior accuracy and evidence, ought to be cherished. Among those of the *Islamic* faith, *TUFFUZZUL HUSSEIN KHAN*, who by translating the works of the immortal *NEWTON*, has conducted those imbued with *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 *Jayanagar*, soon after our departure from *Oujein*: and with him the genius of *JAYASINHA* became extinct. *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. *BAILY* 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 *Cshetradersa*, which was inspected by Captain WILFORD's *Pandit* (*Asiat. Res.* v. 4. p. 178) was not confined to geometrical knowledge, of purely *Brabminical* 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: porcated, or ridged; the ridges longitudinal, and parallel.

to the future; in number, three equal, one unequal, the ridges not very prominent.

Alæ or wings—membraneous, 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 *Meloe Proscarabæus* of LINN. and a full grown one when dry and fit for use is to the *M. Veficatorius* in weight as $4\frac{1}{2}$ 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, *Turkey*; with a cylindrical, smooth, ten angled fruit. Also on the *Râm Turkey*; 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 *Turkey*—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.

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.

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-

ervation. 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.

R E F E R E N C E S.

- 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 *Calmuks*, the *Chinese*, the *Japponese*, 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, in them 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 etimological 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* é open.
 U—I always sound as in the word duck: using oo for its other sound, as in book.
 Ou—I sound 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, }
 Oe—I use to express the *French* U, } These two sounds, as far as I remember, 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 *Yæ*, is written *Ræ*: and the *Palli* name for their capital city *Amarapoora* is commonly pronounced *Amaapooya*. 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. stile themselves *Myammaru*. By the people of *Pegu*, they are named *Pummay*; by the *Karayn*, *Yoo*; by the people of *Cussay*, *Awasu*; by the *Cussay Shan*, *Kaman*; by the *Chinese* of *Yunan*, *Lau meen*; and by the *Aykobat*, *Aurwa*. 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 *Takain*, 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 *Rossawu*, from whence, I suppose, Mr. RENNELL has been induced to make a country named *Rossawu* 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 *Rovingawu*, the *Persians* call it *Rekban*.

THE third dialect of the *Burma* language is spoken by a small tribe called *Yo*. 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 *Tanayntharee*. These people commonly called by the *Burmas*, *Dawayza* 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.

I.	<i>English.</i>	<i>Myammau.</i>	<i>Yakain.</i>	<i>Tanayntharee.</i>	<i>Yo.</i>
1	Sun	Nay	—	—	—
2	Moon	La	—	—	—
3	Star	Kyee	Kyay	—	Kay
4	Earth	Myægyee	—	—	—
5	Water	Yæ	Ree	—	Ræ

<i>English.</i>	<i>Myammau.</i>	<i>Yakain.</i>	<i>Tanayntbaree.</i>	<i>Yo.</i>
6 Fire	Mee	—	—	—
7 Stone	Kiuk	—	—	Kiukay
8 Wind	Læ	Lee	—	—
9 Rain	Mo	—	—	—
10 Man	Loo	—	—	—
11 Woman	Meemma	—	—	—
12 Child	Loogalay *	Loofhee	—	—
13 Head	Kaung	—	—	—
14 Mouth	Pazat	—	—	Kanooæn
15 Arm	Læmmaung	—	—	—
16 Hand	Læk	—	—	Laik
17 Leg	Kiæthaloun	—	—	Saloongfa
18 Foot	Kiæbamo	—	—	—
19 Beast	Taraitzan	—	—	—
20 Bird	Hngæk	—	—	Hnap
21 Fish	Ngaw	—	—	—
22 Good	Kaung	—	—	—
23 Bad	Makaung	—	—	—
24 Great	Kyee	—	—	—
25 Little	Ngay	—	—	—
26 Long	Shay	—	—	Shæ
27 Short	Ato	—	—	To
28 One	Teet	—	—	—
29 Two	Hneet	—	—	—
30 Three	Thoum	—	—	—
31 Four	Lay	—	—	—

* Literally a little man.

<i>English.</i>	<i>Myammaro.</i>	<i>Yakain.</i>	<i>Tanayntbarce.</i>	<i>Yo.</i>
32 Five	Ngaw	—	—	—
33 Six	Kiouk	—	—	—
34 Seven	Kuhneet	—	—	—
35 Eight	Sheet	—	—	—
36 Nine	Ko	—	—	—
37 Ten	Tazay	—	—	—
38 Eat	Zaw	—	—	—
39 Drink	Thouk	—	—	—
40 Sleep	Eit	—	—	—
41 Walk	Xleen	Hlay	—	Hlay
42 Sit	Tein	—	—	—
43 Stand	Ta	Mateinay	—	Mateinahay
44 Kill	Thap	Sat	—	Afapa
45 Yes	Houkkay	—	—	—
46 No	Mahouppoo	—	—	—
47 Here	Decmaw	—	—	Thaman
48 There	Homaw	—	—	—
49 Above	Apomaw	—	—	Apobaw.
50 Below	Houkmaw	—	—	Auk

THE next most prevalent language in *India* beyond the *Ganges*, is what we call the *Siamnese*, a word probably corrupted from the *Sban* of the *Burmas*. The *Siamnese* race occupies the whole frontier of *Yunan*, 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 *Ney* which signifies little. By the *Burmas*, from the vulgar name of their former capital city, they are called *Toodaya*, by the people of *Pegu* they are named *Seem*: and by the Chinese of *Yunan* *Syianlo* or *Kyænlo*.

THE second dialect of the *Siamnese* 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 jay*, or great *Tai*, of Mr. LOUBERE. They have been long subject to the *Burmas*, who call them *Myelapshan*. By the people of *Pegu* they are named *Sawon*: *Thay* by the *Karayu*; *Looktai* by the *Kathee*shan; *Kabo* by the people of *Kathee* or *Cussay*; *Pawyes* by the Chinese; and to me they were named *Lau* by the *Siamnese* proper. Their country towards the north lies between the west side of *Yunan* and the *Erawade* or great *Burma* river, descending down its eastern bank for a considerable way: it then extends along the south side of *Yunan* till it comes to the *Loukiang* or river of *Martaban*, which forms its eastern boundary: on the south it extends to no great distance from *Martaban*: 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 *Siamnese* language is that of a people called by the *Burmas* *Kathee Shawn*; to themselves they assume the name of *Tai-loong* or great *Tai*. They are called *Meitay Kabo* by the *Kathee* or people of *Cussay*. They inhabit the upper part of the *Kiaynduayn* river, and from that west to the *Erawade*. They have in general been subject to the King of *Munnypura*; but at present are tributary to the *Burma* monarch.

II.	<i>English</i>	<i>Tai nay</i>	<i>Tai yay</i>	<i>Tai loong.</i>
1	Sun	Roen	Kawan	Kangoon.
2	Moon	Sun	Loen	Noon.
3	Stars	Dau	Lau	Nau.
4	Earth	Deen		Neen.
5	Water	Nam	Nawp or Naum	Nam.
6	Fire	Fai	Fai	Pui.
7	Stone	Hin		Heen.
8	Wind	Lom	Loum	Loom.
9	Rain	Fon	Foon	Poon
10	Man	Kon	Kon	Koon
11	Woman	Pooen	Pæyeen	Pawneen
12	Child	Dæknocæ	Lawon	Lookwoon
13	Head	Seeza	Ho	Hoo
14	Mouth	Pawk	Tfop	Pawk
15	Arm	Kayn	Komooce	Moo
16	Hand	Moo	Mooce	Pawmoo
17	Leg	Naung	Koteen	Hooko
18	Foot	Langteen	Swateen	Lungdin
19	Beast	Sawt		Nook
20	Bird	Noup	Naut	Nook
21	Fish	Plaw	Paw	Paw
22	Good	Dec	Lee	Wanoo
23	Bad	Maidee	Malee	Mowan
24	Great	To	Loung	Loong
25	Little	Layt	Laik	Unleek
26	Long	Yan	Yan	Anyou
27	Short	San	Lot	Unlot

	<i>English.</i>	<i>Tai nay.</i>	<i>Tai yay.</i>	<i>Tai loong.</i>
28	One	Noong	Noo	Aning
29	Two	So	Sang	Sowng
30	Three	Sam	Sam	Sam
31	Four	See	Shee	Shee
32	Five	Haw	Haw	Haw
33	Six	Hek	Houk	Hook
34	Seven	Kyæt	Sayt	Seet
35	Eight	Payt	Payt	Pæat
36	Nine	Kawo	Kaw	Kau
37	Ten	Seet	Sheet	Ship
38	Eat	* Kyeen kau	Kyeen kau	Kyeen kau
39	Drink	Kyeen nam	Kyeen nawm	Kyeen nam
40	Sleep	Non	Non	Non
41	Walk	Teeo	Hoe	Pei
42	Sit	Nauon	Nawn	Nung
43	Stand	Yoon	Lootfook	Peinung
44	Kill	Kaw	Po	Potai
45	Yes	O	Sai	Munna
46	No	Maifhai	Mofai	Motfau
47	Here	Teenee	Teenai	Teenay
48	There	Teenon	Teepoon	Ponaw
49	Above	Bonon	Teenaipoon	Nooa
50	Below	Kanglang	Teetai	

THE next language, of which I shall give a specimen, is that of the people,

* *Kan* 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 *Affam*; 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 *Muggaloos*, an appellation, 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*. *Kathee* 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.

III.	English.	Moitay.	English.	Moitay.	
1	Sun	Noomeet	13	Head	Kop Kok
2	Moon	Taw	14	Mouth	Seembaw
3	Stars	Towang Meezat	15	Arm	Pambom
4	Earth	Leipauk	16	Hand	Khoit
5	Water	Eefheen	17	Leg	
6	Fire	Mee	18	Foot with the ankle,	Kho.
7	Stone	Noong Loong	19	Beast	
8	Wind	Noosheet	20	Bird	Oofaik
9	Rain	No	21	Fish	Ngaw
10	Man	Mee	22	Good	Pawee or Pai
11	Woman	Noopee	23	Bad	Puttay
12	Child	Peeka	24	Great	Sauwec

<i>Englsh.</i>	<i>Moitay.</i>	<i>Englsh.</i>	<i>Moitay.</i>
25 Little	Apeekauk	38 Eat	Sat
26 Long	Afamba	39 Drink	Tawce
27 Short	Ataymba	40 Sleep	Heepce
28 One	Amaw	41 Walk	Kwuce
29 Two	Ance	42 Sit	Pummee
30 Three	Ahoom	43 Stand	Laypee
31 Four	Maree	44 Kill	Hallo
32 Five	Mangaw	45 Yes	Manee
33 Six	Torok	46 No	Nattay
34 Seven	Tarayt	47 Here	Mafhee
35 Eight	Neepaw	48 There	Ada
36 Nine	Mapill	49 Above	Mataakta
37 Ten	Tarraw	50 Below	Make

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 *Erawade* 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.

<i>IV. Englsh.</i>	<i>Koloun.</i>	<i>Englsh.</i>	<i>Koloun.</i>
1 Sun	Konce	4 Earth	Day
2 Moon	Klow	5 Water	Tooce
3 Star	Affay	6 Fire	May

<i>Englsh.</i>	<i>Koloun.</i>	<i>Englsh.</i>	<i>Koloun.</i>
7 Stone	Aloong	29 Two	Pahnee
8 Wind	Klee	30 Three	Patoon
9 Rain	Yoo	31 Four	Poonhee
10 Man	Kloun	32 Five	Poonhno
11 Woman	Patoo	33 Six	Poofouk
12 Child	Sæmee	34 Seven	Pooæfæ
13 Head	Mulloø	35 Eight	Pooæfay
14 Mouth	Mawkoo	36 Nine	Poongo
15 Arm	Maboam	37 Ten	Poohaw
16 Hand	Mukoo	38 Eat	Kayawæ
17 Leg	Manwam	39 Drink	Kowayæ
18 Foot	Kopaung	40 Sleep	Eitfha
19 Beast	Pakyoo	41 Walk	Hlayæshoe
20 Bird	Pakyoo	42 Sit	Own
21 Fish	Ngoo	43 Stand	Undoon
22 Good	Poælahoe	44 Kill	Say,oe
23 Bad	Sælahoe	45 Yes	Afhæba
24 Great	Ahlayn	46 No	Sechay
25 Little	Amee	47 Here	Næa
26 Long	Afaw	48 There	Tfooa
27 Short	Sooæhay	49 Above	Akloengung
28 One	Moø	50 Below	Akoa

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-

cence and industry. 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.

V. English.	<i>Passooko</i> .	<i>Maploo</i> .	<i>Play</i> No. 1.	<i>Play</i> No. 2.
1 Sun	Moomay	Moo	Mooi	Moomay
2 Moon	Law	Law	Law	Poolaw
3 Stars	Tiaw	Sheeaw	Shaw	Shaw
4 Earth	Katchaykoo	Kolangkoo	Kako	Lankoo
5 Water	Tee	Tee	Tee	Tee
6 Fire	Mee	Meeung	Meea	Mee
7 Stone	Loe	Loong.Noong	Loung	Loung
8 Wind	Kallee	Lee	Lee	Lee
9 Rain	Tachoo	Tchaetchang	Moko	Moko
10 Man	Paganyo	Pashaw	Pasha	Paploom or Pasha
11 Woman	Pomoo	Pommoo	Pummee	Pammoe

<i>English.</i>	<i>Passooko.</i>	<i>Maploo.</i>	<i>Play No. 1.</i>	<i>Play No. 2.</i>
12 Child	Pozaho	Poffaw	Napootha	Apoza
13 Head	Kozohui	Kohui	Kohui	Pokoohui
14 Mouth	Patako	Pano	Ganoo	Pano
15 Arm	Tchoobawlee	Tchoobawlee	Atfyoodoo	Tchoobawlee
16 Hand	Patchoo	Poitchoo	Kutshoo	Tchooafce
17 Leg	Kadoe	Pokaw	Kandoo	Kandoo
18 Foot	Konyawko	Kanyakoo	Kanyako	Kanyafaw
19 Beast	T'hoo	Too		
20 Bird	T'hoo	Too	Kalo	To
21 Fish	Nyaw	Zyaw	Ya	Ya
22 Good	Ngee tchaw maw	Ngee	Gyee	Gyee
23 Bad	Taw ngee baw	Nguay	Gyceay	Gyceay
24 Great	Pawdoo	Hhoo	Uddo	Doo
25 Little	Tcheeko	Tchei	Atfei	Atfei
26 Long	To atcho maw	T'ho	Loeya	Ato
27 Short	P'hoeko	P'hoe	Apoe	Apoe
28 One	Tay doe	Nadoe	Laydoe	Laydoe
29 Two	Kee doe	Needoe	Nee doe	Nee doe
30 Three	So doe	Song doe	Soung doe	Soung doe
31 Four	Looee doe	Leedu	Lee doe	Lee doe
32 Five	Yay doe	Yay doe	Yay doe	Yay doe
33 Six	Hoo doe	Hoo doe	Koo doe	Koo doe
34 Seven	Nooe doe	Noay doe	Noæ doe	Noædu
35 Eight	Ho doe	Ho doe	Ko doe	Kodoe
36 Nine	Kooee doe	Kooee doe	Kooee doe	Kooeedoe
37 Ten	Tatchee	Leitchee	Tafsee	Laytfee
38 Eat	Po,o	Aw	Ang	Ang

<i>English.</i>	<i>Paffooko.</i>	<i>Maploo.</i>	<i>Play No. 1.</i>	<i>Play No. 2.</i>
39 Drink	Oo	O	O	O
40 Sleep	Prammee	Mee	Mee	Mee
41 Walk	Latchoila	Leetalay	Rakuæ	Lakuæ
42 Sit	Tcheenaw	Tfeingaw	Tfayna	Tfayna
43 Stand	Tchoeto	Tchonto	Tfayna lagay	Gnaythoe
44 Kill	Klo	P'hee	Pætegui	Paythee
45 Yes	Maylee	Moayyoo	Moiyoo	Moithay
46 No	Tamay baw	Moæ	Moi	Moi
47 Here	Loee	Layee	Leeyo	Layee
48 There	Lubanee	Loo	Læyo	Læyo
49 Above	Mokoo	Mokoo	Læpanko	Læpanko
50 Below	Hokoo	Lankoo	Læpanla	Læpanla

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 *Bago*: 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 *Yunan*; *Lawoo* by the *Karayn*: and *Tarain* by the *Tailoong*. Their kingdom extends along the mouths of the two great rivers *Erawade* and *Tbanluayn*, or of *Ava* and *Martaban*, from the frontiers of *Arakan*, to those of *Siam*.

VI.	<i>English.</i>	<i>Moan.</i>		<i>English.</i>	<i>Moan.</i>
1	Sun	Knooay Tangooay	5	Water	Nawt
2	Moon	Katoo	6	Fire	Komot
3	Stars	Shanaw	7	Stone	
4	Earth	Toe	8	Wind	Kycaw

<i>Englsh.</i>	<i>Moan.</i>	<i>Englsh.</i>	<i>Moan.</i>
9 Rain	Proay	31 Four	Pon
10 Man	Pnee	32 Five	Soon
11 Woman	Preau	33 Six	Teraw
12 Child	Koon	34 Seven	Kapo
13 Head	Kadap	35 Eight	Tatfam
14 Mouth	Paun	36 Nine	Kaffee
15 Arm	Toay	37 Ten	Tfo
16 Hand	Kanna toay	38 Eat	Tfapoung. Poung, I believe is rice.
17 Leg	Kadot-prawt	39 Drink	Saung nawt. Nawt is water.
18 Foot	Kanat zein	40 Sleep	Steik
19 Beast		41 Walk	Au
20 Bird	Seen ngat	42 Sit	Katcho
21 Fish	Kaw	43 Stand	Kataw
22 Good	Kah	44 Kill	Taw
23 Bad	Hookah	45 Yes	Taukua
24 Great	Mor	46 No	Auto
25 Little	Bok	47 Here	Noomano
26 Long	Kloein	48 There	Taoko
27 Short	Klee	49 Above	Tatoo commooce
28 One	Mooi	50 Below	Tauamo.
29 Two	Bau		
30 Three	Pooi		

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 *euphoniæ 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 *Hindû* nation.

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

THE second dialect is that spoken by the *Hindûs* 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 *Rossawn*, 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 Yakain*, or stranger *Arakan*.

THE last dialect of the *Hindu*stane 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,

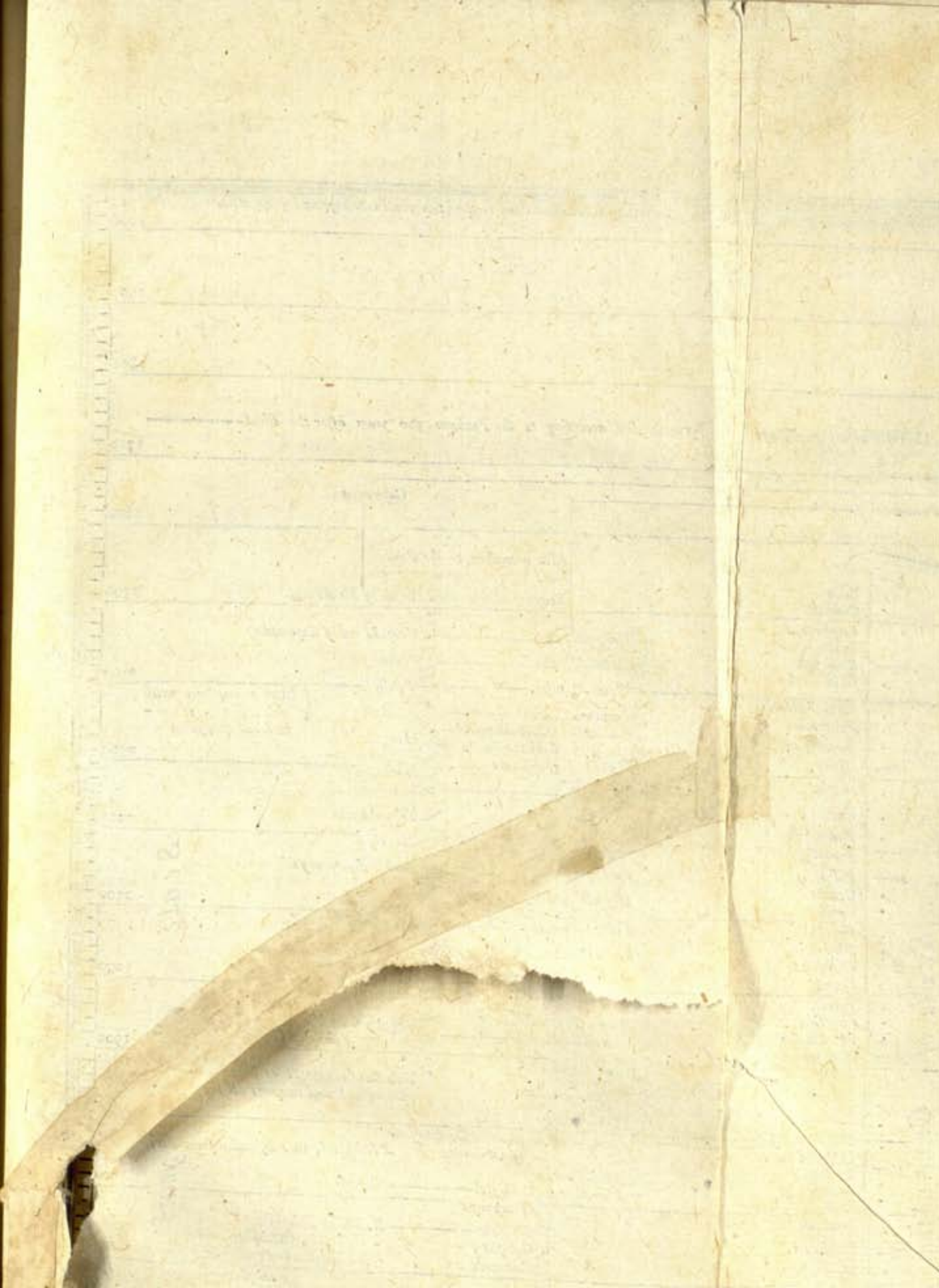
their kingdom had been overturned by the king of *Munnypura*, who carried away a great part of the inhabitants to his residence. When that was taken last by the *Burmas*, which was about fifteen years ago, this man was one of the many captives who were brought to *Ava*. He said also that *Banga* was 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 *Cashar*.

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

	<i>English.</i>	<i>Roinga.</i>	<i>Rossawn.</i>	<i>Banga.</i>
1	Sun	Bel	*Sooja	Baylee
2	Moon	Sawn	Sundra	Satkan
3	Stars	Tara	*Nokyotro	*Tara
4	Earth	Kool	Murtika	*Matee
5	Water	Pannæ	*Dsol	*Pannee
6	Fire	Auin	*Aagance	Zee
7	Stone	Sheel	*Sheel	*Heel
8	Wind	Bau	*Pawun	*Bo
9	Rain	Jorail	†Bistee	*Booun
10	Man	Manush	†Moonufa	*Manoo
11	Woman	Meealaw	*Stree	Zaylan
12	Child	Gourapa	*Balouk	Sogwo
13	Head	Mata	Mustok	Teekgo
14	Mouth	Gall	Bodon	Totohan

<i>English.</i>	<i>Rooinga.</i>	<i>Rossazun.</i>	<i>Banga.</i>
15 Arm	Bahara	*Baho	Palpoung
16 Hand	Hat	Osto	*Hatkan
17 Leg	Ban	†Podo	Torooa
18 Foot	Pau	Pata	Zamkan
19 Beast		Zoontroo	Safee Sangee
20 Bird	Paik	†Pookyee	†Pakya
21 Fish	Maws	Mootsoe	†Mas
22 Good	Goom	Gum	Hoba
23 Bad	Goom nay	Gumnay	Hoba nay
24 Great	Bodde	Dangor	Domorgo
25 Little	Thuddee	*Tfooto	Hooroogo
26 Long	Botdean	Deengol	Deegul
27 Short	Banick	*Batee	*Batee
28 One	Awg	*Aik	*Ak
29 Two	Doo	*Doo	*De
30 Three	Teen	*Teen	*Teen
31 Four	Tchair	*Tfar	*Saree
32 Five	Panfoee	*Pans	*Pas
33 Six	Saw	*Tfo	*Tfoe
34 Seven	Sat	*Sat	*Hat
35 Eight	Awtoa	†Asto	*Awt
36 Nine	Nonaw	*No	*No
37 Ten	Duffoa	*Dos	*Dos
38 Eat	Kau	*Kawai	†Kœk
39 Drink	Kaim	Kawo	†Peek
40 Sleep	Layrow	†Needraza	Hooleek
41 Walk	Pawkay	Bayra	†O-teea ootea

	<i>English.</i>	<i>Roſſinga.</i>	<i>Roffſon.</i>	<i>Banga.</i>
42	Sit	Boihow	†Boesho	†Bo
43	Stand	Tcheilayto	*Karao	†Oot
44	Kill	Marim	*Maro	*Mar
45	Yes	Hoi	Oir	Oo
46	No	Etibar	*Noay	*Naway
47	Here	Hayray	Eray	Erang
48	There	Horay	Horay	Orung
49	Above	Oonchalo	*Ooper	Gos
50	Below	Ayray	Hayray	†Tol.



NOAH SATYAVRATA

SHEM SHARMA

ATRI

ICSWACU

ARAM ARAMA according to the Puranas, contemporary with
for Essay on Egypt p. 380 and 382

SOMA or Lunus in a human shape
BUDHA

Arama died according to the Puranas 300 years after the Flood—

2700

Noah dies He was the Son of Satyawrata

Aila or Ailus or Puravara

Gopuvana

Cacchi
Ficachi
Bina

NAHUSHA
Yayati

Aila according to the Puranas
lived to a very great age and
Nrapucantha is called the son of his old age.

Shem dies

Anaranga

Para

5

Yadu

Pritha

Jananijaya

Crothi

Triamta or Satyawrata

Prachinwan

Vrajinwan

Dbandhumara

Pravira

Swathi

Ywanirva

Manayn

Ribadgn

MANDHATA

Abhayada

Chitaratha

Saanahi, Parucmta married the Daughter of Saivindha
in the pedigree of Crishna

Sudhyumna

10

Drava-sandhi

Babugava

SASAVINDHU

Bharata

Sanyati

Prutrowa

Anita

Abanyati

Dharma or Tama

SAGARA. In his time the Delta of the Ganges reached no
further than Hagly-point below Fulta

Raudravva

Usma

Anamanas

Ritayn

15

BHAGPRATHA

Rantibhara

Sitibha

Cacutha

Sumati

Ruchuca

RAGHU

Raibhi or Ailisa

Paravata

Pravradha

Dushmanta

Janodhya

Calambhida

BHARATA

Vidarbha

Sant'hana

Vitatha or BHARADWAJA

Canti

Sudaribang

Mavya

Drashti

Agnicarna

Vrabaschitra

Nirvati

Sidhraga

Sabira

Dasbarha

Mara

HASTI

Pyoma

Prathunca

Ajamda

30

Anbaraba

Ritcha

Dasaratha

Yajati

Samvarana

Sacuni

Nabhaga

CURU

Carambi

Aja

Jahnu

DEVARATA

Dataratha

Saratha

Devachitra

JAMADAGNI-GAUTAMA

Viduratha

Madhu

RAMA

Sarvabhauma

Anavaratha

Prachin

Joyatina

Curu

Tamruas

Radhica

Anuratha

Mabtranda

Ayanta

Purubtra

Abhayanda

Crishana

40

DARDANA'S Dardanus. See Essay on Egypt
p. 455.

Uparichara

45

Vainabritanai

Vrababha

Andhaca

Tecanda

Devatibi

Bhojama

Babandai

Rucba

Viduratha

Tracyanai

Elminda

50

Aradatani

Dita

Shura

PARASARA-Sanyati

Pratibha

Semi or Simi

VYASA

Santana

Praticbtra

ARJUNA

Uija

Swayambhaja

Sahadeva

Samdhava or Vrabadrtha

55

Sompi

JARA'SANDHA

GRISHNA

Srutarava

Sahadeva

60

Ayanti

Sompi

Bali-putra, from him
the Town of Rajagriha was denominated

Nramitra

Srutarava

65

Sucbtra

Sompi

65

Vrabatcarma

Srutarava

70

Sinajita

Sompi

70

Srutanjaya

Srutarava

75

Vipra

Srutarava

80

Sucb

Srutarava

85

Crishna

Srutarava

85

Suvrata

Srutarava

90

Dharma

Srutarava

95

Suvama

Srutarava

100

Dratena

Srutarava

105

Sumati

Srutarava

110

Suvata

Srutarava

115

Sumita

Srutarava

120

Saty jita

Srutarava

125

Vivajita

Srutarava

130

Ripunjaya

Srutarava

135

Shunaga

Srutarava

140

Cobowarna

Srutarava

145

Cibemadharma

Srutarava

150

Cibatragnya

Srutarava

155

Vidhura

Srutarava

160

Jatratra

Srutarava

165

Janaca

Srutarava

170

Ajaya

Srutarava

175

Nandwardhana

Srutarava

180

MAHA-NANDI

Srutarava

185

Sumitya

Srutarava

190

NB. All Kings &c. whose names stand upon
the same line and are thus connected
are positively declared in the Puranas to have
been contemporary.

CHANDRA-GUPTA ALEXANDER the Great.
Chandra-gupta is called Sandrocottus by Athenians
and Sandrocottus by the rest of the Historians of
Alexander.

Scale of
Generations
from SOMA to
CHANDRA-GUPTA

Scale of
Generations
from SOMA to
CHANDRA-GUPTA

Scale of
Generations
from SOMA to
CHANDRA-GUPTA

Scale of
Generations
from SOMA to
CHANDRA-GUPTA

Scale of
Generations
from SOMA to
CHANDRA-GUPTA

Engl

- 42 Sit
- 43 Stan
- 44 Kill
- 45 Yes
- 46 No
- 47 He
- 48 Th
- 49 At
- 50 Be

XVIII.

On the CHRONOLOGY of the HINDUS.

By Captain FRANCIS WILFORD.

THE accompanying genealogical table is faithfully extracted from the *VISHNU-purána*, the *BHĀGAWAT*, and other *Purānas*, 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 *Purānas*, to have kept the holy city in total darkness, till *MAHA-DEVĀ* 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 *Gimmerians* were kept in continual darkness by the interposition of immensely high mountains. In the *CA'LICA-purána*, it is said that the mountains have sunk considerably, so that the highest is not above one *yojana*, or five miles high.

WHEN the *Paurānics* speak of the kings of ancient times, they are equally extravagant. According to them, king YUDHISHT'HIR 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*, *Chaldeans*, 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 *Chaldeans*; 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 æra 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 *Asiatic Researches*, p. 274.

of *AKBAR*. Indeed, I am sometimes tempted to believe, from some particular passages in the *Puránas*, which are related in the true historical stile, 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 *Puráns* 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 *Udáyá*, 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 *Hindú* 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 a *MANWĀNTARA*. 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 *RĪSHIS*. 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 *CAHERMAN*, 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 *BRAHMA*'DICAS 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*, *ANGIRA*'s, *PULASTYA*, *PULĀHA*, *CRĪTU*, *DACSHA*, *VASISHT*'HA, *BHRĪGU* and *NA*'-*RADA*. These sprang 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 BRAHMA'DICAS. In the *Bhágawat* 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* BRAHMA'DICAS, whose names are, MARICHI, ATRI, ANGIRA'SA, PULASTYA, PULA'HA, CRĪTU 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, sprang from the BRAHMA'DICAS; their names are, SWAYAMBHUVA, SWÁROCHISHA, UTTAMA, TÁMASA, RAIVATA, CHACSHUSHA and SATYAVRATA or NOAH.

THE seven RĪSHIS sprang immediately from BRAHMA', and their names are, CASYAPA, ATRI, VOSISHTA, VISVAME'TRA, GAUTAMA, JAMADAGNI, and BHA'RADWA'JA. These holy penitents, by their salutary counsels and the example of their austerities, discover the path of rectitude and virtue to mankind. It is remarked of ATRI that he was both a BRAHMA'DICA and a RĪSHI; and perhaps the seven MENUS, the seven BRAHMA'DICAS, with the seven RĪSHIS are the same, and make only seven individual persons. The seven BRAHMA'DICAS were *Prajápatís*, 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 RĪSHIS 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 BRAHMA'DICAS 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 *Rishis*. SWAYAMBHWVA, or the son of the self existing, was the first MENU, and the father of mankind: his consort'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 existing." From him proceeded SWAYAMBHWVA who is the first MENU: they call him ADIMA (or the first, or *Protogonus*): he is the first of men, and *Parama-purusba*, or the first male. His help meet PRICRITI, 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 *Caliyug* 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 VISHNU in the character of BRAHMA'-RUPA JANARDANA, or VISHNU 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 middle of the fourth *Calpa*, fifty years of BRAHMA' being elapsed; and of the re-

(2) ADIMA is the feminine gender from ADIMA or ADIMAS.

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 *Manwantara* 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 furrounded 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, DÉVI, SURYA or the Sun, GANÉSA, VISHNU, and ISWARA. BRAHMA' has no peculiar *Calpa*: he is intimate to every one of them. Every deity in his own period, is CALSVA-RUPI or CHRONUS: we are now under the reign of the fourth CHRONUS. The western mythologists mention several ruling deities of that name. CALSVA-RUPI 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 *Purânas*, that all animals and plants are the LING or *Phallus* of the CALSVA-RUPI 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 disgorges the whole creation. Such is the origin of CHRONUS devouring his own offspring; of JUPITER disgorging it through a portion administered to him by METIS; and of CHRONUS castrating his own father. According to this, SWAYAMBHWA

is conjointly, and individually, BRAHMA', VISHNU, and ISA' or MAHA-DEVA. To SWAYAMBHUVA were born three daughters, A'C'U'TI, DE'VA-HU'TI, and VIS'RUTI or PRASUTI'. BRAHMA' created three great *Prajapatis*, to be their husbands; CARDAMA, DACSHA, (the same who was also a BRAHMA'DICA,) 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 benevolent 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 mystically from his navel, VISHNU from his left, and SIVA from his right side. It is declared in the *Puranas*, that ISWARA cut off one of the heads of BRAHMA', who being immortal, was only maimed. The same mystical rancour 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 daughter 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 *Puranas*, that from CARDAMA, DACSHA, and RUCHI, the earth was filled with inhabitants: yet in the same *Puranas* we are told, that BRAHMA' being disappointed, found it necessary to give two sons to ADIMA', from whom, at

last, the earth was filled with inhabitants. These two sons were PRIYAVRATA and UTTA'NAPADA, who appear to be the same with CARDAMA and RUCHI. Here the antediluvian history assumes a different shape; and the *Purānics* abandoning their idle tales of the seven MENUS, and renovations of the world between the time of SWAYAMBHUYA and the flood of SATYAVRATA, present us with something more consistent with reason and historical truth; but which at once overthrows their extravagant fabrick. 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' or I'va. | I. <i>Protogonus</i> , synonymous with <i>Adim</i> : <i>Aion</i> or <i>Æon</i> , from <i>I'va</i> or <i>I'vam</i> , in the second case. |
| II. PRIYAVRATA. He married BARRISHMATI, the daughter of VISVA-CARMA, the chief engineer of the Gods. | II. <i>Genus</i> , <i>Genea</i> . |
| III. AGNIDHRA and his seven brothers, whose names signify fire and flame. By one wife he had three sons: they became <i>Menus</i> ; and were named, UTTAMA, TAMASA, and RAIVATA. By another wife, AGNIDHRA had nine sons, who gave their names to the mountainous tracts of NABAHI. | III. <i>Phos</i> , <i>Phur</i> , <i>Phlox</i> ; that is, light, fire, and flame. |

- IV. CIMPURU^{SH}A, HARI^{VAR}SHA, IV. THEY begat sons of vast bulk,
 ILA^VARTA, RA^{MA}NACA, CU- whose names were given to the
 RU, BHAD^RASVA, CE^TUMA^{LA} mountains on which they seiz-
 and HIRAN^MAYA. ed, viz: *Cassius, Libanus, Anti-*
 V. RĪSHABHA, son of NABA^{HI}. V. *Memrumus, Hypsuranius, and U-*
 VI. BHARATA, who gave his name V. *sous.*
 to the country of *Bharata-varsha*. VI. *Agræus, Halicæus.*
 VII. SUMATI, DHUMRA - CE^TU, VII. *Chrysaor.*
 whose name signifies a fiery me-
 teor.
 VIII. DE^VAJITA, } said by some VIII. *Technites, Geinus Autochton.*
 9. PRATIHARA, } to be brothers.
 10. PRATIHARTA, } The names of
 the two last
 imply beating,
 hammering,
 &c.
 IX. AJA and BHUMA^{NA}. IX. *Agrowerus, or Agrotēs.* AJA in
 THEN follows a list of sixteen *Sanscrit*, is synonymous nearly,
 names, supposed by some to be so with *Autochton*; and BHUMA⁻
 many generations in a direct line; NA answers to *Agrowerus* and
 by others, this is denied:—but as *Agrotēs.*
 nothing is recorded of them, they
 are omitted.

THE posterity of ADIMA or ADIM (for the letter *a* in this name has ex-

actly the sound of the *French* *e* in the word *j'aime*) through UT TA' NAPA' DA, is as follows :

I. ADIM and I'VA. I'VA sounds exactly like EVE pronounced as a dissyllable E-VE.

II. UT TA' NAPA DA. He had two wives, SURUCHI and SUNITI: by the first he had UTTAMA, and by the second DHRUVA. UT TA' NAPA' DA 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 *Cuvéras*, 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 SWAYAMBHUA 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 PUSHPARNA.

V. PUSHPARNA had by his wife DOSHA, three sons; and by NADWALA, 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 *Bráhmens*; 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 PRĪTHU.

X. PRĪTHU. Gods and men came to make obeisance to him, and celebrate his appearance on earth. He married a form of the goddess LACSHMI. In his time, the earth having refused to give her wonted supplies to mankind,

PRĪTHU 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 necessities of life, not only to mankind in general, but to PRĪTHU himself, whose wife she was in a human shape. PRĪTHU 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 PRĪTHU cut down whole forests, levelled the earth, planted orchards and sowed fields with all sorts of useful seeds. From her husband PRĪTHU, the earth was denominated PRĪTHWĪ.

PRĪTHU 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 *Purānas*, 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. PRĪTHU 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 *Prāchi*, or the east, and built the town of *Rājgrīha*, now *Rāj-mehal*; DHUMRACEṢHA, who ruled in the south, as VRICA did in the west, and DRAVINĀSA in the north.

XII. VIJITĀSVA had by one of his wives three sons, called PAVACA, PAVAMAÑA and SUCHĪ, all names of fire. He became *Antardhāna* 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 HAVIRDHĀNA. HAVIRDHĀNA married HAVIRDHĀNĪ, by whom he had six children, known by the general appellation of *Prachīna-barhi*.

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 DHRUVA into heaven. And here ends the line of UTTANAPĀDA, which I now exhibit at one view, with some variations.

- I. SWAYAMBHUVĀ OF ADIM.
- II. UTTĀNAPĀDA, who was probably the same with RUCHI.
- III. DHRUVA, eminent for his piety.
- IV. VATSARA.
- V. PUSHPARNĀ, called also RIPUNJAYA.
- VI. CHACSHUSHA—MENU.
- VII. ULMACA OF URU.
- VIII. ANGA.
- IX. VENA.
- X. PRĪTHU, supposed to be NOAH.
- XI. VIJITASVA.

- XII. HAVIRDHANA. - - - - SWAYAMBHUA dies.
 XIII. VARISHADA.
 XIV. The ten PRÁCHĒTAS. - DHRUVA is translated into heaven.

By supposing PRĪTHU 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. SWAYAMBHUA or ADAM lived 223 years after the birth of NOAH, according to the computation of the *Samaritan Pentateuch*; and it is said of PRĪTHU, that the EARTH having assumed the shape of a Cow, he made use of this grand-ancestor SWAYAMBHUA 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 PRĪTHU.

THE only material difficulty in supposing PRĪTHU 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 *Purāṇics* insist that SATYAVRATA had many before the flood, but that they perished with the rest of mankind, and that SHARMA or SHAMA, CHARMA, and JYA'PATI 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 ADAM and I'VA.

SWAYAMBHUYA OF ADIMA.

I MENU

1 PRIYAVRATA

2 UTTANAPADA

3 AGNISHRA supposed the same with — SWAROCHISA — — 3 DHRUVA

II MENU

4 NABHI

4 VATSARA

UTTAMA

5 RISSHABHA

III MENU

5 PUSHPARNA

6 BHARATA

TAMASA

6 CSHACSHUSA

IV MENU

7 SUMATI

7 ULMACA

RAIVATA

8 DE'VAJITA

V MENU

8 ANGA

9 AJATA

9 VENA

CSHACSHUSA

VI MENU

10 PRITHU

Noah's Flood

SATYAVRATA

VII MENU.

This table completely overthrows the system of the *Menwantaras* previous to the flood; for it is declared in the *Puranas*, that at the end of every Men-

Wantara the whole human race is destroyed, except one MENU, who makes his escape in a boat with the seven RĪSHIS. But according to the present table, SWAYAMBHUA went through every *Menwantara*, and died in the sixth. DHRUVA also, saw five *Menwantaras*, and died on the sixth. UTTAMA, TAMASA, and RAIVATA, being brothers, lived during the course of several *Menwantaras*; and when UTTAMA made his escape in a boat, besides the seven RĪSHIS, he must have taken with him his two brothers, with DHRUVA and SWAYAMBHUA. Of these MENUS, more little is recorded in the *Purānas*, than that they had a numerous offspring; that certain *Devas* 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 *Purānas* 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'nāt'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'nāt'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 *Avant* 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 *Cymri* 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. *Nag'nát'ba-s't'ban*, or the place of the *Nag'nát'b*, or lord of the Elephantine race, is well known to the antiquaries of *Juvernica*.

DURING the sixth *Dynasty* came to pass the famous *churning of the Ocean*, which is positively declared in the *Puránas* 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*, *Swéta-dwip*, or *Cshira-dwip*, 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 *Brahmens* themselves acknowledge, that they are not natives of *India*, but that they descended into the plains of *Hindustan* through the pass of *Heri-dwar*.

THE old continent is well described in the *Puránas*, 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-st'ban*, 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, (*) 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 **SWAYAMBHUA** are represented in the *Parānas*, as living in the mountains to the north of *India*, toward the sources of the *Ganges*, and downwards as far as *Seri-nágara* and *Hari-dwár*. 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 *Debli*, 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 *CHANDRA-GUPTA*, who was contemporary with *ALEXANDER* the Great. *BUDDHA*, the grand son of *ATRI*, married *ILA*, daughter of *SATYAVRATA* or *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 cholerick saint called *DURVA'SAS*. He was a portion of *MAHA-DE'VA*, 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 *Cusba-dwipa*, destroyed all the animals and vegetables. *ARAMA* the son of *SATYAVRATA*, (and consequently the *ARAM* of scripture,) who was hunting through these mountains, was involved with his party in the general

conflagration; a punishment inflicted, it is supposed, for his having inadvertently wounded the foot of *Durvásas* with an arrow. The death of ARAMA happened three hundred years after the flood, according to the *Purānas*, * as noticed in a former essay on *Egypt*.

CHANDRĀ'-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 Athenæus. Sir WILLIAM JONES, from a poem written by SOMADĒVA, and a tragedy, called the Coronation of CHANDRA or CHANDRĀ'-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 *Mudrā-Rācshasa*, or the *Seal of RĀ'CSHASA*, which is divided into two parts: the first may be called the coronation of CHANDRĀ'-GUPTA; and the second, the reconciliation of CHANDRĀ'-GUPTA with MAMTRI-RĀ'CSHASA, the prime minister of his father.

THE history of CHANDRA-GUPTA is related, though in few words, in the *Viṣṇu-purāna*, the *Bhagawat*, and two other books, one of which is called *Brāhatcat'hā*, and the other is a lexicon called *Cāmandaka*: the two last are supposed to be about six or seven hundred years old.

IN the *Viṣṇu-purāna* we read, “ unto NANDA shall be born nine sons:

(*) Essay on *Egypt*, in the *Asiatick Researches*, Vol. 3d p. 38.

(†) *Asiatick 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 *Sūdrī*, NANDA shall be born. His eldest son will be called SUMALYA, and he shall have eight sons more: these, a *Brāhmen* (called COTILYA, VATSĀYANA, and CHĀNĀCYA in the commentary,) shall destroy. After them a MAURYA shall reign in the *Cālī-yug*. This *Brāhmen* will place CHANDRA-GUPTA on the throne.” In the *Brāhatcat'hā* it is said, that this revolution was effected in seven days, and the nine children of NANDA put to death. In the *Cāmandaka*, CHĀNĀCYA is called VISHNU-GUPTA. The following is an abstract of the history of CHANDRA'-GUPTA from the *Mudrá Rācshasa*.

NANDA king of *Prācī*, was the son of MAHĀ NANDI, by a female slave of the *Sūdra* tribe: hence NANDA was called a *Sūdra*. He was a good king, just and equitable, and paid due respects to the *Brāhmens*: he was avacious, 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 CRĪSHNA. By the strength of his arm he subdued all the kings of the country, and like another PARASU-RĀMA destroyed the remnants of the *Cshettris*. He had two wives, RATNAVATI, and MURA. By the first he had nine sons, called the SUMALYĀDICAS, from the eldest whose name was SUMALYA, (though in the Drama, he is called SARVARTHASIDD'HI:) 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 imbecillity 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-RĀCŚHASA, 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 corse, 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-DĀS, a king of a small domain in the western part of *India*, beyond the *Vindhyan* hills, the capital whereof is called *Vicat-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 SUVIDHA. MANTRI-RĀCŚHASA 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 SACATARA to a beautiful *reservoir*, under a large spreading tree, near a cave in the hills, called *Pátalcandara*, 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 *Pátalcandara*. 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, VICATARA 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 *Bráhmén*, 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 *Shicá*, 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 *Népal*, called PARVATÉSWARA, 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 *Práchi*, in case they should be successful. PARVATÉSWARA 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 *Indoscythians*, the people of *Camboja* or *Gazni*, the *Cirátas* or inhabitants of the mountains to the eastward of *Nepal*, 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 *Sumalyádicas* and that a decent allowance should be given to the *Mauryas*, or children of MURA; but the *Sumalyádicas*, 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 saved by the moon: but to resume the narrative.]

PARVATĒSWARA took the field with a formidable army, accompanied by his brother VIROCHANA and his own son MALAYA-CĒTU. The confederates soon came in sight of the capital of the king of *Prāchi*, 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 *Vindhyan* mountains, and became an anchorite. RĀCASHA went over to PARVATĒSWARA*. CHANDRĀ-GUPTA being firmly established on the throne, destroyed the *Sumalyādicās*, 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 *Prāchi* to PARVATĒSWARA, who being unable to enforce his claim, returned to his own country, meditating vengeance. By the advice of RĀCASHA he sent a person to destroy CHANDRĀ-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 PARVATĒSWARA, which the villain accordingly effected. RĀCASHA urged MALAYA-CĒTU to revenge his father's death, but though pleased with the suggestion, he declined the enterprize, representing to his counsellor, that CHANDRĀ-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 established his authority, that no attempt could be made against him with any prospect of success.

IN the mean time, VISHNU-GUPTA, being conscious that CHANDRĀ-

(*) RĀCASHA, on hearing of the death of SACATARA returned, and became prime minister of UGRADHANWA.

GUPTA could never be safe so long as he had to contend with a man of RĀCASHA'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-DĀ's, an intimate friend of RĀCASHA. VISHNU-GUPTA advised CHANDRĀ-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 RĀCASHA, and that if he would follow his advice, he would point out to him the means of doing it. CHANDANA-DĀ's assented, though, from the known inveteracy of RĀCASHA against CHANDRĀ-GUPTA, he had little hope of success. Accordingly, he and VISHNU-GUPTA betook themselves privately to a place in the northern hills, where RĀCASHA 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. RĀCASHA was astonished when he heard of his friend's resolution, and used every endeavour to dissuade him from it; but CHANDANA-DĀ's told him he was determined to perish in the flames with VISHNU-GUPTA, unless he would consent to be reconciled to CHANDRĀ-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 RĀCASHA, to whom he bowed respectfully, and made an offer of delivering up his sword. RĀCASHA remained a long time inexorable, but at last, overcome by the joint entreaties of VISHNU-GUPTA and CHANDANA-DĀ'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 CHANDRĀ-GUPTA reigned afterwards many years, with justice and equity, and adored by his subjects.

By *Práchi* [in *Sanfrit*,] 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 *Práchi*, 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-mèhal* and the western branch of the *Ganges*; the second includes *Bengal*, the greatest part of which is known in *Sanfrit* under the name of *Gancara-defa*, 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 *Parvaim* 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 *Canden* or *Calden* to this day: it is called *Kurden* in the *Ayeen Ackbery* (*).

THE capital city of *Práchi* proper, or the western part of it, is declared to be *Ráj-griha*, or the royal mansion. According to the *Puranas*, it was built by a son of king *PR ĪTHU* called *HARYACSHA*. It was taken afterwards by *BALA-RĀMA*, the brother of *CR ĪSHNA*, 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 *Báli-putra*, because a *Putra*, or son of *BÁLI* resided in it.

* Vol. 3. page 264.

From *Bali-putra*, the Greeks made *Pali-potra*, 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 *Sarafenî*. Their chief cities were *Metbora* and *Clisobora*; the first is now called *Mutra* (*), the other *Muza-nagar* by the *Musulmans*, and *Calisa-pura* by the *Hindus*. The whole country about *Mutra*, is called *Surasena* to this day, by learned *Bráhmens*.

THE *Indian HERCULES*, according to CICERO, was called *BELUS*. He is the same with *BALA* the brother of *CRISHNA*, 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-RÁMA*. 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 c*, 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 *Puránas*,

(*) In *Sanscrit*, it is called *Mat'buva*.

IN the *Gangá-mabatmya*, in which all places of worship, and others of note on the banks of the *Ganges* are mentioned, the present town of *Rāj-mēhal*, is positively declared to be the ancient city of *Rāj-griha* of the *Purānas*, the capital of *Prāchi*, which afterwards was called *Bāli-putra*.

Rāj-griha, and *Rāj-mēhal* in *Persian*, signify the same thing. It is also called by the natives *Raj-mandalam*, and by *PTOLEMY* *Palibotbra-mandalōn* 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-mandel*, for *Cholo*, or rather *Jala-mandal*.

HERE I must observe, that the present *Rāj-mēhal* 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-mēhal* in *January* last, I was desirous of making particular enquiries on the spot, but I could only meet with a few *Bráhmens*, and those very ignorant: all they could tell me was, that in former ages *Rāj-mēhal* or *Rāj-mandal* 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 East, had swallowed it up; and that the present *Rāj-mēhal*, 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-Rācāśa*, it is declared, that the city in which CHANDRĀ-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 *Hirāṇya-bāha*, or *gold-wasting*, 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 *Hirāṇya-bāha*, from which the Greeks made *Erannoboas*, is not a proper name, but an *appellative*, (as the Greek *Chrysorhoas*,) 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 *Cossanus* of ARRIAN, or *Cossogus* of PLINY, is not the river *Coosy*, but the *Cossan* or *Cattan*, called also *Cossay*, *Cossar* and *Cassag*, which runs through the province of *Midnapoor*, and joins the remains of the western branch of the *Ganges* below *Nanga-buffan*.

THE *Erannoboas*, now the *Coosy*, 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, *Purāna-bāhab*, the *old Coosy* 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-gunge*. From *Nabob-gunge* 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, *Báliputra* was situated near the confluence of the old *Coofy* with the *Ganges*, and on the spot where the villages of *Mynyaree* and *Bissuntpoor-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 *Debli*, 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 *Allabad*; and from thence with an easterly course as far as *Palibothra*; thence to the sea (according to the *Chrestomathia* from STRABO,) in a southerly direction. No other place but that which we have assigned for the site of *Báli-putra*, answers to this description of ARTEMIDORUS.

PLINY, from MEGASTHENES, who, according to STRABO, had repeatedly visited the court of CHANDRA-GUPTA, says, that *Palibothra* was 425 Roman

* 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 *Bráhméní* 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 *Panjábi cofs*: thus the distance from *Labor* to *Multan*, is reckoned, to this day, to be 145 *Panjábi*, or 90 *common cofs*.

IN order to ascertain the number of *Brábméní cofs*, reckoned formerly between *Allahabad* 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 *Brábméní cofs*, or 417.18 *British miles*; and this will bring us to within *two miles* of the confluence of the old *Coosy* 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 *Coosy* with the *Ganges*, and *Injellee* 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 *Tuso*, now the *Tonse* with the *Ganges*.

Tuso, now the *Tonse* (see Major *RENNELL*'s course of the *Ganges*.)

CINDIA, now *Conteeah*.

SAGALA, (in *Sanscrit* *Suchēla*, but in the vulgar dialects *Sokheila*,) now *Vindhya-Vāṣni* near *Mirzapoor*.

SAMBALACA, in *Sanscrit* *Sammallaca*: 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, *Sammallaca* was frequented by a prodigious concourse of merchants and all sorts of people, infomuch, that it was considered as the greatest fair in the country. This place is mentioned in the *Hari-cshētra-mabatmya*, which contains a description of the principal places of worship in north *Babar*.

BORCECA, now *Borounca*, opposite to *Bar* and *Rajowly*, near *Mowab* 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 *Bbur* tribe, once very powerful in this country.

SIGALA, *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 *Echāc-dēs*, or country of *Echāc*, or, as it is written in the maps *Etcbauc*: there are five or six places of this name in the mountains of *Ramgur*. The river *Fulgo* is the

OREOPHONTA. [*Harárpunt* or *Haryárpunt* in the vulgar dialects; in *Sanscrit* it is *Haráarpaña*, from *Hara*, and *Arpaña*, which implies a piece of ground consecrated to *HARA* or *MAHÁDEVA*. The word *Arpaña* is always pronounced in the spoken dialects *Arpunt*; thus they say *Crishnarpunt*.] It is now *Rangamatty*. Here was formerly a place of worship, dedicated to *MAHÁDEVA* 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 *Musulmans*, 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.

AGA-NAGARA literally the *Nagara* 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-dwip*: the true name is *Agar-dwip*. A few miles above *Aga-Nagara*, was the city called *Catadupe* by *ARRIAN*, from *Catwa-dwip*, a place famous in the *Puranas*. It is now called *Catwa*.

GANGES-REGIA, now *Satgaurw*, 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 *Satgaurw*, I believe it should be *Sátgaurw*, or the *seven villages*, because there were so many consecrated to the seven *RĪSHIS*, and each of them had one appropriated to his own use.

PALURA now *Pálarab* or *Pollerab*, 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-basan* or *Nagam-bassan* fell into the sea toward *Ingellee*. From *Nagam-básson*, the western branch of the *Ganges* was denominated *Cambuson Ostium* by the *Greeks*. This place is now

ridiculously called *Nanga-bassan* or the naked abode; whereas its true name is *Naga-báfan*, or the abode of snakes, with which the country abounds.

SIR WILLIAM JONES says, "the only difficulty in deciding the situation of *Palibotbra* to be the same as *Pátali-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 *Palibotbra* stood at the junction of the *Ganges* and the *Erannoboas*; but this difficulty has been removed, by finding in a classical *Sanscrit* book near two thousand years old, that *Hiranyabábee*, or *golden armed*, which the *Greeks* changed into *Erannoboas*, or the river with a lovely murmur, was in fact another name for the *Sonā* 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 *Hiranyabábee* be, as I conceive it is, not the proper name of a river, but an *appellative*, derived from an accident common to many rivers.

Pátali-putra was certainly the capital, and the residence of the kings of *Magadha* or *South Bebar*. In the *Mudrá-Rácschasa*, of which I have related the argument, the capital city of *CHANDRA-GUPTA* is called *Cusumapper* throughout the piece, except in one passage, where it seems to be confounded with *Pátaliputra*, as if they were different names for the same place. In the passage alluded to, *RÁCSHASA* asks one of his messengers if he had been at *Cusumapper*? The man replies, "Yes, I have been at *Pátaliputra*." But *Cu-*

Sumapón, or *Phulwarie*, to call it by its modern name, was, as the word imports, 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 *Mudrá-Rācshāsa* says, the abode of *CHANDRĀ-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 *CHANDRĀ-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 *Mudrá-Rācshāsa*, it will afford us clear evidence that the city of *CHANDRĀ-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 *Rajmehal* 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 *Pātal Candara* 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 *Rajemehal*, 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 *Raje-mehal*, 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 *Bālī-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 CHANDRĀ-GUPTA, having ſubdued the whole of *Prācbi*, as we read in the *Purānas*, fixed his reſidence at *Bālī-putra*, and there he ſuffered a moſt cruel death from CRĪSHNA and BALA-RĀMA, 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 *Prāchi*, and having thus recovered the conquests that had been wrested from his ancestor, probably re-established the seat of empire at *Bāli-putra*: the historians of *ALEXANDER* positively affirm that he did. Thus, while the kings of *Pāliothra*, 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-RĀMA* in the *Purānas*, not even their names being mentioned,) the princes of *Pātali-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 *Haṣṭināpoor* the residence of *DUSHMANTA*, which was not then in existence, having been built by *HASTI*, the fifth in descent from *DUSHMANTA*; 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; *Haṣṭināpoor* lies on the banks of the old channel of the *Ganges*. The descendants of *PURU* resided at *Sangalā*, 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 *Sangala* with *Salgada*, or *Salgala*, or the mistake has been made by his copyists. *FRONTINUS* and *POLYÆNUS* 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 *AFRASIAB* against the famous *CAICOSRU*: but to return from this digression to *Pátali-putra*.

THE true name of this famous place is *Patali-púta*, which means, the town of *PATALI*, a form of *DÉVI* worshipped there. It was the residence of an adopted son of the Goddess *PÁTALI*, hence called *Pátali-putra*, or the son of *PATALI*. *Pátali-putra*, and *Báli-putra*, are absolutely inadmissible as *Sanfrit* 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. *Pátali-pura*, or the town of *PÁTALI*, was called simply *Pátali*, or corruptly *Pattidli*, 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 *Patale* of *PLINY*. From a passage in this author, compared with others from *PROLEMY*, *MARCIANUS HERACLEOTA*, and *ARRIAN* in his *Periplus*, 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, *Colandiorhonta*, or in the *Hindostani* dialect, *Coilan-di-póta*, *Coilan boats* or *ships*: for *pota* in *Sanfrit* 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 preserved 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 *Tentygully*, 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 *Pátali*, *Paridli* 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 *DEVĪ*, under the appellation of *Pátali*, 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 Rāshasa*. By *ATHENÆUS* he is called *SANDRACOTTOS*; by the others *SANDROCOTTOS*, and sometimes *ANDROCOTTOS*. He was also called *CHANDRA* simply; and accordingly *DIODORUS SICULUS* calls him *XANDRAMES* from *CHANDRA*, or *CHANDRAM* in the accusative 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 *Prāchi*, or the country of the *Prasians*, had he attempted it, as the king was despised, and hated too, on account of his cruelty.

In the *Mudra-Rāshasa*, it is said, that king *NANDA*, after a severe fit of illness, fell into a state of imbecility which betrayed itself in his discourse

* 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 *Viṣṇu-purāṇa*, and in the *Bhāgavat*. CHANDRAM as well as his brothers was called MAURYA from his mother MURA; and as that * word in *Sanferit* 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 *Prasū* 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 *Purāṇas*, and other *Hindu* books, agree in the same facts, except as to the amours of SACATARA with MURA the mother of CHANDRA-GUPTA, on which head they are silent. DIODORUS and CURTIUS are mistaken, in saying, that CHANDRAM reigned over the *Prasū* at the time of ALEXANDER's invasion: He was contemporary with SELEUCUS Nicator.

I SUSPECT, CHANDRA-GUPTA kept his faith with the *Greeks* or *Yavans*, no better than he had done with his ally, the king of *Népal*; 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†. CHANDRA-GUPTA appears to have agreed, on his part, to furnish

* See the *Juivivēda*, where it is said, that the offspring of a barber, begot by stealth of a female of the *Sūdra* 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 SOPHAGASEMUS, and of his receiving fifty elephants from him. SOPHAGASEMUS, I conceive, to be, a corruption of SHĪVACA-SĒNA, the grandson of CHANDRĀ-GUPTA. In the *Purānas*, this grandson is called ASĒCAVARD-DHANA, or *full of mercy*, a word of nearly the same import as ASĒCA-SĒNA, or SHĪVACA-SĒNA, the latter signifying, he *whose armies are merciful, do not ravage and plunder the country*.

THE son of CHANDRĀ-GUPTA is called ALLITROCHATES and AMITROCATES 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 CHANDRĀ-GUPTA is called VARISĀRA in the *Purānas*; according to PARĀSARA, his name was DASARATHA; but neither the one or the other bear any affinity to AMITROCATES: this name appears however, to be derived from the *Sanscrit* MITRA-GUPTA, which signifies, saved 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 CHANDRĀ-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 CHANDRĀ-GUPTA himself was a *Sudra*,

that is to say, of the lowest class. In the *Viṣṇu-purāṇa*, and in the *Bhāgawat*, 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 *Barocbe*. 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 Varsas* or children of the Sun, from *ICSHWACU* to *DASARATHA-RĀMA*, as exhibited in the second volume of the *Asiatick Researches*, from the *Viṣṇu-purāṇa* and the *Bhāgawat*, and that set down in the table I have given with this essay. The line of the *Surya-Varsas*, from the *Bhāgawat*, being absolutely irreconcilable with the ancestry of *ARJUNA* and *CRĪSHNA*, 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:

I. It has been asserted in the second volume of the *Asiatick Researches*, that PARĀSARA lived about 1180 years before CHRIST; in consequence of an observation of the places of the *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* æra. This is also confirmed by a passage from the *Parāśara Sanbita*, in which it is declared, that the *Udāya* 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 PARĀSARA 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 PARĀSARA.

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 *Dēo-Cālyūn* or *Dēo-Cālfūn*: the true *Sanscrit* name is *Dēva-Cāla-yavana*. The word *Cāla-yavana* is always pronounced in conversation, and in the vulgar dialects *Cālyūn* or *Cālfūn*: literally, it signifies the devouring *Yavana*. He is represented in the *Purānas*, 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 *Sasni* or *Sasna*. It is true, they never bestow upon him the title of *Dēva*: on the contrary, they call him an incarnate Demon; because he presumed to oppose CRĪSHNA; and was very near defeating his ambitious projects: indeed CRĪSHNA was nearly overcome, and subdued after seventeen bloody battles; and according to the express words of the *Purānas*, he was forced to have recourse to treachery: by which means CĀLYŪN was totally defeated in the eighteenth engagement. That his followers and descendants,

should bestow on him the title of *Déva* or *Deo* is very probable; and the numerous tribes of *Hindus*, who to this day call CRĪSHNA an impious wretch, a merciless tyrant, an implacable and most rancorous enemy, in short, these *Hindus*, who consider CRĪSHNA as an incarnate demon, now expiating his crimes in the fiery dungeons of the lowest hell, consider CĀLYŪN in a very different light, and certainly would have no objection to his being called DEO-CĀLYŪN. Be it as it may, DEUCALION was considered as a *Déva* 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 *Atlas*; the common opinion is, that it happened in the country adjacent to mount *Parnafus*: 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 *Macedonians*. It is called in the *Purānas* *Garūḍa-sthan*, or the place of the *Eagle*, and is situated near the place called *Shibr* in Major RENNELL's Map of the western parts of *India*; indeed PRAMATHAS is better known in *India* by the appellation of *Shébar*.* DÉO-CĀLYŪN, who lived at *Gazni*, was obliged on the arrival of CRĪSHNA, to fly to the adjacent mountains, according to the *Purānas*; and the name of these mountains was formerly *Parnāsa*, from which the *Greeks* made *Parnafus*: they are situated between *Gazni* and *Peshawer*. CRĪSHNA, after the defeat of CĀLYŪN, desolated his country with fire and sword. This is called in *Sanfrit* *Pralaya*; and may be effected by water, fire, famine, pestilence and war: but in the vulgar dialects, the word *Pralaya*

* *BAMIAN*, (in *Sanfrit*, *VĀMĪYAN*), and *Shibr* lay to the N. W. of *Cabul*.

signifies only a flood or inundation. The legends relating to DEO-CÁLYŪN, 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 *Perfia*, and enjoyed the confidence of SIBYRTIUS* governor of *Arachofia* (now the country of *Candabar*, and *Gazni*) on the part of SELEUCUS. SIBYRTIUS sent him frequently on embassies to SANDROCPTOS. When SELEUCUS invaded *India*, MEGASTHENES enjoyed also the confidence of that Monarch, who sent him in the character of ambaffador to the court of the king of *Práchi*. 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 *Candabar*, 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 *Purānas*; 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 SANDROCOTUS, 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 CRĪSHNA; and collaterally from NAUSH to PARICSHITA: and afterwards from JARĀSANDHA, who was contemporary with CRĪSHNA. 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 CRĪSHNA.

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 CRĪSHNA 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 *Déva* or *God*, hence called DÉVA NAUSH or DÉO-NAUSH in the vulgar dialects: this happened about fifteen generations before CRĪSHNA. 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-

AN; they are SPARTEMBAS, BUDYAS and CRADEVAS. The first seems derived from the *Sanscrit* PRACHINVAN, generally pronounced PRACHINBAN, from which the *Greeks* made SPARTEMBAN 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,) C'HARMA and JYA'PTI. They are mentioned in five or six *Purānas*; 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 *Brāhmans* are obliged to repeat on certain days, VISHNU is called SHARMA, because according to the learned, SHARMA or SHAMA was an incarnation of that deity. In a list of the thousand names of SIVA, as extracted from the *Padma-purāna*, the 371st name is SHARMA-JA'YA, 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 SHARMA.

THE 998th name is SHARMAPUTRADA'YA, in the fourth case also, *praise to him who gave offspring to SHARMA*. My learned friends here inform me, that it is declared in some of the *Purānas*, that SHARMA, having no children, applied to SIVA, and made *Tapasya* in his honor. ISWARA was so pleased, that he granted his request, and condescended to be incarnated in the womb of SHARMA's wife, and was born a son of SHARMA, under the name of BA'LEŚWARA, or ISWARA the *infant*. BA'LEŚWARA 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 *Purānas*) we read as one of his names BALESA, 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 *Muslimans*, 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-dēva*, 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 BAL-DEVA 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 skulls: 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.

"which he also calls his shoulders are covered with the skin of a ty-
"gon. The skin of a tygon is a skin called by S. from *Amure*."

Now I shall observe, that the description is always represented very
fully, sometimes omitted; and that it is always exactly like a harpoon, with a
strong hook at a tail, as it is usually called by fishermen. My Father
informed me, that BATA-KA is a tiger, and is represented with his head

and covered with the skin of a lion, which is a tiger's skin.

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XIX.

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 *Āsýō-ruca*. 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'hi*. By SAMUAR (OCEANUS) a daughter was born unto her, called RAMĀ-DEVI. She is most beautiful; she is LACSHMI, and her name is *Āsýotcershā* or *Āsýotcrishta*: like a jewel she remains concealed in the ocean.

THE DHARMA-RĀJĀ, 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: CHITRAGUPTA acts as chief secretary. These holy men determine what is *dharma*, and *adharma*, just and unjust. His, (*Dharma-rājas*) servant is called CARMALĀ: 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 DHARMA-RĀJĀ, 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 *Pātāla*; there he orders some to be beaten, some to be cut to pieces, some to be devoured by monsters, &c. His servant is called CASHMALĀ, 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: every body 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 AŚYORUCA, or rather from AŚYORU or ASYORUS; 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 *Sanscrit* PRĀSARPANĪ, 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 LACSHMI, her consort of course is VISHNU; who rules, according to the *Puranas*, 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 ADES, appear to me, to be derived from ADI or ADIN, one of the names of VISHNU. When CICERO says (*) *Terrena autem vis omnis atque natura, DITI 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.

AXIOXERSOS, or in *Sanscrit* AŚYOTCERSA, or AŚYOTCERSAS, was PLUTO or DIS, and was meant for VISHNU. VISHNU is always represented as extremely beautiful; but I never found AŚYOTCERSA among his titles: he is sometimes called ATCERSA, a word of the same import.

CASHMALA or CASHMALĀS, 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 CUVÉRAS, or CUBÉRAS, 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 *Puranas*, begins with the first MENU, and no mention is made in it of floods, at least, my learned

* Cic. de natura Deorum.

friends tell me so. They are represented with *yellow eyes*, like the *Pingacshas*, (of whom we spoke in a former essay on *Egypt*,) and perhaps may be the same people; certain it is, the *Pingacshas* worshipped the *Cabirian* gods. DIODORUS SICULUS says, that the invention of fire, and the working 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 *Κόγξ, Ο'μ, Παξ*: *Conx. Om. Pax*. These mysterious words have been considered hitherto as inexplicable; but they are pure *Sanskrit*, and used to this day, by *Bráhmens* 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, *CÁNCSHA', OM, PACSHA*.

CÁNCSHA' signifies the object of our most ardent wishes.

OM is the famous monosyllable, used both at the beginning, and conclusion 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 particularly, 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 transaction, 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 *pacsha* ; as the *turn*, or *pacsha* 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 *pacsha*, *vix*, or *turn*, this noise was called *Pacsha*, &c.

THE word *pacsha* is pronounced *vacsh* and, *vaçh* 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*.

XX.

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 *Chinsuars* about

Horizontal	{	65 Miles W. of <i>Inawada</i> in <i>Guntoor</i> .
Distance		63 Miles E. N. E. of <i>Canoul</i> .
		And supposed to be 103 miles S. and $\frac{1}{2}$ E. of <i>Hydrabad</i> .

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 *Bráhmens* 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 empaled. 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 pedestal, 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 *MALLECARJEE*, 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 *Bráhmens* 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* *Figum*. The same ignorance of the language of their religious books seems to prevail through all these countries. The *Bráhmens*, in attendance here, are relieved at stated times, from *Autcowr* and other places, as this place is unwholesome, and the water bad. One of them said, he had books at *Autcowr*, 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 *aumildar*, 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 chiseled. 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 *Kisna*, where the ferry and road to *Amirabad* crosses. N.B. A pagoda here.
2. *Routa Pungala*—two parous distant, near *Patilab Gunga*.
3. *Cassab 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 *Gbundragopty 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 *Bráhmens*, with the *Rajpoot* amuldar, (who had hitherto shewn a shyness 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 *MALLEGARJEE*, 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 foul, 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 *Bráhmens*. 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 MALLI-CARJEE, is no other than the *Lingam*, to which such reverence is paid by certain casts of the *Gentoos*; and the reason why he is here represented by stones unwrought, may be understood from the *Bráhmens'* 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 *Kishna*, 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 croud, 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 *Bráhmens* 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-gumpty-patnum*, 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 *Perwuttum*, 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 *MALLICADIVI*, and lived in this wilderness. Among her cattle, was a remarkable fine black cow, which, she 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 in-
 “ formed 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 disap-
 “ peared, 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, re-
 “ presented 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 *Lin-*
gam 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-goompty-patnam*. The Princess, now
 worshipped as a Goddess, is also called BRAMA-RUMBO, or STRI-CHIL-
 LUM-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 ap-
 pear, that the stories represented on several divisions, or compartments, are
 designed to impress on the mind some moral lesson, or to heighten the re-
 verence inculcated for the object of adoration here. The customs and manners
 of the *Gentoos*, their arms, dress, amusements, and the parade and state, atten-
 dant 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 510 feet broad. In the centre of this inclosure are the more antient 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 plaister, 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 antient and of several sizes, (so low 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 *Acheen* 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: tigers, (and in one place a lion) attacked by

several persons; crouds of people appear on foot, many armed with bows and arrows, like the *Chinsuars*; many figures of *Byraggies* 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 decrepid 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 *Brábmens*; 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: 1st, 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 *Brábmens*, 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 *Wentigmetta*, 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 *Bráhmens* 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 MALLECARJEE 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 *Bráhmens* 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 *Bráhmens* 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.

XXI.

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 *Bráhmens* 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, *Bráhmens*, 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 *Bráhmens* and poets; and those of the *Bráhmens* 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:

4 *yugs*, vizt. a *Satya*, a *Treta*, a *Dwapar*, and a *Cali* *yug*, make one divine age or *Maha* *yug*;—71 *Maha* *yugs*, with a *Sandhi*, equal to a *Satya* *yug*, make 1 *Manwantara*, and 14 *Manwantaras* compose a *Calpa*, at the commencement of which, there is also a *Sandhi*, equal to a *Satya* *yug*.—The duration of each period is as follows:

<i>Sandhi</i> at the beginning of the <i>Calpa</i>	-	-	-	-	1728000
<i>Satya</i> <i>yug</i>	-	-	a	-	1728000
<i>Treta</i> <i>yug</i>	-	-	-	-	1296000
<i>Dwapar</i> <i>yug</i>	-	-	-	-	864000
<i>Cali</i> <i>yug</i>	-	-	-	-	432000
One divine age, or <i>Maha</i> <i>yug</i>	-	-			4320000
71 <i>Maha</i> <i>yugs</i>	-	-	-	-	306720000
Add a <i>Sandhi</i>	-	-	-	-	1728000
A <i>Manwantara</i>	-	-	-	-	308448000
14 <i>Manwantaras</i>	-	-	-	-	4318272000
A <i>Calpa</i> , or grand period	-	-	-	-	4320000000

THE *Calpa* is an anomalistic period, at the end of which the *Hindu* astronomers say, that the places of the planets, nodes, and apsidæ, 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 apfides, were in a line of conjunction, in the beginning of aries, or 1955884897 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^o 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 *Æra*.”

“THE *Bráhmens* 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.

CHRONOLOGICAL TABLE OF ANCIENT ÆRAS, &c.

<i>Poetical Æras.</i>		<i>Year of the World.</i>	<i>Astronomic Æra.</i>	
<i>Satya yug, or Golden Age.</i>	0	ADAM	0	
	1		1	
	130	SETH born	130	
	905		905	CALI YUG 0
	906		906	* 1
	1056	NOAH born	1056	151
	1656	Flood	1656	751
	1728		1728	823
<i>Treta yug, or Silver Age.</i>	1		1729	824
	59	NIMROD	1787	882
	177		1905	PRADYOTA 1000
	Icshwacu and BUDHA }		1907	BUDHA I. 1002
	179			
	220	ABRAHAM	1948	1043
	278	NOAH'S death	2006	1101
	316		2044	SISUNGA 1139
	676		2404	NANDA 1499
	776		2504	CHANDRAGUPTA 1599
	913		2641	PUSHPAMITRA 1736
	1025		2753	VASUDEVA 1848
	RAMA		2758	1853
	1097	PARASARA	2825	1920
	1097	YUDHISHTHIR	2825	1920
	VALMIC			
	1102	VYASA	2830	1925
	1107	PARICSHIT	2835	1930
	1152		2980	2075
	1296		3024	2119

* The *Cali yug* commenced in *February*, in the 906th year of the World.

CHRONOLOGICAL TABLE OF ANCIENT ÆRAS, &c. Continued.

<i>Poetical Æras.</i>		<i>Year of the World.</i>	<i>Astronomic Æra.</i>	
<i>Dvapara yug, or Brazen Age.</i>	CUSHA	1		2120
		74		
		530	BALIN	2193
		576	CHANDRABIJA	2649
		676		2695
		776		2795
		864		2895
<i>Kali yug, or Iron Age.</i>				2983
		1		2984
		62	VICRAMADITYA	3045
		95	DEVAPALA	3078
		119	CHRIST	3102
		185		
		197	NARAYANPALA	3168
		200	SACA	3180
		300		3183
		432		3183
<i>Satya yug of the 11d Divine Age.</i>				3183
		1		3183
		185		3183
		200	VARAHA	3415
		300		3416
		400		3600
		600		3615
		800		3715
		1000		3815
		1200		4015
	Current year	1483	Current year	5803
			Current year	4898

IN the preceding table, I have placed the beginning of the astronomic æra 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 æra of the *Cali yug*, during the periods of the *Treta* and *Dwapar yugs* of the poets, and made use of either æra, (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 *Bhagawatamrita* in particular, say, that “BUDHA became visible the 1002d year of the *Cali yug*” (astronomic æra): 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 ILA, 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 æra 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 PARASARA, an ancient astronomer; and PARASARA was the grandson of VASISHTHA, who was also an astronomer, and *Pr. 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, PARICSHIT and others engaged in that famous war.

SHORTLY after that war, and towards the close of the reign of PARICSHIT, the *Hindu* historians of that part of *India* where PARICSHIT 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 *Dwapar 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 *Dwapar yug*; and from this circumstance, having removed PARICSHIT from the close of the *Treta yug* down to the close of the *Dwapar yug*, they were then obliged to place YUDHISHTHIR, ARJUN, CRISHNA, ABHIMANYU and VYASA, at the close of the *Dwapar 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 *Magadha* or *Babar* into confusion. For, having discovered that SAHADEVA, the son of JARASANDHA, 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 PARICSHIT, 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 *MEVA*, explained at the begining of this essay: for in the latter, all the yugs, *Manwantaras*, &c. belonging to the system begin invariably, on the first day of *Byfakh*, the moment the sun enters Aries in the *Hindu* sphere.

Poetic Æras.	Day of the week.	Moon's age and Month.
<i>Satya</i> yug	<i>Sunday</i>	3d titthee of the moon of <i>Byfakh</i> ,
<i>Treta</i> do.	<i>Monday</i>	9th do. of do. <i>Cartic</i> ,
<i>Dwapar</i> do.	<i>Thursday</i>	28th do. of do. <i>Bhadro</i> ,
<i>Cali</i> do.	<i>Tuesday</i>	15th do. of do. <i>Magh</i> .

Note. The lunar month takes its name from the solar month in which the new moon happens to fall.—30 titthees 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 *tonfor* called "*Guhjateegubjo*," supposed to have been written by SEEB or SEEVA, a *Hindu* deity.

TABLE OF THE AVATARS.

	<i>Avatars.</i>	<i>Week Day.</i>	<i>Moon's age and month.</i>	<i>Nakshatra.</i>
1	MOTCHYO	Monday	1 titthee <i>Chitro</i>	<i>Revati</i>
2	KURMO	Wednesday	2 <i>Jyist'ho</i>	<i>Rohini.</i>
3	BORAH	Sunday	7 <i>Magho</i>	<i>Aswini.</i>
4	NREESINGHO	Saturday	14 <i>Byfakho</i>	<i>Swati.</i>
5	BAMONO	Friday	12 <i>Bhadro</i>	<i>Sravana.</i>
6	POROSURAMO	Saturday	3 <i>Byfakho</i>	<i>Robini.</i>
7	RAMO	Monday	9 <i>Chitro</i>	<i>Punaryobafce.</i>
8	KREESNO	Wednesday	23 <i>Bhadro</i>	<i>Robini.</i>
9	BOODHO	Sunday	10 <i>Asaro</i>	<i>Byfakha.</i>
10	KOLKEE	Saturday	2 <i>Agrabain</i>	<i>Purvafara.</i>

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 MEVA, 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 MEYA's, and consequently the cause of much confusion in the records of ancient times. To distinguish it from MEYA'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 *Uttara Chanda*, from which Captain FRANCIS WILFORD was so obliging as to favor me with an extract.

TABLE of the PURANIC MANWANTARAS.

Manwa.	Day of the Week.	Moon's Age & Month.	Nakshatra.
1	Began on Sunday,	9th Tithi of <i>Aswin</i> ,	<i>Sravana</i> ,
2	— Thursday,	12 — <i>Cartic</i> ,	<i>Utt. Bhadrapada</i> ,
3	— Monday,	3 — <i>Chitr</i> ,	<i>Critica</i> ,
4	— Friday,	3 — <i>Bhadr</i> ,	<i>Hosta</i> ,
5	— Tuesday,	30 — <i>Phalgun</i> ,	<i>Solobbisa</i> ,
6	— Saturday,	11 — <i>Pous</i> ,	<i>Rohini</i> ,
7	— Friday,	10 — <i>Asar</i> ,	<i>Swati</i> ,
8	— Tuesday,	7 — <i>Magh</i> ,	* <i>Onurada</i> ,
9	— Sunday,	23 — <i>Srabon</i> ,	<i>Rohini</i> ,
10	— Friday,	15 — <i>Asar</i> ,	<i>Uttora Sara</i> ,
11	— Monday,	15 — <i>Cartic</i> ,	<i>Critica</i> ,
12	— Thursday,	15 — <i>Phalgun</i> ,	<i>Uttora Pholguni</i> ,
13	— Wednesday,	15 — <i>Chitr</i> ,	<i>Chitra</i> ,
14	— Wednesday.	15 — <i>Jyish'th</i> .	<i>Jyesta</i> .

* *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 *Shloka* 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 MEYA, 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 abovementioned appears to have been absolutely necessary in this system, to render it applicable to the pur-

poses of astronomy. But in the system of MEYA *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.

MEYA, 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 *Byshabb*, 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*, MEYA 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 accurately 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 MEYA 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 OSOT-

THAMO, the son of DRON, mentioned in the *Mababharat*; 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 SWOYOMBHOOBO 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 Manwantara*, now generally confounded with the periods of the same name belonging to MEYA'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.

SWOYOMBHOOBO, or ADAM. <i>Munoo</i> .	ROOCHEE, the husband of AKOOTE.
SOTOROOPA, his wife.	KORDOM, do. of DEBOOTE.
PREEYOBROTO, his son.	DOKSOPROJAPOOTE, do. of PROSOOTE.
UTTANPADO, his second son.	TOOSEETO.
AKOOTE, SWOYOMBHOOBO's 1st daughter.	MOREECHEE.
DEBOOTE, ditto 2d ditto.	MEESRO.
PROSOOTE, ditto 3d ditto.	YOCHO.

2d MANWANTARA.

SWAROCHESOO, <i>Munoo</i> .	TOOSEETO.
RAJA DYUMOT, his son.	URJOSTOMBHO.
RAJA SUSENO, ditto.	ROCHONO, and others.
RAJA ROCHESMOT, ditto.	

3d MANWANTARA.

UTOMO,	<i>Munoo.</i>	BEDOSUTO.
POBONO,	his son.	BHODRO.
SRINJOYO,	ditto.	PROMODO.
JOËOTRO,	ditto.	SOTYOJEET, and many others.
SOTYO.		

4th MANWANTARA.

TAMOSO,	- <i>Munoo.</i>	BEERO.
BREESOKHYATEE,	his son.	BEDHREETOYO.
NOROHKETU,	ditto.	JOTEERDHAMA.
SOTYOKAHOROYO,		TREESEEKHOISWORO, and many others.

5th MANWANTARA.

RIBOTO,	<i>Munoo.</i>	HERONYOROMA.
BOLEE,	his son.	BEDHOSEERA.
BEENDHO,	ditto.	URDHOBAAHOO.
BHOOTOROYO.		BEEBHOO, and many others.

6th MANWANTARA.

CHAKSOOSO,	<i>Munoo.</i>	APYO.
PURRU,	his son.	HORYOSMOT.
PURRUSO,	ditto.	DWEEROKO.
SUDYUMNO,	ditto.	MONTRODRUMO, and many others.
PRODYUMNO,	ditto.	

7th MANWANTARA.

VAIVOSWATA, or NOAH,	<i>Munoo.</i>	PREESODHRO,	his 6th son,
ICSHWAKU,	his 1st son,	NOBHOGO,	7th ditto,
NREEGO,	2d ditto,	KOBEE,	8th ditto,
DREESTO,	3d ditto,	DEESTO,	9th ditto,
SORYATI,	4th ditto,	BARUNO,	10th ditto,
NORISYANTO,	5th ditto	ADITYO,	

7th MANWANTARA (continued).

BOSU,		OTRI.
RUDRO.		BOSISTO.
BISWEDEBO.		BISWAMITRO.
MORUDGONO.		GOUTOMO.
OSNIKUMAR.		JOMODOGNEE.
RIBHOBO.		BHORODWAJO.
KOSYAPO.		PURONDORO, and many others.

8th MANWANTARA.

SABORNI,	<i>Munoo.</i>	POROSU RAM.
NEERMOKO,	his son.	DIPLIMAN.
BEEROJOSKO,	ditto.	OSOTTHAMO, son of DRON.
SUTOFA.		KREEPO.
BEEROJA.		REESYOSRINGO.
OMREKTOPROBHO.		VYASA, or BYASA.
GABOLO.		

9th MANWANTARA.

DOKSOSABORNI,	<i>Munoo.</i>	CHORBO.
BOOTOKETU,	his son.	PARO.
DIPTIKETU,	ditto.	DYUTIMOT.
DREESTOKETU,	ditto.	SRUTHO, and many others.
MORICHI.		

10th MANWANTARA.

BROHMOSABORNEE.	<i>Munoo.</i>	SUKREETO.
BHURISEN, his son.		SOTYO.
SURASONO.		JOYO.
BIRUDHO.		MURTI.
HOBISMAN.		SOMBHOO, and many others.

11th MANWANTARA.

DHORMOSABORNEE.	<i>Munoo.</i>	NEERBANO.
SOTYO DHORMO, his son.		ROOCHEE.
BIHONGGOMO.		ORUNO.
KAMOGOMO.		BIDREETO, and many others.

12th MANWANTARA.

RUDROSABORNEE.	<i>Munoo.</i>	TOPOMURTI.
DEBOBAN, his son.		TOPOSEE.
UPODEBO, do.		OGNEEDROKO.
DEBOSREESTO, do.		GONDHODHAMA, and many others.
HORITO.		

13th MANWANTARA.

DEBOSABORNEE.	<i>Munoo.</i>	SUTRAMO.
CHITROSENO, his son.		NEERMOKO.
BICHITRO, do.		DIBOSPOTEE, and many others.
SUKORME.		

14th MANWANTARA.

EENDROSABORNI.	<i>Munoo.</i>	OGNEE.
URUNGGO, his son.		BAHOO.
BHURU, do.		SOOCHEE.
BODHNO, do.		SUDHO.
POBEETRO.		MAGODHO, and many others.
CHAKSOOSO.		

Note. Several names in the foregoing table had the title of *Devtas*, *Reeshees*, &c. annexed to them, probably by way of distinction or pre-eminence.

UTOMO, TAMOSO, and RIBOTO, the third, fourth, and fifth *Munoos*, were the grandsons of SWOYOMBHOOBO or ADAM; DOKSO 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 Manwantara*, 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 *Manwantaras* 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 *Hassinapoor* (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.

Poetic Æras.	Solar Line.	Year of the World.	Lunar Line.	Astronomical æra, Cali yug.
<i>Treta</i> <i>Yug</i> or <i>Silver</i> <i>Age</i> .	179	1907	BUDHA	1002
	ICSHWACU		PURURAVAS	
	VICUCSHI		AYUSH	
	CUCUTSA		NAHUSHA	
	ANENAS		YAYATI	5
	PRITHU		PURU	
	5		JANAMEJAYA	
	VISWAGANDHI		—	
	CHANDRA		—	
	YUVANASWA		—	
	SRAVA		—	
	10		—	10
	VRIHADHASWA		—	
	DHUNDHUMARA		—	
	DRIDHASWA		—	

<i>Poetic Eras.</i>	<i>Solar Line.</i>	<i>Year of the World.</i>	<i>Lunar Line.</i>	<i>Astronomical era, Cali yug.</i>
<div>Age.</div> <div>Silver</div> <div>or</div> <div>Yug</div> <div>Treta</div>	HERYASWA		—	
	NICUMBHA		—	
	CRISASWA	15	—	
	SENAJIT		—	
	YUVANASWA		—	
	MANDHATRI		—	
	PURUCUTSA		PRACHINAWAT	
	TRASADASYU	20	PRAVIRA	
	ANARANYA		MENASYU	
	HERYASWA		CHARUPADA	
	PRARUNA		SUDYU	
	TRIVENDHANA		BAHUGAVA	
	SATYAVRATA	25	SANYATI	
	TRISANCU		AHANYATI	
	HARISCHANDRA		RAUDRASWA	
	ROHITA		RITEYUSH	
	HARITA		RANTINAVA	
	CHAMPA	30	SUMATI	
	SUDEVA		AITI	
	VIJAYA		DUSHMANTA	
	BHARUCA		BHARATA	
	VRICA		VITATHA	
	BAHUCA	35	MANYU	
	SAGARA		VRIHATES' HETRA	
	ASAMANJAS		HASLIN	
	ANSUMAT		AJAMEDHA	
	BHAGHIRATHA		RICSHA	
	SRUTA	40	SAMWARANA	
	NABHA		CURU	

Poetic Eras.	Solar Line.	Year of the World.	Lunar Line.	Astronomical era, Cali yug.
Treta Yug or Silver Age.	SINDHUDWIPA		JAHNU	
	AYUTAYUSH		SURATHA'	
	RITAPERNA		VIDURATHA	
	SAUDASA	45	SARVABHAUMA	45
	ASMACA		JAYASINA	
	MULACA		RADHICA	
	DASARATHA		AYUTAYUSH	
	AIDABIDI		ACRODHANA	
	VISWASAH	50	DEVATITHI	50
	CHATAWANGA		RUSHA	
	DERGHABAHU		DILLIPA	
	RAGU		PRATIPA	
	AJA		SANTANU	
	DASARATHA	55	VACHYTRAVIRYA	55
	RAMA		PANDU	
	1097 VRIHADBALA		2825 YUDHISHTHIRA	1920
	1107 VRIHADRANA		2835 PARICSHIT	1930
	*URUCRYA		*JANAMAJAYA	
	*VATSAVRIDHA	60	*SATANICA	60
	*PRATYVYOMA		*SAHASRANICA	
	*BHANU		*ASWAMEDHAJA	
	*DEVACA		*ASIMACRISHNA	
	*SAHADEVA		*NEMICHACRA	
*VIRA	65	*UPTA	65	
1296 *VRIDHASWA		3024 *CHITRARATA	2119	

Poetic Eras.	Solar Line.	Year of the World.	Lunar Line.	Astronomical era, Cali yug.
1 CUSHA		3025	*SUCHIRATHA	2120
ATTITHI			*DHRITIMAT	
NISHADHA			*SUSHINA	
NABHAS	70		*SUNITHA	70
PUNDARICA			*NRICHAESEVU	
CSHEMADHANWAS			*SUCHINALA	
DEVANICA			*PARIPLAVA	
AHINAGU			*SUNAYA	
PARIPATRA	75		*MEDHAVIN	75
RANACHALA			*NRIPANJAYA	
VAJRANABHA			*DERVA	
ARCA			*TIMI	
SUGANA			*VRIHADRATHA	
VIDHRITI	80		*SUDASA	80
HIRANYANABHA			*SATANICA	
PUSHYA			*DURMADANA	
DRUVASANDHI			*RAHINARA	
SUDERSANA			*DANDAPANI	
AGNIVERNA	85		*NIMI	85
SIGHIRA			*CSHIMACA	
MARU			—	
PRASUS _R UTA			—	
SANDHI			—	
AMERSANA	90		—	90
MAHASWAT			—	
VISWABHAHU			—	
PRASENAJIT			—	
TACSHACA			—	
*BHANUMAT	95		—	95

T t

Age.
Brazen
or
Yug
Dwapar

Poetic Eras	Solar Line.	Year of the World.	Lunar Line.	Astronomical era, Cali yug.
Age. Brazen or Yug Dwapar	*PRATICASWA		—	
	*SUPRATICA		—	
	*MARUDEVA		—	
	*SUNACSHATRA		—	
	*PUSHCARA	100	—	100
	*ANTARICSHA		—	
	*SUTAPAS		—	
	*AMITRAJIT		—	
	*VRIHADRAJA		—	
	*BARHI	105	—	105
	*CRITANJAYA		—	
	*RANANJAYA		—	
	*SANJAYA		—	
	*SLOCYA		—	
	*SUDHODA	110	—	110
	*LANGALADA		—	
	*PRASENAJIT		—	
	*CSUDRACA		—	
	*SUMITRA		—	
	—	115	—	115
	—		—	
	—	117	—	117
864		3888		2983

IN the preceding table, I have placed YUDHISHTHIR in the year 2825 of the World, corresponding to the 1097th of the *Treta yug* of the poets, and to the 1920th of the astronomical *Cali yug*: that this is about the period in which YUDHISHTHIR reigned, I have not myself the smallest doubt, not only because he must have been contemporary with PARASARA, the father of VYA-

sa, but also on account of the exact coincidence of that period with the chasm 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 ICISHWACU, 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 ICISHWACU'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 *Dwapar 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 æra of the *Cali yug*, at the close of PARICSHIT's reign, as already noticed, YUDHISHTHIR and PARICSHIT, in the lunar line, with VRIHADBALA and VRIHADDRANA, 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 VRIHADRANA 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 VRIHADRANA, 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 906th 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 astronomic 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 æra; 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 PORASNAJIT, PORUSNAJIT, 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 *Behar*, 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.

Anno Mundi.		Cal yug.	Anno Mundi.		Cal yug.
1905	PRADYOTA	1000		SUJYESHTHA	
	PALACA			VASUMITRA	
	VISACHAYUPA			ABHADRACA	
	RAJACA			PULINDA	
	NANDIVIRDANA			GHOSHA	
2044	SISUNGA	1139		VAJRAMITRA	
	CACAVERNA			BRAGAVATA	
	CSEHMADHERMAN			DEVABUTI	
	CSEHTRAJIRYA		2753	VASUDEVA	1848
	VIDHISARA			BHUMITRA	
	AJATASATRU			NARAYANA	
	DAREHACA			SUSARMAN	
	AJAYA		2825	*SAHADEVA	1920
	NANDEVERDHANA			*MARJARI	
	MAHANANDI			*SRUTASRAVAS	
2404	NANDA	1499		*AYUTAYUSH	
2504	CHANDRAGUPTA	1599		*NIRAMITRA	
	VARISARA			*SUNACSHATRA	
	ASOCAVERDHANA			*VRIHETSENA	
	SUYASAS			*CARMAJIT	
	DESARATHA			*SRUTANJAYA	
	SANGATHA			*VIPRA	
	SALISUCA			*SUCHI	
	SOMASARMAN			*CSEHMA	
	SATADHANWAS			*SUVRATA	
	VRIHADRATHA			*DHERMASUTRA	
2641	PUSHPAMITRA	1736		*SRAMA	
	AGNIMITRA			*DRIDHASENA	

Anno Mundi.		Cali yug.	Anno Mundi.		Cali yug.
	*SUMATI			SIVASWATI	
	*SUBALA			PURISHABHERU	
	*SUNITA			SUNANDANA	
	*SATYAJIT			CHACORACA	
3098	BALIN	2193		BATACA	
	CRISHNA			GOMALIN	
	SRISANTACARNA			PURIMAT	
	PAURNAMASA			MEDASIRAS	
	LAMBODARA			SERASCANDHA	
	VIVILACA			YAJNYASRI	
	MEGHASWATA			VIJAYA	
	VATAMANA		3554	CHANDRABIJA	2649
	TALACA				

THE names with a * 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 2825 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 Behar.

CALCUTTA, 2d October, 1796.

Year	Month	Day	Year	Month	Day
1800	1	1	1800	1	1
1801	1	1	1801	1	1
1802	1	1	1802	1	1
1803	1	1	1803	1	1
1804	1	1	1804	1	1
1805	1	1	1805	1	1
1806	1	1	1806	1	1
1807	1	1	1807	1	1
1808	1	1	1808	1	1
1809	1	1	1809	1	1
1810	1	1	1810	1	1
1811	1	1	1811	1	1
1812	1	1	1812	1	1
1813	1	1	1813	1	1
1814	1	1	1814	1	1
1815	1	1	1815	1	1
1816	1	1	1816	1	1
1817	1	1	1817	1	1
1818	1	1	1818	1	1
1819	1	1	1819	1	1
1820	1	1	1820	1	1
1821	1	1	1821	1	1
1822	1	1	1822	1	1
1823	1	1	1823	1	1
1824	1	1	1824	1	1
1825	1	1	1825	1	1
1826	1	1	1826	1	1
1827	1	1	1827	1	1
1828	1	1	1828	1	1
1829	1	1	1829	1	1
1830	1	1	1830	1	1
1831	1	1	1831	1	1
1832	1	1	1832	1	1
1833	1	1	1833	1	1
1834	1	1	1834	1	1
1835	1	1	1835	1	1
1836	1	1	1836	1	1
1837	1	1	1837	1	1
1838	1	1	1838	1	1
1839	1	1	1839	1	1
1840	1	1	1840	1	1
1841	1	1	1841	1	1
1842	1	1	1842	1	1
1843	1	1	1843	1	1
1844	1	1	1844	1	1
1845	1	1	1845	1	1
1846	1	1	1846	1	1
1847	1	1	1847	1	1
1848	1	1	1848	1	1
1849	1	1	1849	1	1
1850	1	1	1850	1	1
1851	1	1	1851	1	1
1852	1	1	1852	1	1
1853	1	1	1853	1	1
1854	1	1	1854	1	1
1855	1	1	1855	1	1
1856	1	1	1856	1	1
1857	1	1	1857	1	1
1858	1	1	1858	1	1
1859	1	1	1859	1	1
1860	1	1	1860	1	1
1861	1	1	1861	1	1
1862	1	1	1862	1	1
1863	1	1	1863	1	1
1864	1	1	1864	1	1
1865	1	1	1865	1	1
1866	1	1	1866	1	1
1867	1	1	1867	1	1
1868	1	1	1868	1	1
1869	1	1	1869	1	1
1870	1	1	1870	1	1
1871	1	1	1871	1	1
1872	1	1	1872	1	1
1873	1	1	1873	1	1
1874	1	1	1874	1	1
1875	1	1	1875	1	1
1876	1	1	1876	1	1
1877	1	1	1877	1	1
1878	1	1	1878	1	1
1879	1	1	1879	1	1
1880	1	1	1880	1	1
1881	1	1	1881	1	1
1882	1	1	1882	1	1
1883	1	1	1883	1	1
1884	1	1	1884	1	1
1885	1	1	1885	1	1
1886	1	1	1886	1	1
1887	1	1	1887	1	1
1888	1	1	1888	1	1
1889	1	1	1889	1	1
1890	1	1	1890	1	1
1891	1	1	1891	1	1
1892	1	1	1892	1	1
1893	1	1	1893	1	1
1894	1	1	1894	1	1
1895	1	1	1895	1	1
1896	1	1	1896	1	1
1897	1	1	1897	1	1
1898	1	1	1898	1	1
1899	1	1	1899	1	1
1900	1	1	1900	1	1

The names with a * let before them, are those which I mentioned in the foregoing remarks, to have been erroneously placed by the modern Hindus before PRABHAKAR, SARABH, the end of the dynasty, was terminated by YOUNG, who reigned about the year 1800 of the World. I have therefore referred them again to their proper places in Hindu, and by this means corrected the two alterations pointed out by the late Sir William Jones, in the Hindu chronology of the kings of Magadha or Bhar.

1800	1	1	1800	1	1
1801	1	1	1801	1	1
1802	1	1	1802	1	1
1803	1	1	1803	1	1
1804	1	1	1804	1	1
1805	1	1	1805	1	1
1806	1	1	1806	1	1
1807	1	1	1807	1	1
1808	1	1	1808	1	1
1809	1	1	1809	1	1
1810	1	1	1810	1	1
1811	1	1	1811	1	1
1812	1	1	1812	1	1
1813	1	1	1813	1	1
1814	1	1	1814	1	1
1815	1	1	1815	1	1
1816	1	1	1816	1	1
1817	1	1	1817	1	1
1818	1	1	1818	1	1
1819	1	1	1819	1	1
1820	1	1	1820	1	1
1821	1	1	1821	1	1
1822	1	1	1822	1	1
1823	1	1	1823	1	1
1824	1	1	1824	1	1
1825	1	1	1825	1	1
1826	1	1	1826	1	1
1827	1	1	1827	1	1
1828	1	1	1828	1	1
1829	1	1	1829	1	1
1830	1	1	1830	1	1
1831	1	1	1831	1	1
1832	1	1	1832	1	1
1833	1	1	1833	1	1
1834	1	1	1834	1	1
1835	1	1	1835	1	1
1836	1	1	1836	1	1
1837	1	1	1837	1	1
1838	1	1	1838	1	1
1839	1	1	1839	1	1
1840	1	1	1840	1	1
1841	1	1	1841	1	1
1842	1	1	1842	1	1
1843	1	1	1843	1	1
1844	1	1	1844	1	1
1845	1	1	1845	1	1
1846	1	1	1846	1	1
1847	1	1	1847	1	1
1848	1	1	1848	1	1
1849	1	1	1849	1	1
1850	1	1	1850	1	1
1851	1	1	1851	1	1
1852	1	1	1852	1	1
1853	1	1	1853	1	1
1854	1	1	1854	1	1
1855	1	1	1855	1	1
1856	1	1	1856	1	1
1857	1	1	1857	1	1
1858	1	1	1858	1	1
1859	1	1	1859	1	1
1860	1	1	1860	1	1
1861	1	1	1861	1	1
1862	1	1	1862	1	1
1863	1	1	1863	1	1
1864	1	1	1864	1	1
1865	1	1	1865	1	1
1866	1	1	1866	1	1
1867	1	1	1867	1	1
1868	1	1	1868	1	1
1869	1	1	1869	1	1
1870	1	1	1870	1	1
1871	1	1	1871	1	1
1872	1	1	1872	1	1
1873	1	1	1873	1	1
1874	1	1	1874	1	1
1875	1	1	1875	1	1
1876	1	1	1876	1	1
1877	1	1	1877	1	1
1878	1	1	1878	1	1
1879	1	1	1879	1	1
1880	1	1	1880	1	1
1881	1	1	1881	1	1
1882	1	1	1882	1	1
1883	1	1	1883	1	1
1884	1	1	1884	1	1
1885	1	1	1885	1	1
1886	1	1	1886	1	1
1887	1	1	1887	1	1
1888	1	1	1888	1	1
1889	1	1	1889	1	1
1890	1	1	1890	1	1
1891	1	1	1891	1	1
1892	1	1	1892	1	1
1893	1	1	1893	1	1
1894	1	1	1894	1	1
1895	1	1	1895	1	1
1896	1	1	1896	1	1
1897	1	1	1897	1	1
1898	1	1	1898	1	1
1899	1	1	1899	1	1
1900	1	1	1900	1	1

XXII.

On the religious ceremonies of the Hindus, and of the Bráhmens 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 *Bráhmāna*, rising from sleep, is enjoined, under the penalty of losing the benefit of all rites performed by him, to rub his teeth with a proper withe 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 effica-
 cious, than a rigid penance, in expiating sins, especially the early bath in
 the months of *Māgha*, *Phālguna* and *Cārtica* : 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 re-
 gular bath consists of ablutions followed by worship and by the inaudible
 recitation of the *Gāyatrī* with the names of the worlds. First sipping 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. “ 1st. 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 purána*, 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 *Gáyatrí*, holding much *cuśa* 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

creation. 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 PARA’S’ARA, “water, the *Vēdas*, 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 sacerdotal 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’JNYAWALKYA*, 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 governs our intellects ; which is water, lustre, flavour, 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 flavour 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, illumines 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 *Gáyatri* of BRAHME, is omitted, and the names of the three lower worlds only are premised : thus recited, the *Gáyatri*, 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 threefold 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 YAJÑAWALKYA, 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.

‘ 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 trilateral monosyllable, to obviate the evil consequence announced by MENU, "A *Bráhmaña*, beginning and ending a lecture of the *Véda* (or the recital of any holy strain), must always pronounce to himself the syllable *óm*; for unless the syllable *óm* 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 *pal'sa*," says YAJNYAWALCYA, "is supported by a single pedicle, so is this universe upheld by the syllable *óm*, a symbol of the supreme BRAHME." "All rites ordained in the *Véda*, oblations to fire, and solemn sacrifices, pass away; but that, which passeth not away," says MENU, "is declared to be the syllable *óm* 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 BRAHME, the supreme soul. "The sun," says YAJNYAWALCYA, "is BRAHME; this is a certain truth revealed in the sacred *upanishats*, and in various *sac'hás* of the *Védas*." So the *Bhawishya purána*, 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 *Védas*."

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 un- borrowed 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 endued 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 *Bhāwishtya purāna*, CRĪSHN'A 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 mystick word *vashat*; 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 central, 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 *Gāyatrī* must be next invoked in these words, " Thou art light; thou art feed; 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 trifylable, whose import is the power of the supreme being, come, thou mother of the *Vēdas*, who didst spring from BRAHME, be constant here." The *Gāyatrī* 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 *putrajīva*, vulgarly named *pīṭonbiā*, are declared preferable. The following prayers from the *Viṣṇu purāna* conclude these repetitions.* " Salutation to the sun;

* I omit the very tedious detail respecting sins 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 *Gāyatrī* 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 threefold 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 *Udgātṛī* or chanter of the *Sāmaveda*, the *Hōtrī* or reader of the *Rigveda*, who performs the essential part of a religious ceremony, and the *Adhvaryu*, who sits in the sacred clove and chants the *Yajurveda*. His three feet are the three *Vēdas*. Oblations and sacrifice are his two heads, roaring stupendously. His seven hands are the *Hōtrī*, *Maitrāvaruṇa*, *Brāhmaṇabhandu*, *Gravastata*, *Achbāvāc*, *Nisṭṛī* and *Pōtrī*; names by which officiating priests are designed 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 *yavá*
 “ tree,) the mighty luminary sprung from *CAŚYAPA*, the foe of darkness, the
 “ destroyer of every sin.” Or the priest walks a turn through the south, re-
 hearing a short text, “ I follow the course of the sun:” which is thus ex-
 plained; “ 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 sanders 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 re-
 “ gion; 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 ex-
 plained as signifying, that the sun is a manifestation of the supreme being,
 present every where, produced every where, 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 perform-
 ed 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, Yamuná, Saraswatí, Satadru, Marudvid'há and Jyíctiyá! hear my prayers; for my sake be included in this small quantity of water with the holy streams of Parushtí, Asiní and Vitaslá." He should also utter the radical prayer consisting of the words "Salutation to NA'RA'YANA." 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 CRISHN'A incarnate in the shape of a boar,
 " ascend my limbs and remove every such sin."

THE text extracted from the *Padma purāna* follows. "Thou didst spring
 " from the foot of VISHN'U, daughter of VISHN'U, honoured by him; there-
 " fore preserve 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 JAHNU. Thou art called she, who promotes growth;
 " among the gods thou art named the lotos; able, wife of PRĪTHU, bird,
 " body of the universe, wife of SIVA, nectar, female cherisher of science,
 " cheerful, favouring worlds, merciful, daughter of JAHNU, consoler, giver
 " of consolation. *Gangā*, 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 *Vēda*; "Thrice did VISHN'U 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 goddesses of abundance, may
 " I obtain prosperity." The literal sense is this, "I here invoke that goddesses
 " 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 untrodden 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 basest 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 sins towards mortals by employing mortal men to offici-

“ ate at sacraments. Therefore defend me from the pernicious sin of offend-
 “ ing 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 *cusa* grass, and with the rays of the sun. Lord of pu-
 “ rity, 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 ref-
 “ plendent sun purify me &c.” Thrice plunging into water, the priest should
 as often repeat the grand expiatory text, of which YAJNYAWALKYA says,
 ‘ it comprizes the principles of things and the elements, the existence of the
 ‘ [chaotick] 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” (MĒNU, 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.” (MĒNU, 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 MĒNU 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 *Gáyatrí* &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 trilateral 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 : be-
 " cause, 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 sipped 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 eat-
 " en 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 *Vēda*. Turning his face towards the east, with his right hand towards the south, and his left hand towards the north, sitting down with *cūśa* 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 *Gāyatrī*, the priest should recite

the proper text on commencing the lecture, and read as much of the *Vēdas* as may be practicable for him, continuing the practice daily until he have read through the whole of the *Vēdas*; and then recommencing the course.

PRAYER on beginning a lecture of the *R̥gveda*: "I praise the blazing fire, which is first placed at religious rites, which effects 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 *Vēda*, 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 *Sāmaveda*: "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 grass."

THE text, which is repeated on commencing a lecture of the *At̥harva veda*, has been already quoted on another occasion. "May divine waters be auspicious to us &c."

IN this manner should a lecture of the *Vēdas*, or of the *Vedāngas*, 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 *cuśa*

grafs 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 grafs." 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 grafs and be cheerful." Spreading the *cus'a* grafs, 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 grafs 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 *cus'a* grafs, the middle of which must rest on the palm of his hand: this oblation he presents on grafs, the tips of which are pointed towards the north; and with it he pronounces these words: "May SANACA be satisfied; may SANANDANA, SANA'TANA, CAPILA, A'SURI, BO'D'HU, and PARCHAS'IC'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

* The verb is repeated with each term: "May the holy verses be satisfied; may the *Vedas* be satisfied &c."

is 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 deno-
 " minated from sitting on holy grass, be satisfied herewith." He must then make a similar oblation, saying, " May NA'RA'S'ARYA, PA'RA'S'ARYA,
 " S'UCA, S'A'CALYA, YAJ'NYAWALCYA, JA'TUCARN'A, CA'TYA'YANA,
 " 'APASTAMBA, BAUD'HA'YANA, VA'CHACUTÍ', VAJJAVA'PI', HU'H'U,
 " LO'CA'CSHÍ', MAITRA'YANÍ', and AINDRA'YANÍ', be satisfied here-
 " with." 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 DHERMA
 " RA'JA or the king of deities ; to death ; to ANTACA or the destroyer ;
 " to VAIVASWATA 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 *nīla* 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 quiriters, fierce giants, blood thirsty savages, unmeasured guardians of the celestial treasure, successful genii; spirits called *Cushmānda*, 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 *Sāmaveda*, 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 *Vishnu Purāna*, 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.

S I R,

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 *Cálicá Purán*, in which I was given to understand, I should meet with full information on the subject. To effect this purpose, I translated the *Rudbiráddyā* or sanguinary 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 Goddesses *CA'LI*, to whom these sacrifices are made, and of the *BHAIRĀVĀS*, sons of *SIVA*, to two of whom the chapter is addressed by *SÍVĀ*.

I am, &c. &c. &c.

W. C. BLAQUIERE.

CALCUTTA, August 15, 1796.

XXIII.

The RUDHIR'ADHYA'YĀ, or sanguinary Chapter, translated from the Cálíca Puran.—By W. C. BLAQUIERE, Esq.

SALUTATION TO CALICA.

(SHIVĀ addresses BETA'L BHAIRĀVA and BHAIRĀVĀ.)

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 Tāntrā*, 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, guanass, raindeer, lions, tygers, men, and blood drawn from the offerer's own body, are looked upon as proper oblations to the goddesses 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 *Sārābhā'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 CALI,) 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 *Hāvyās*, (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, DEVI is pleased

* *Sārābhā*, 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'MA'C'HYA', CH'ĀNDICA', and BHAI'ĀV'Ā 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 goddesses CH'ĀNDICA. Let therefore the learned, when paying adoration to the goddesses, 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 goddesses for the same duration of time, as the sacrifice of a goat.

THE performance of the sacrifice, with a *Chāndrabāṣṭī*, or *Cātri* (*two weapons of the ax kind*) is reckoned the best mode, and with a hatchet or knife, or saw, or a *Sāṅgul* the second best; and the beheading with a hoe or *Bhāllāc*, (*an instrument of the spade kind*), the inferiour 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 goddesses, 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 CA'MA'C'HYA'.

LET the sacrificer repeat the word CA'LI twice, then the words DEVI BĀJRESWARI, then LAWHĀ DĀNDA'YAI, *Namah!* which words may be rendered *Hail! CA'LI, CA'LI, 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 *Cāl rātriya* text, as follows.

LET the sacrificer say *Hrang, Hrīng. CA'LI, CA'LI, 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 *Cāl rātriya Māntrā*.

THE *Cbārgā* (the ax) being invoked by this text called the *Cāl rātriya Māntrā*, CA'LA'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 *śrub* and *śruch*, 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 goddesses *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, paste, or barley meal, let them sacrifice the same, as if a living victim, the ax 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 BHĀIRĀVĀ, 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, BHĀIRĀVI, or BHĀIRĀVĀ, let the sacrificer use the following *Māntrā* in invoking the victim:

“ In the manner that thou destroyest horses, in the manner that thou carriest CHĀNDICA’, 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 *C'harga* (ax), calling it *Gubá Játă*, 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 *Māntră* is to be used :

" O ANTELOPE ! representative of BRAHMA, the emblem of his glory,
 " thou who art even as the four *Vēdas*, and learned, grant me extensive wisdom and celebrity."

AT the sacrifice of a *Sārābhā*, let the following *Māntră* be used.

" O EIGHT footed animal ! O sportful native of the *Cbāndră Bbāgă* mountains ! thou eight formed, long armed animal * thou who art called
 " BHAIŘĀVĀ : 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
 " CHĀNDICĀ', 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 BHAIŘĀVĀ ! 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 *Cāmāc’hya*; or on a mountain.—Now attend to the mode.

THE cemetery represents me, and is called *Bhairāvā*, it has also a part called *Tāntrāṅgā*; the cemetery must be divided into these two divisions, and a third called *Heruca*.

THE human victim is to be immolated in the east division, which is sacred to BHAIŘĀVĀ; the head is to be presented in the south division, which is looked upon as the place of skulls, sacred to BHAIŘĀVI; and the blood is to be presented in the west division, which is denominated *Heruca*.

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 BRĀHMA' in the victim's *Brāhmā Rāndhrā*, i. e. cave of BRĀHMĀ, cavity in the skull, under the spot where the *Sutura coronalis* and *Sagittalis* meet. * Let him worship the earth in his nose, saying *Medinyāib Nāmāb*, and casting a flower; In his ears, *A'cāsā*, the subtile æther, saying *A'cāsāyā Nāmāb*; In his tongue, *Sarvata Muc'ba*, (i. e. BRAHMA, AGNI, &c. the regents of speech, &c.) saying *Sarvata Muc'bāyāb Nāmāb*; 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 fourth 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 DHĀNESWĀRĀ, (i. e. god of riches.) Then worshipping the *Sārpā Rājā*, (i. e. king of serpents;) on the stomach of the victim, 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
“ thy 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.” Bes-

* This is done by casting a flower there, saying *Brāhmāyē Nāmāb*; salutation to BRĀHMĀ.

“ tow upon me, O most auspicious! the bliss which is obtained by the
 “ most austere 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 *Rācsbāsās*, *Pisáchās*, 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 myself, 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 so great a sinner, he becomes pure from sin, and when pure, his blood changes to ambrosia, and he gains the love of MEHA'DEVĪ the goddesses of the *Yog Niddrā*, (i. e. the tranquil repose of the mind from an abstraction of ideas;) who is the goddesses 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 *Gāṇā Devātās*, and is much respected by me myself. The victim who is impure, from sin, or ordure and urine, *Cá-mác'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, acceptable to the goddesses 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 *Mehapatata* (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 *Mehá 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 *pacshas*, (forty-five days). Let not a beast or bird who is blind, deficient in a limb, or ill formed be offered to DEVI; 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 *Cshettree*; 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 ass 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 *Māntrā* 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 aquatick animals.

LET the antelope's head and blood, and that of the tortoise, rhinoceros and hare, and crocodile, and fish, 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 *Mādivā* (spirituous 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 cocoanut 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 venders 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 incurs 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 *Mānastāc*, and three *Devi Suctābs*, and the text *Gandbā 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 *Ambé Ambicé*, &c. and the *Rowdrā* 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 BHAI RĀ VĀ! 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 encrease of prosperity, and long life to the sacrificer, without doubt; and if it speak, whatever it says will come to pass.

If the sound *Hoonb* 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 fæces 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 south-west, on the ground as an offering to the deities, accompanied by the *Mebā Cawfci Māntrā*.

LET the victim offered to DEVI, if a buffalo, be five years old, and if human twenty-five.

LET the *Cawfici** *Māntrā* be uttered, and the sacrificer say, *Eṣā bālī 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 goddesses 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'HAMA'RI! 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 *Aṣṣin*), let the *Homa* (i. e. oblation to fire) be performed with the flesh of the victim.

* The *Cawfici Māntrā*—"Hail CAWSICI, three eyed goddesses, 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 lotos 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 *sangul* gives pleasure, in proportion to the size of the weapon.

THE sacrificer may present one fourth of the quantity which a lotos petal will contain, but he must not give more on any account; nor cut his body

more than is necessary. He, who willingly offers the blood of his body, and his own flesh the size of a grain of linseed, *masba*, *tila* or *mudga*, 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 *Cālpās* 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 goddesses SI'VA', 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 *Cṣhana* (a short space of time) holds the blood which proceeds from a victim's head in his hands, standing before the goddesses in meditation, obtains all that he desires in this world, and supremacy in the *Dévi 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 goddesses DEVI, under the form which she is at that time addressed.

“ HAIL! Supreme delusion, Hail! Goddesses 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
 " *Hōng Hōng.* 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 *Meha Navami*, or when the moon is in the lunar mansion *Scanda* or *Bishácá*, 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 *phat*. Water must be sprinkled upon the meal, or earthen victim, which represents the sacrificer's enemy, using the text commencing with *rācā drābair* (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 *Scānda* text. This is to be used at presenting the head, if the sacrifice is performed on the night of the *Scānda Nācshātra*, or lunar mansion *Scānda*. The *Viśāc'bhā Māntrā* is to be used on the night of the *Viśāc'bhā* mansion. Let the sacrificer, contemplate two attendants on the goddesses, as having fiery eyes, with yellow bodies, red faces, long ears, armed with tridents, and axes, in their two right hands, and holding human skulls, and vases in their two left. Let them be considered as having three eyes, and strings of human skulls suspended round their necks, with long shagging frightful teeth.

In the month of *Chaitra* on the day of the full moon, sacrifices of buffaloes 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 goddesses, 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 *Rudberádhyāyā*.

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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 *Manâr* * 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

* *Manara*, properly *Manâr*, is a *Tamul* 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 *Seewel*-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 *Pectines**, *Palium porphyreum*, *Solen radiatus*†, *Venus castrensis*

* Scallops.

† Radiated razor shell.

LINN.* , *Ostrea byotis* †, *Ostr. Forskolii*, *Ostr. malleus* ‡, *Mytilus hirundo* LINN. ||, *Spondylus croceus*, *Pholas pusillus* LINN. §, *Mitra episcopalis* LINN. , *Lepas striata Pennanti* (vide Zool. Brit.), *Patella tricarinata* LINN., *Bulla perfecta maculata* **, *Harpa nobilis*, *Porcellana salita* RUMPH. ††, *Strombus scorpio*, and other of inferior kinds. Amongst the Zoophytes, many valuable species of *Spongiæ*, *Corallinæ*, *Sertulariæ*, &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 description of the different animals inhabiting the shells, are the more worthy of our attention, and deserve further investigation, as we are as yet very deficient 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 bazars 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: looking forward to the fortune promised him by his stars, as he thinks it impossible for the astrological predictions of his *Brahmin* to err.

* Alpha cockle. † Double cocks-comb. ‡ 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 suttlers 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 a 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 disgusted 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 *Condatchey* so insufferably offensive when the south west wind blows, that it sensibly affects the olfactory nerves of any one unaccustomed to such cadaverous smells. This putrefaction generates immense numbers 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 donies 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 margaritiferus* 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-kârer*; 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 pyramidical 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 pyramidical 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 casts 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-

* 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 accident, may make fifty trips in a forenoon. They and the boat's crew get generally 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 *Collesh* on the Coast of *Malabar*, some of them are so much exercised in the art, as to be able to perform it without the assistance of the usual weight; and for a handsome reward, will remain under water for the space of seven minutes: this I saw performed by a *Caffry*-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 *Polypes* in the gulph of *Charybdis*, on his plunging 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*, *Pillâl-kadtâr*, 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

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.

chasers 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. Syst. 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 *branchiæ* 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

* Vide HOUTT. Natur. Hist. Vol. I, P. XV, p. 381 seq.

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 (*œsophagus*), 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 *stigma* 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 REAUMUR, 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 œconomy of the pearl-fish, this changing of habitation has been long since observed by them. They alledge, 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 *Pædoo-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 class 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 Syst. Cabt. 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

same 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 *Brabmin* informed me that it was recorded in one of his *Sanfexit* books, that the pearls are formed in the month of *May*, at the appearance of the *Sooatee* 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 criticise 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. CHERNITZ 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 lamellæ, 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 encrease, 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 grey 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 off after 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), *Tubuli marini irregulariter intorti*, *Crista-galli*, *Obama lazarus*, *Lepas tintinabulum*, *Madrepore*, *Millipore*, *Cellipore*, *Gorgonæ*, *Spongiæ*, 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 *Manâr*, the small islands near *Jafna*, 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. Spenglerii*, *Arca cuculata*†, *Arca Noë*, *Solen amatinus* LINN. *Ostrea Isognomum*, *Terebellum albidum striatum*, *Turbo scalaris*‡, *Bulla volva* LINN.¶, *Vexillum nigritarum*, &c. Amongst the beautiful Cone-shells: *Conus Thalassiaribus anglicanus lullatus*§, *Amadis Thalassiaribus*, *Con. Generalis* LINN. *C. Capitaneus*** , *C. Miles*††, *C. Stercus muscarum*‡‡, *C. rete curcum*, *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

* The golden tong. † Monkscap. ‡ Royal staircase. ¶ Weaver's Shuttle. § Red *English* Admiral. ** Green stamper. †† Garter stamper. ‡‡ Great sand stamper. || Caps, Gottw.

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.

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ASTRONOMICAL OBSERVATIONS made in the Upper Provinces of Hindustan.
By WILLIAM HUNTER, Esq.

LATITUDES OBSERVED.

1795.	P L A C E.	Sun or Star.	Latitude	Remarks.	Mean Latitude.
Feb. 23	Nawabgunge; Chubbooterah E	☉ M. A.	27 26 46	clear; moderate,	
24	Alygunge; Mosque S 66 E	☉ M. A.	27 30 18	do.	
25	Doomree; Fort S 11 E dist. 2.7 Fs.	☉ M. A.	27 33 13	do.	
26	Erjunpoor; N 61-89 W 1.75 Fs.	☉ M. A.	27 41 12	do.	
27	Mārhera; tents close to the town,	☉ M. A.	27 44 45	cloudy	
28	Secundra; (named Raw) N 30-72 E } 3.25 Fs.	☉ M. A.	27 41 29	do.	
March 2	Mindoo; Mr. Orr's House, S 34 E 4 Fs.	☉ M. A.	27 37 56	clear; do.	} 27 38 8
3	Ditto,	☉ M. A.	27 38 17	cloudy; do.	
4	Ditto,	☉ M. A.	27 38 11	thin, flit. clouds, do.	} 27 54 6
5	Coël; General Deboigne's House,	☉ M. A.	27 54 4	clear; windy,	
6	Ditto,	☉ M. A.	27 54 8	do. moderate,	
15	Jooar; dist. 2.25 Fs.	☉ M. A.	27 36 42	do. windy,	
16	Hunsecrah Gunge; dist. 3 Fs. mosque of } Abd-ul-nubbee Khan, at Matra, S 26 W }	☉ M. A.	27 31 33	do. moderate.	
17	Matra; Litcha Bagh,	☉ M. A.	27 29 46	do.	
18	Arceng; Ft. N 71 E-S 87 E 1.5 Fs.	☉ M. A.	27 29 50	do.	
19	Deeg; gate N 72 E 3.25 Fs.	☉ M. A.	27 29 6	windy,	
20	Nugur; S 83 E 3.7 Fs.	☉ M. A.	27 26 13	do. moderate,	
21	Alinagur; S 30-40 E 1 M. 7.3 Fs. }	☉ M. A.	27 31 58	do.	} brightness of the Moon obscured the Star.
	Cohery Pahary; N 2 W 4 M. 2.3 Fs.	☉ M. A.	27 31 58	do.	
30	Jables, or Bijouly; Ft. S 46-67 W 2 Fs.	☉ Urs. Maj.	27 22 1	do.	
31	Ditto,	☉ Hydrae	27 24 8	do. do.	27 23 4 5

1795.	P L A C E.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.
April					
7	Maat; S 47 E—N 49 E 1.75 Fs.	β Urs. Maj.	27 37 16	clear, moderate,	
8	Noh; Fort N 20 W—N 17 E 2 Fs.	α Hydæ	27 51 24	do.	27 50 50
	Ditto,	β Urs. Maj.	27 50 16	do.	
9	Gappel; Ft. N 12—62 W 1.4 Fs.	α Hydæ	28 3 9	clear, windy,	
	Ditto,	β Urs. Maj.	28 3 17	Do. moderate,	28 3 9
10	Ditto,	β Urs. Maj.	28 3 1	Do. do.	
11	Ragheepoor; N 8 E—N 85 W 0.5 Fs.	α Hydæ	28 14 46	Do. do.	
12	Duncour; gate S 5 E—3.5 Fs.	α Hydæ	28 21 31	Do. do.	
13	Sooreepoor; S 5 W—S 50 E 1.6 Fs.	α Hydæ	28 31 10	Do. do.	
14	Putpurgunge; S 46—81 E 2.3 Fs.	α Hydæ	28 36 47	Do. do.	
15	Dehly; Garden of Shah Nizam-ud-deen,	α Hydæ	28 38 55	Do. do.	28 38 36
16	Ditto, ditto,	α Draconis	28 38 32	Do. do.	
20	Ditto, Palace of Sudder Jung,	α Hydæ	28 40 47		
		Aliath	28 40 24		
		α υ	28 40 2		
June					
15	Secundra; N W by N 2.3 Fs.	α Draconis	28 39 37	thin clouds, moderate,	
19	Secundra; N W by N 2.3 Fs.	α υ	28 26 5	clear, calm,	
20	Ditto,	α υ	28 23 5	do.	
July					
9	Camp on bank of Neem-ca-nullah, Bifwah,	α Pisc. Aufl.	27 49 59	moderate,	
	S 40 W 1 M. 2.2 Fs.	Ditto	27 48 37	do.	
10	Kalgunge; South-east gate, N 57 W 5.4 F.				
1796					
Feb.					
13	Amelia; (village 1½ mile from Chobeeepoor)	α M. A.	26 36 6	do.	
	N 12 W 1.8 Fs.				
19	Daipoor; camp close to an old garden,	α M. A.	26 58 25	do.	
17	Amirtgunge; gate N 60 W 4 Fs.	α M. A.	27 5 10	thin flitting clouds, do.	
March					
3	Dehliah; tent near the artillery ground:	α M. A.	27 21 48	clear, moderate,	27 21 51
	bungaloh, S 66 E 1 mile,	Sirius	27 21 54	thin clouds, calm,	
4	Neemkarouly; Gate E 0, 8 F.	α M. A.	27 19 2	clear, do.	27 18 58, 5
	Ditto,	β Can. Maj.	27 18 58		

1796	P L A C E.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.
	Neemkarouly; Gate 9, 8 F.	Sirius	27 18 54	clear, do.	27 18 58, 5
	Ditto, -	β Can. Maj.	27 19 00		
5	Agut-ke-Seray, N 23—60 E 2 Fs.	⊙ M. A.	27 20 53	thin clouds, moder.	
	Ditto, -	β Can. Maj.	27 21 5	clear, calm,	
	Ditto, -	Sirius	27 21 1		27 21 12, 75
	Ditto, -	β Can. Maj.	27 21 52	clear, windy,	
6	Aleppoor-K, hera, S 25—62 E 1 F.	⊙ M. A.	27 19 31	clear, windy,	
	Ditto, -	α	27 20 2		
	Ditto, -	β Urs. Min.	27 19 35	do. moderate,	27 19 39
	Ditto, -	β	27 19 27		
	Ditto, -	α Draconis	27 20 31		
7	Beechmah; N 37—77 E 1 F.	α	27 20 39	do.	
		β Urs. Min.	27 20 5		27 20 18
		β	27 19 57		
		⊙ M. A.	27 25 31		
8	Jumlahpoor; N 20—39 E 1.6 F.	β Can. Maj.	27 25 5	do.	27 25 11
	Ditto, -	Sirius	27 24 54		
	Ditto, -	β Can. Maj.	27 25 15		
9	Sukeet; Fort S—S 51 E 1 F.	α Draconis	27 26 39	do.	
	Ditto, -	α	27 25 24	do. { alt. suspected too great.	
	Ditto, -	β Urs. Min.	27 27 5	do.	
	Ditto, -	β	27 25 50	do.	27 26 20
10	Ditto, -	⊙ M. A.	27 26 42	windy,	
	Ditto, -	β Urs. Min.	27 26 42	calm,	
	Ditto, -	β	27 25 57		
11	Etah; S 33 E—S 12 W South gate S 7 E } 2.1 F.	⊙ M. A.	27 34 18	clear, windy,	
	Ditto, -	β Can. Maj.	27 33 29		
	Ditto, -	Sirius	27 34 1		27 34 15
	Ditto, -	β Can. Maj.	27 35 4		
	Ditto, -	β Urs. Min.	27 34 12		
	Ditto, -	β	27 34 27		

1796	P L A C E.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.
12	Nadowly; Ft. S 76 E—N 88 E 3.5 Fs.	☉ M. A.	27 34 55	clear, windy,	"
	Ditto,	Sirius	27 34 16		"
	Ditto,	♂ Can. Maj.	27 34 45	do. moderate,	27 34 42
	Ditto,	♂ Urs. Min.	27 35 5		
	Ditto,	♂	27 34 27		
13	Secundra (Raw) S 74 E—N 35 W clofe	☉ M. A.	27 41 33	windy,	
14	Mulloy, Mr. Stewart's house,	☉ M. A.	27 42 45	do.	
	Ditto,	♂ Draconis	27 42 34		
	Ditto,	♂	27 42 18	do. calm,	27 42 27
	Ditto,	♂ Urs. Min.	27 42 12		
	Ditto,	♂	27 42 28		
	Ditto,	♂	27 51 56		
15	Jelaly; Mr. Longcroft's house, N E 3.5 Fs.	♂ Urs. Min.	27 52 6	do.	27 52 10
	Ditto,	♂	27 52 28		
	Ditto,	♂ Draconis	27 55 2		
16	Bellah; Mr. Lenham's house, S 85 E 4.7 Fs.	♂	27 54 48		
	Ditto,	♂ Urs. Min.	27 55 13	do.	27 54 53
	Ditto,	♂	27 54 28		
	Ditto,	♂ Can. Maj.	28 3 16		
17	Attrawly; North gate, S 16 V 2.7 Fs.	♂ Draconis	28 2 2	thin clouds, moder.	28 2 14
	Ditto,	♂	28 1 27		
	Ditto,	♂ Urs. Min.	28 2 5		
	Ditto,	♂	28 2 21		
18	Debay; S 2 E—S 13 W North gate S 6 W 7.2 Fs.	☉ M. A.	28 14 1	clear, moderate,	
20	Anoopshah; Col. Ware's bungalow,	☉ M. A.	28 23 6	clear, windy,	
21	Ditto,	☉ M. A.	28 23 21	do.	
22	Ditto,	♂	28 22 49	clear, calm,	28 23 7
	Ditto,	♂	28 23 14	stars rather ob- scured by the brightness of the moon.	

1796.	P L A C E.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.
March 24	Arawly; South gate, distance 4-6 F.	δ Can. Maj. 28	1° 31'		
	Ditto, -	η Can. Maj. 28	1° 43'		
	Ditto, -	ζ Navis 28	2° 36'	clear, calm.	28 1 54
	Ditto, -	α Hydræ 28	1° 48'		
29	Alygunge; E gate, distance 1-3 F.	ζ Navis 27	30° 27'		
	Ditto, -	α Hydræ 27	29° 54'	clear, windy,	27 29 38
	Ditto, -	β Urs. Maj. 27	29° 9'		
	Ditto, -	γ Urs. Maj. 27	29° 3'		
May 30	Betourah; N 62 E 1 mile.	α Urs. 26	2° 52'		
	Right-hand bank of Ganges.	α Draconis 26	1° 23'	do.	26 1 54
		α Urs. 26	1° 29'		
		β Urs. Min. 26	1° 51'		
31	Yacoot-Gunge; (small village, left hand bank of Ganges).	α Urs. 25	40° 2'	clear, moderate,	
June 1	Shazadpoor; S 22 W about 2 miles, Allahabad; Ft. S E angle.	Aliath α Urs. 25	24° 54'		
		α Urs. 25	25° 54'	hazy, calm,	25 25 21
		α Urs. 25	25° 14'		
2	Mudura, near Litchageer.	Aliath α Urs. 25	17° 47'		
		α Urs. 25	17° 31'		
		α Draconis 25	16° 6'		
		α Urs. 25	16° 42'		
		α Draconis 25	9° 6'		
3	Mirzapoor; E 1/2 mile.	α Urs. 25	10° 20'	clear, moderate,	25 9 43
		β Urs. Min. 25	9° 43'		

ECLIPSES OF JUPITER'S SATELLITES observed with DOLLOND'S ACHROMATIC TELESCOPE, magnifying 80 Times.

Apparent Time.	Sat.	Em.	Place of Observation.	Longitude.	Weather.	Remarks.
1794.						
Jan.	D. H. M. S.					
March,	24 17 28 44	1 Im.	Tandah	82 11 00	a little hazy: mod.	
	4 15 54 8	1 Im.	Lucknow (Mr. Orr's House)	80 39 15	clear calm.	
	31 14 59 15	2 Im.	Meerpoor	78 30 15	Ditto windy	The brightness of Jupiter made the Satellite indistinct.
April,	29 12 41 39	1 Im.	Fatehgarh	79 18 00	Ditto moderate	
May,	2 14 44 32	2 Im.	Ditto	79 16 15	Ditto ditto	
	13 16 30 16	1 Im.	Ditto	79 18 30	Ditto windy	
June,	3 14 19 21	2 Im.	Kanipoor (Mr. Yeld's Bungalow)	79 55 00	Ditto moderate	
1795.						
March,	23 17 9 31	1 Im.	Camp near Alinagar	76 51 15	Ditto ditto	
May,	3 15 41 42	1 Im.	Dehly; Salder Jung's House	76 42 00	thin clouds: calm.	The planet was clouded, a few seconds, about the time of immersion.
	3 16 13 43	2 Im.	Ditto	76 48 45	clear: moderate.	The Satellite certainly visible till this time: as the Sky was not very clear, the immersion may have been some seconds later.
	37 13 58 6	1 Im.	Ditto	76 48 30	cloudy: ditto	As the Telescope was shaken by the wind, the emersion was probably a little earlier.
June,	27 14 19 05	3 Im.	Ditto	78 2 45	lear windy	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 58" a day, mean time; but between the 4th at 7 1/2 a. m. and the 5th at the same hour, lost 2 59", 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 4 1/2 p. m. and found the loss, in 9 hours, apparent Time to be 40".
	4 15 55 00	2 Im.	Ditto	77 8 45	Ditto calm	Allowing this rate from 4 a. m. to 7 1/2, the loss in that Time will be 16", giving Watch slow for apparent Time 24 18 30" at the time of observation, and this is the quantity here allowed.
July,	11 10 38 40	1 Im.	Dehly	77 48 45	Ditto ditto	Planet rather near the Horizon.
Nov.	15 6 42 30	2 Im.	Ejnipoor	78 34 45	Ditto moderate	
	21 7 23 12	1 Im.	Fatehgarh	79 49 15	Ditto calm	
Dec.	14 7 29 12	1 Im.	Ditto	80 2 45	Ditto ditto	

The Variation of the Compass, observed by the Sun's Azimuth.

N. B. Both the Altitudes and Azimuth were taken with the Theodolite.

1792.	Place.	A or P.M.	Altitude.	Azimuth.	Variation.	Mean.
Feb. 23	Baad	P.	22 39 00	116 2 00	1 8 00 E	} 0 19 30 W
May 1	Oujein	A.	11 25 53	78 8 00	0 2 00 E	
May 2	Ditto	A.	14 4 45	79 34 00	0 41 00 W	
1796.						
April 9	Futtebgurb	P.	1 20 00	82 20 00	1 37 00 E	} 1 42 13 E
April 12	Ditto	A.	22 30 51	90 19 00	} 1 47 27 E	
			23 20 57	89 52 00		
			23 54 00	89 33 00		

1796. April 15th, at *Futtebgurb*; observed the following distances of the Moon from *Aldebaran* and *Spica*.

Time by Watch.	Distant Moon and <i>Aldebaran</i> nearest Limb.	Time by Watch.	Distant Moon and <i>Spica</i> farthest Limb.
H. M. S.	° ' "	H. M. S.	° ' "
6 43 22	61 10 15	8 1 58	72 54 30
50 20	13 00	5 10	52 15
57 05	15 15	8 46	51 15
7 3 45	18 00	12 2	49 45
9 05	19 45	15 49	47 30
6 56 43	61 15 15	8 8 45	72 51 03

Also, the following Altitudes, for rectifying the Watch.

Time by Watch.	Altitude <i>Aldebaran</i> .	Time by Watch.	Altitude <i>Spica</i> .
7 36 58	24 39 45 double angle	7 46 4	63 40 00 double angle
		48 33	64 36 30
		51 9	65 34 15

Error of the Sextant 2' 15" Subtractive

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

	Apparent Time.	Apparent Altitude.		True dist. center Moon and Star.	Longitude.
		Moon.	Star.		
	H. M. S.				
1st Set Aldebaran	7 43 29	78 49 41	21 7 9	61 38 36	79 41 45
2d Set, Spica	8 55 31	64 20 48	35 54 52	72 14 54	80 7 45

Longitude of Futtehgur by mean of both sets 79 54 45

N. O. T. E.
RESPECTING THE INSECT DESCRIBED IN PAGE 213.

THIS insect is the *Meloe Cichorii* of LINNÆUS. 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 Cichorii* 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 quan-
 “ tities, not only upon the *Cichorium*, 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 ex-
 “ tirpating warts; and Mr. CASIMIR SANSON 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, ac-
 “ cording to the age, sex and constitution of the person, but the above men-
 “ tioned 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 Morschlins.—Trans-
lated from the German, by ANTHONY AUFRERE, Esq.—London 1795,

page 148.

N O T E.

REFERRING TO PAGE 204 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.

REPORT TO PAGE 10 OF THIS DOCUMENT

Having been called before, I took that opportunity of again explaining the Observatory, and also showed the circle which stands on the elevated terrace to the East, (indicating the position of which I formerly spoke with some degree of hesitation) as being situated in a plane parallel to the Equator.

W. HUNTER.

September 26, 1797.

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CORRECTIONS.

Page.	Line.		
133	2	for गुरुवः	read गुरोः
—	8	— नवीनमेषु	— नवीनामेष
167	2	— <i>Urceola elastica</i> ,	— <i>Urceola elastica</i> ,
168	21 & 24	The same correction as above.	
177	5	After countries put a comma.	
179	1	Right hand column	اگر صفحہ 1 begins the 2d paragraph.
—	10		از نارسائی begins 3d paragraph.
180	6		for وصول read اصول
181	2		و حال begins 5th paragraph.
—	8		for کامکاری read کامکاری
182	5		دفعہ 5 begins 6th paragraph.
—	11		پہرچند begins 7th paragraph.
—	13		After پیرامون read ان.
184	14	Left hand column	for HIPPARCUS read HIPPARCHUS
—	16	Right hand column	و برای begins 8th paragraph.
186	9		چون begins 9th paragraph.
188	penult.		for رصدی read رصد
192	23	— numbers	— number
201	15	— whereas	— and
204	11	— described	— described
209	14	— a powerful	— the powerful
213	last line	— pallel	— parallel
214	17	dele the comma after <i>Hibiscus</i> ,	
248	last line	for SWAYAMBHWVA, read SWAYAMBHVA,	

Page. Line.

250 last line

for NABA'HI, read NA'BHI.

left hand column—the same correction as above.

251 5

258 8

262 —

— 17

268 21

270 8

275 25

276 —

277 8

280 2

— 4

297 13

413 1

for more little

read little more

— SANDRACUPTAS,

— SANDRACUPTOS,

— CHANDRA'-GUPTA,

— CHANDRA-GUPTA,

— RACSHACA,

— RACSHASA,

— Saraseni.

— Suraseni.

— Uxcentus,

— Uxcentus,

— NUNNUS

— NONNUS

— TAVERNIER

— Mr. BERNIER

— parts,

— ports,

— AMANTA,

— ANNANTA,

— SAMUAR

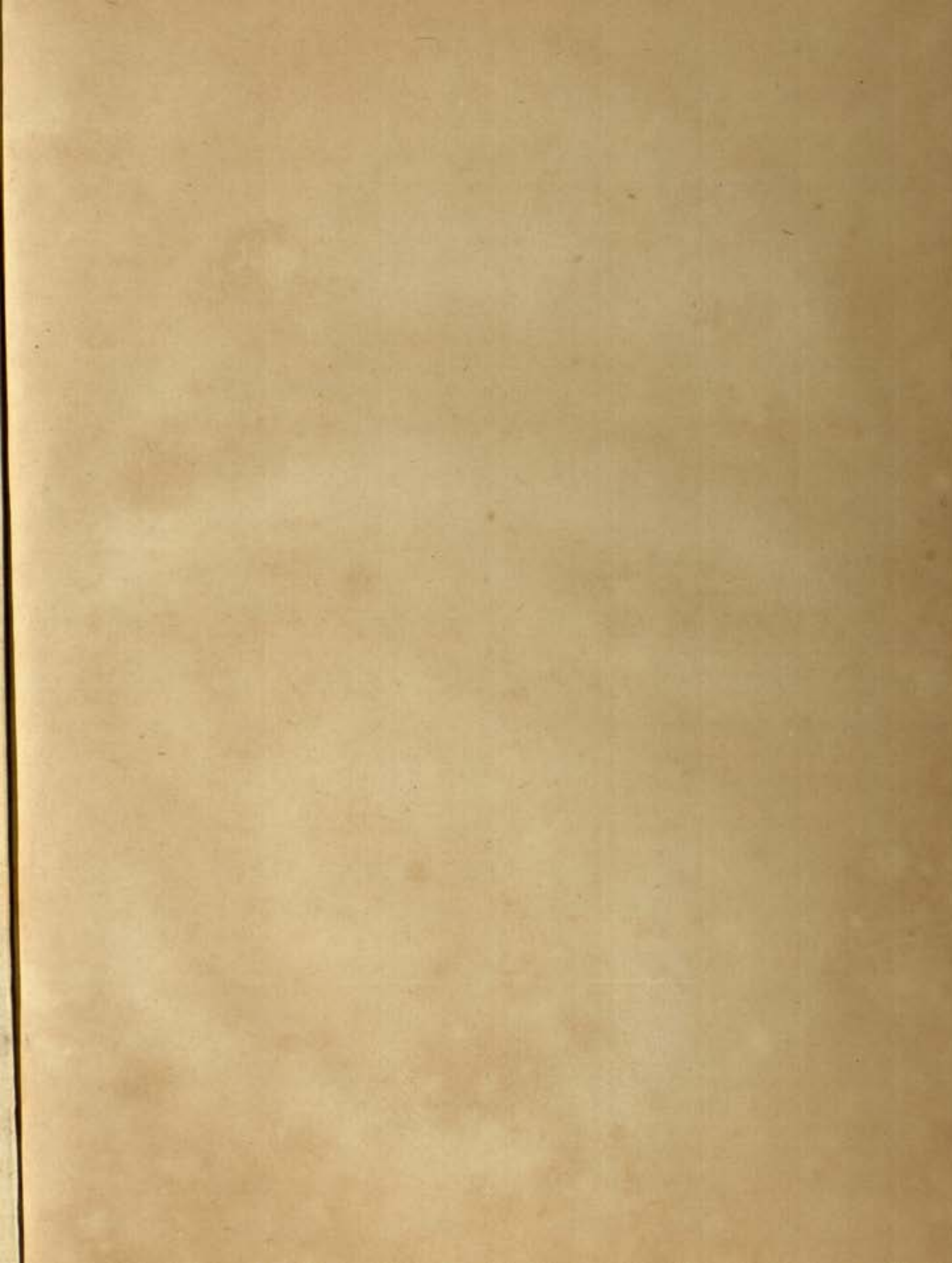
— SAMUDR

— XX.

— XXV.

THERE are some other oversights, or errors of the press, both in punctuation and orthography, which the reader is desired to correct.





✓
N.
82 ✓

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