



Ex Libris

K.K. Venugopal

ASIATICK RESEARCHES;
OR,
TRANSACTIONS
OF THE
SOCIETY INSTITUTED IN BENGAL,
FOR INQUIRING INTO THE
HISTORY AND ANTIQUITIES,
THE
ARTS, SCIENCES, AND LITERATURE,
OF
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VOLUME THE FIFTH.

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L O N D O N :

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THE deserved estimation in which the Transactions of the various Societies in Great Britain, as well as upon the Continent, have hitherto been held, is a circumstance so well known that nothing in this place need be said upon the subject; but the lucubrations of the Asiatic Society have not been so widely diffused. Nearly the whole of the impresson of the Asiatic Researches is distributed in the East Indies, therefore very few copies reach Europe; and this, among other reasons, has given rise to the present publication. To suffer so many valuable Papers, on a vast variety of Literary, Scientific, and Antiquarian Subjects, to lie buried on the shelves of a few persons would have been an unpardonable offence; but to rescue from a kind of oblivion, and to present to their Countrymen in Europe, a regular series of the Papers communicated to the Asiatic Society, is the intention of the Undertakers of the present Work. This Society, it is well known, had the late excellent and learned Sir WILLIAM JONES for its Founder, and for its President many years; but since he has favoured the world with an account of its origin in the first volume of the work, we shall content ourselves with referring our Readers to that discourse, wherein they will find an ample display of its utility, and a detail of its objects of pursuit.

IN the dissertation on the Religious Ceremonies of the Hindus, p. 361, of the present volume, the author cites a passage which appears to have reference to the creation of the universe, and which seems, upon the whole, to bear some resemblance to the account given by Moses in the Pentateuch. This naturally leads us to consider the antiquity of both the Mosaic and Hindu Scriptures, and to compare, in some measure, the accounts given in each work relative to that important fact.

The writings of MOSES have generally been considered as more ancient than those of any other person; but the Hindu Scriptures, so far as the researches of several learned men have extended, appear to be of very high antiquity, and are even carried by some beyond the time of the Hebrew Lawgiver. Sir W. JONES, in his Preface to the "Institutes of Hindu Law; or the Ordinances of MENU, according to the Gloss of CULLU'CA," carries the highest age of the *Yajur veda* 1580 years before the birth of CHRIST, which is nine years previous to the birth of MOSES, and ninety before MOSES departed from Egypt with the Israelites. This date, of 1580 years before CHRIST, seems the more probable, because the Hindu sages are said to have delivered their knowledge orally. CULLU'CA BHATTA produced, what may be said to be very truly, the shortest, yet the most luminous; the least ostentatious, yet the most learned; the deepest, yet the most agreeable, commentary on the Hindu Scriptures, that ever was composed on any author ancient or modern,

dern, European or Asiatic; and it is this work to which the learned generally apply, on account of its clearness. We shall not, however, take up your time with a dissertation on the exact age of either the Hebrew or the Hindu Scriptures; both are ancient: let the learned judge: but some extracts from the Hindu and Hebrew accounts of the creation may serve to shew how much they agree together: whether the Hindu Bráhmens borrowed from MOSES, or MOSES from the Hindu Bráhmens, is not our present inquiry.

Extracts from the Laws of
MENU.

Extracts from the Writings
of MOSES.

THIS universe existed only in the first divine idea yet unexpanded, as if involved in darkness, imperceptible, undefinable, undiscoverable by reason, and undiscovered by revelation, as if it were wholly immersed in sleep; (chap. i. 5.)

Then the sole self-existing power, himself undiscerned, but making this world discernible, with five elements and other principles of nature, appeared with undiminished glory, expanding his idea, or dispelling the gloom. (ib. 6.)

He, whom the mind alone can perceive, whose essence eludes the external organs, who has no visible

IN the beginning God created the heaven and the earth. (Gen. i. 1.)

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parts, who exists from eternity, even HE, the soul of all beings, whom no being can comprehend, shone forth in person. (ib. 7.)

He, having willed to produce various beings from his own divine substance, first with a thought created the waters, &c. (ib. 8.)

The waters are called *nárá*, because they were the production of NARA, or *the spirit of God*; and, since they were his first *ayana*, or *place of motion*, he thence is named NA'RA'YANA, or *moving on the waters* (ib. 10.)

From THAT WHICH IS, the first cause, not the object of sense, existing *every where in substance*, not existing to our perception, without beginning or end, was produced the divine male. (ib. 11.)

—He framed the heaven *above* and the earth *beneath*: in the midst *he placed* the subtile ether, the eight regions, and the permanent receptacle of waters. (ib. 13.)

And the earth was without form, and void; and darkness was upon the face of the deep: and the Spirit of God moved upon the face of the waters. (ib. 2.)

And God said, Let us make man in our image. (ib. 26.)

And God said, Let there be a firmament in the midst of the waters; —and God called the firmament Heaven. (ib. 6, 8.)

M-E-N-U.

—He framed all creatures. (ib. 16.)

—He too first assigned to all creatures distinct names, distinct acts, and distinct occupations. (ib. 21.)

—He gave being to time and the divisions of time, to the stars also, and the planets, to rivers, oceans, and mountains, to level plains, and uneven vallies. (ib. 24.)

M-O-S-E-S.

And God said, Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth in the open firmament of heaven. And God created great whales, and every living creature that moveth, which the waters brought forth abundantly after their kind, and every winged fowl after his kind. And God said, Let the earth bring forth the living creature after his kind, cattle and creeping thing, and beast of the earth after his kind. (ib. 20, 21, 24.)

God brought every beast of the field unto Adam to see what he would call them. And God put the man into the garden of Eden to dress it and to keep it. Abel was a keeper of sheep, but Cain was a tiller of the ground. (ib. ii. 19, 15, iv. 2.)

God said, let there be lights in the firmament of heaven, to divide the day from the night; and let them be for signs, and for days, and for years.— And God made two great

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To

MENU.

To devotion, speech, &c. for he willed the existence of all created things. (ib. 25.)

For the sake of distinguishing actions, He made a total difference between right and wrong. (ib. 26.)

—Having divided his own substance, the mighty Power became half male, half female. (ib. 32.)

He, whose powers are incomprehensible, having created this universe, was again absorbed in the Spirit, changing *the time of energy* for *the time of repose*. (ib. 56.)

Thus the accounts of MOSES and the Hindu Scriptures concerning the creation may be easily reconciled to each other. But it is not our intention to support the Hindu writings in preference to the Hebrew Pentateuch; all we desire is, that truth may be investigated, and that error may be exploded. There are many persons, no doubt, in the East better acquainted with the antiquity of the

MOSES.

lights; the greater light to rule the day, and the lesser light to rule the night. (Gen. i. 14, 16. see also chap. ii. 10, 11, 13, 14. & aliis locis.)

If thou doest well, shalt thou not be accepted? and if thou doest not well, sin lieth at the door. (ib. iv. 7. see also chap. ii. 16, 17.)

God created man in his own image; in the image of God created he him; male and female created he them. (ib. i. 27.)

Thus the heavens and the earth were finished, and all the host of them. And on the seventh day God ended his work;—and rested on the seventh day from all his work. (ib. ii. 1, 2.)

the Sanscrit books than we are, and by our intercourse with the Bráhmens and learned Pundits, much may be done towards a right discovery of this important matter. The Hindus have, for many ages, looked upon their Scriptures as a revelation from the Supreme Being of his mind and will concerning the works of his creation. They bring forward the Deity declaring his own mind, and think they have an indubitable right to follow the precepts which his word, according to their ancient lawgivers, contains. MOSES too, in his Pentateuch, tells us, that the Almighty ordered him to promulgate his law among the people, and to shew them the path in which they should walk. The Jews, and after them the Christians, have generally received MOSES's account as valid, and have consequently followed its dictates with a religious zeal. Enthusiasm among every description of people must certainly be despised, but zeal in contending for the truth is highly commendable in whomsoever it shall be found. Had the Hindu writings, divested of the fabulous passages, been disseminated in the Western world with as much energy as the works of MOSES have been spread abroad, perhaps they would likewise have found many admirers and advocates.

Sir W. JONES, speaking of the Laws of MENU, says, they contain abundance of curious matter extremely interesting both to speculative lawyers and antiquaries, with many beauties which need not be pointed out, and with many blemishes which cannot be justified or palliated. It is a system of despotism and priestcraft; both indeed limited by law, but artfully conspiring to give mutual

tual support, though with mutual checks: it is filled with strange conceits in metaphysics and natural philosophy, with idle superstition, and with a scheme of theology most obscurely figurative, and consequently liable to dangerous misconception; it abounds with minute and childish formalities, with ceremonies generally absurd and ridiculous; the punishments are partial and fanciful; for some crimes, dreadfully cruel, for others reprehensibly slight; and the very morals, though rigid enough on the whole, are in one or two instances (as in the case of light oaths and of pious perjury) unaccountably relaxed: nevertheless, a spirit of sublime devotion, of benevolence to mankind, and of amiable tenderness to all sentient creatures, pervades the whole work; the style of it has a certain austere majesty, that sounds like the language of legislation, and extorts a respectful awe; the sentiments of independence on all beings but God, and the harsh admonitions, even to kings, are truly noble; and the many panegyrics on the *Gáyatri*, the *mother*, as it is called, of the *Véda*, prove the author to have *adored* (not the visible material *sun*, but) *that divine and incomparably greater light*, to use the words of the most venerable text in the Indian Scripture, *which illumines all, delights all, from which all proceed, to which all must return, and which can alone irradiate* (not our visual organs merely, but our souls and) *our intellects*.

The writings of MOSES too, are not totally exempt from passages which, to the mere reason of humanity, carry with them the appearance of fiction or of cruelty. Thus the formation of woman by throwing ADAM into a deep sleep, and taking
a rib

a rib from his side, has long been matter of ridicule for the sons of infidelity; as have many other parts of the Pentateuch. But whatever opinion may be entertained of MENU and his laws, it must be remembered that they are revered as the word of God, by many millions of Hindus who compose several great nations, who are of vast importance to the political and commercial interests of Europe, whose well directed industry would add largely to the wealth of Great Britain, and who ask no greater compensation than protection for their persons and property, justice in their temporal concerns, indulgence to their old religion, and the benefit of those laws, which they hold sacred, and which alone they can understand.

*Directions to the Binder for Placing the
Plates, &c.*

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In Page 215 mention is made of a Drawing accompanying the Description of the Meloë Insect, to which References are made in Page 217; but there does not appear to have been any Plate engraved from the Drawing, as there is none in the Calcutta Edition, from which this was Printed.

I.

HISTORICAL REMARKS

ON THE

COAST OF MALABAR.

WITH

SOME DESCRIPTION OF THE MANNERS OF
ITS INHABITANTS.

By JONATHAN DUNCAN, Esquire.

SEC-
TION.

I. IN the book called *Kerul Oodputte*, 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 Malabaric 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 *Pureseu Rama*, or *Puresfram*, (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 Mangalore) to Cape Comorin, this strip of territory has, from its situation, as lying along the foot of the *Sukhien* (by the Europeans called the *Ghaut*) range of mountains, acquired the name of *Mulyalum*, (i. e. Skirting at the Bottom of the Hills,) a term that may have been shortened into *Maleyam*, or *Maleam*; whence are also probably

its common names of *Mulievar* and *Malabar*; all which *Purefram* 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; infomuch, that the first occupants, whom *Purefram* 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 immersed tract is related to have then abounded; and to which numerous accidents are ascribed, until *Purefram* 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 *Mulyalum* was, according to the *Kerul Oodputtee*, afterwards divided into the four following Tookrees, or divisions:

- 1st. From Gowkern, already mentioned, to the Perumbura River, was called the *Tooroo*, or *Turu Rauje*.
- 2d. From

* 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 2300 years since the sea came up to the foot of the *Sukhien*, 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 Poodumputtum was called the *Moshek Rauje*.

3d. From Poodum, or Poodputtun, to the limits of Kunetui, 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 *Naars*, and meaning districts or countries,) and of *Khunds*, or subdivisions, under the latter denomination.

IV. The proportion of the produce of their lands, that the *Bráhmens* 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 for the support of government, and the third for their own maintenance.

V. However this may be, according to the book above quoted, the *Bráhmens* 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 *Bráhmens* 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

try of *Chaldesh*, (a part of the Southern Carnatic;) 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* book) *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 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 *Chaldesh*, 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 1000 years anterior to the present period; and is otherwise worthy of notice, as being the epoch from which all the Rajahs 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 Mahomedanism, and being thence desirous to visit Arabia, is reported to have made, before his departure, a general division of Malabar among his dependents, 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

mentions that, after this defeat of *Kishen Rao's* army, *Shunker*, a supposed son of *Mahadeo*, (the principal of the Hindu Gods,) regulated the casts 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 casts to approach, inasmuch, that the bare meeting with them on the road entailed pollution, for which the party of the superior cast is required to bathe.*

A 3

VII. It

* Of the several casts in Malabar, and their distinctions, I received the following summary account from the Rajah of Cartinad. 1. *Namboory Bráhmens*. 2. *Nayrs*, each of various denominations. 3. *Teer*. 4. *Malere*. 5. *Polere*, called (he says) *Ders* in Hindostan. The *Teers* are cultivators of the ground, but freemen. The *Maleres* are musicians and conjurors, and also freemen. The *Poleres*, or *Poliars*, 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, *Sukhien Purbet*, or Hills of *Sukhien*, with the guttural *Kh* pronounced as *Ch*.

N. B. *Pouliats* and *Poulichis*, mentioned by RAYNAL, are only the one the male, and the other the female, of *Polere* aforesaid. The system of observations in regard to distance to be observed by the several casts in Malabar, are (according to the Rajah of Cartinad's explanation) as under specified.

1. A *Nayr* may approach, but must not touch, a *Namboory Bráhmen*.
A *Teer* is to remain thirty-six steps off from one.
A *Malere* three or four steps further.
A *Polere* ninety-six steps.
2. A *Teer* is to remain twelve steps distant from a *Nayr*.
A *Malere* three or four steps further.
A *Polere* ninety-six steps.
3. A *Malere* may approach, but is not to touch, the *Teer*.
4. A *Polere* is not to come near even to a *Malere*, or any other cast but a *Mapilla*, the name given to the Mahomedans who are natives of Malabar. If a *Polere* wishes to speak to a *Bráhmen*, or *Nayr*, or *Teer*, or *Malere*, he must stand at the above prescribed distance, and cry aloud to them.

If a *Polere* touch a *Bráhmen*, the latter must make expiation by immediately bathing, and reading much of the divine books, and changing his *Bráhmenical* thread. If a *Polere* touch a *Nayr*, he is only to bathe; and so of the other casts,

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 provisions by an *Erary*, or person of the cow-herd cast; who, with his brother, had, during the preceding warfare, come from their native town of Poondra (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 symbol 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 *Shermango 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,

after, in consequence 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 *Chaladesh* 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 proselytes in converting the natives, as in purchasing or procuring the children of the poorer classes, and bringing them up in that faith: and these Arabian traders, bringing annually sums of money to the Malabar coast, for the pepper and other spices that they carried from it for the supply of all the rest of the world, received every encouragement, and the fullest protection for their property and religion, from the successive *Samoories*, or *Zamorins*, whence they naturally grew into the habit of rendering that part of the coast the centre of their traffic and

residence; and so rivetted had, through these long habits of intercourse, become the connexion 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 as naturally lead the Rajahs of *Cochin*, and of other petty states, that stood always in fear of the ambition and superior power of the *Samoories*, to afford to the *Portuguese* a kind reception in their ports; from which collisions of interests a very cruel warfare, by sea and land, was for many years carried on between the *Samoories*, or *Zamorins*, and their subjects, Hindus and Mahommedans, aided occasionally by the Egyptians and Turks, on the one part, and the *Portuguese*, with the *Cochin* and other Rajahs as their allies, on the other; of the various successes and reverses in which, the only *Asiatick* relation I have met with, is contained in a work, with which, during my stay in Malabar, I was obligingly favoured 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 Mahommedan part of the Malabar community. This book, written in the Arabic language, is said to have been composed by ZEIRREDDIEN MUKHDOM, an Arab, Egyptian, or subject of the Turkish empire; who is thought to have been one of those dispatched to assist the Mahommedan Princes of India, and the *Zamorin*, against the 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

of the information acquired by this Mahommedan author, whose relation terminates with the year 987 of the Hejira, answering to the year of our Lord 1579-80.

XI. This author begins with nearly the same account of the conversion of *Shermanoo Permaloo* (whose real or proper name, or rather the epithet bestowed on his station, this Muffulman 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 *Mohammed's* having *divided the Moon*, the Viceroy was so affected by this instance of supernatural power, and so captivated by the fervid representation 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

* 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 *Fakeer* 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 *Oordhbahu*, 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*.

Chuckerwutty (whom *Mahommed* had dignified with the title of *Sultaun Tauje ul Herid*, is mentioned in *ZEIRREDDIEN*'s 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 favour 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 21st year of the *Hejira*, or A. D. 642.

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

* 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 *Shermaloo* 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.

of these countries there were at the same time two *Hakims*, or rulers; in others three, and in some even more; 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 *Colaſtrian* 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 ancient custom of theirs, which in modern times has, however, fallen with the majority into disuetude.

2d. “ The rulers of Malabar are of two classes or parties, one of which acts in support of the *Samoory* Rajah,

“ Rajah, whilst the other party acts in concert 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 ancient 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 *Bráhmens*, (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 above mentioned, his surviving relative
 “ is to remain apart for a twelvemonth; 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 in-
 “ heritance vests in the brother of the mother, or goes
 “ otherwise to the sister’s son, or to some of the ma-
 “ ternal 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 per-
 “ sons, who do thus exclude their sons, be well read
 “ in the *Korán*, and have imbibed its precepts, and
 “ are

“ are men of study and piety.* However, among
 “ the *Bráhmens*, goldsmiths, carpenters, and iron-
 “ smiths, 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 prac-
 “ tised among these casts.

5th. “ But the *Nayrs* practise not marriage, except
 “ as far as may be implied from their tying a thread
 “ round the neck of the woman 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 *Bráhmens*, where there are more
 “ brothers than one, only their elder, or the oldest
 “ of all of them, will marry, provided he have had,
 “ or be likely to have, male issue: but these brothers
 “ who thus maintain celibacy, do nevertheless coha-
 “ bit with *Nayr* women, without marriage, in the way
 “ of the *Nayrs*; and if, through such intercourse, a
 “ son should be born, they will not make such child
 “ their heir. But when it becomes known that the
 “ elder married brother (in a family of *Bráhmens*) will
 “ not have a son, then another of the brothers enter
 “ into the state of matrimony.

7th. “ Among the *Nayrs* it is the custom of one
 “ *Nayr* woman to have attached to her two males,
 “ or four, or perhaps more;† and among these a
 “ distribution

* I have, however, reason to believe, that this rule and custom is now wearing out among the *Mapillas*, or Malabar Mahommedans; 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 Toorecherie, or Cotta river, to Cape Comorin; for to the northward of the said river the *Nayr* women are said to be prohibited from having more than one male connection

“ 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, iron-
 “ smiths, and others, have fallen into the imitation
 “ of their superiors, the *Nayrs*, with this difference,
 “ however, that the joint concern in a female is,
 “ among these last, limited to the brethren and male
 “ relations by blood,* to the end that no alienation
 “ may take place in the course of the succession and
 “ the right of inheritance.

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

connection at a time; for failure in which she is liable to chastisement; without, however, incurring the 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; *Tattam*, or goldsmiths; and *Kollen Perimcollen*, 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.

“ among their kings and lords, none of them think of
 “ shrouding their women from the sight of all man-
 “ kind; 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 domi-
 “ nion.*

12th. “ In case the line of descent and succession
 “ become extinct among them, or be in danger of be-
 “ coming so, they do then bring an alien, (whether an
 “ adult or minor,) and him they constitute the inhe-
 “ ritor, 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 Shopkeepers,
 “ from the highest to the lowest; so that the line of
 “ descent becomes not extinct.†

13th.

* Thus in the *Zamorins'* families, and in that of the Rajahs of *Paulghaut*, there are from fifty to an 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.

13th. “ They have, moreover, subjected themselves
 “ to a multitude of inconveniencies, or difficult ob-
 “ servances, which they do, nevertheless, stedfastly ad-
 “ here to: as, for instance, they have arranged and
 “ limited the fitness of things as respectively appli-
 “ cable 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 be-
 “ tween them is known and defined; and if this dis-
 “ tance be encroached upon, he of the higher cast must
 “ bathe: nor can he lawfully touch food before under-
 “ going this purification; or if he do, he falls from
 “ his dignity, to which he cannot be raised again; nor
 “ has he any other resource than to betake himself to
 “ flight, and, forsaking his abode, to proceed where
 “ his situation is unknown; and should he not thus
 “ flee, the ruler of the country is to apprehend him,
 “ and shall sell him to some mean person, should even
 “ the party incurring this disgrace be a child or a
 “ woman; or otherwise he may resort to the *Moslems*,
 “ and profess the *Islam**; or else become a *Jogui*, or
 “ a *Fringy*, i. e. a *Christian*.

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

15th. “ Those who are entitled to wear the *Zunaar*,
 “ or *Bráhménical* thread, are superior to, and more no-
 “ ble than, all the classes of the *Infidels* of Malabar;
 “ and

* This is one of the reasons assigned to me by a Rajah of the *Zamorin* family, for the number of *Mapilla 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 *Mapillas*; which rule holds also good in respect to other females, as intimated in the second note page 13, and in the sequel of *ZEIRREDDIEN*'s text.

“ 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 res-
 “ pectable; and these also have among themselves the
 “ same distinctions of first, second, and third degrees.
 “ 16th. “ The *Nayrs* of *Malabar* follow the martial
 “ profession*, and exceed both in numbers and dig-
 “ nity, having sundry degrees among themselves; and
 “ inferior to them in cast are the *Teers*, whose practice
 “ it is to climb up the cocoa-nut 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 *Pol-
 “ leres*, or *Poliars*, (i. e. ploughmen,) and those of
 “ other base casts, engaged in the manual part of
 “ husbandry; and among whom also are other su-
 “ bordinate degrees of distinction†.

* Poliar 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 faulchion brandish'd 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 MAC LEAN (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 accounts, 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 *Christian*, or a female *Jogui*; and this custom is general*.

18th. “ In cases of fornication (or what is locally deemed the illicit intercourse 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 above-mentioned: yet, if a *Bráhmén* fornicate with a *Nayr* woman, he shall not thereby lose his cast; there being between those two old tribes that anciently established connection which hath been already noticed.

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 encreasing the number of the faithful †”

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

* 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 with inverted commas.

fructed by, the Mahommedan 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 negotiations, 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 Mahommedan 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 *Mahommedans* 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 Hofaine*, an officer in the service of *Kaunis 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 Mahommedan traders continued, in the mean time, to

B 2

experience

* The principally current Malabar æra 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 *Qui-loan*), 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 æra.

experience 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 an-
 " cient 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 Mahom-
 " medan community by the commission of unlimited
 " enormities; such as beating and 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 ap-
 " parel, in order thereby to deceive and allure the wo-
 " men of the believers. They did also put *Haji's*, and
 " other Mussulmans, to a variety of cruel deaths; and
 " they reviled and abused with unworthy epithets the
 " Prophet of God; and confined the Mahomedans,
 " and loaded them with heavy irons, carrying them
 " about for sale, from shop to shop, as slaves; en-
 " hancing their ill usage on these occasions, in order
 " to extort the larger sum for their release. They con-
 " fined them also in dark, noisome and hideous dun-
 " geons; and used to beat them with flippers; tor-
 " turing them also with fire; and selling some into,
 " and retaining others, in their servitude as their
 " slaves. On some they imposed the severest
 " tasks,

“ tasks, without admitting of the smallest relief or ex-
 “ emption. 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 procured from them. These *Portu-
 “ guese* 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 pre-
 “ judicing and distressing the Mussulmans in a thou-
 “ sand ways; so as that I have not a tongue to tell or
 “ describe all the mischiefs and mortifications attend-
 “ ant on such a scene of evil.

2d. “ After this they exerted their utmost efforts
 “ (which they had, indeed, from first to last) to bring
 “ the Mussulmans within the pale of their religion;
 “ and they made at length peace with them for a con-
 “ sideration to be paid to them of ten in the hundred.

3d. “ The Mahommedans 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*?
 “ reviling thereon their own chiefs for not abolishing
 “ the Mahommedan religion; in the prosecution of
 “ which view the heads of the *Portuguese* desired the
 “ *Hakim* of *Cochin* to expel the *Mussulmans* from his
 “ city, promising thereon to prove themselves the
 “ means of his reaping double the profit which ac-
 “ crued to him from their 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 Cannanore, 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 Mahomedans 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 Mahomedans appear, by ZEIRREDDIEN'S narrative, to have (countenanced, no doubt, and probably actively assisted, by their friend the *Zamorin*) been engaged in a barbarous war, or attack, on the *Jews of Cranganore*, many of whom our author acknowledges their having put to death without mercy; burning and destroying, at the same time, their houses and synagogues, from which devastation they returned, and enabled their great protector, the *Zamorin*, to expel, in the course of the following year, the *Portuguese* from *Calicut*.

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

XXI. The *Portuguese* proved, however, more permanently successful in an acquisition they made in the province or (at that time) kingdom of *Guzerat*; where,
according

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 ZEIRREDDIEN with having afterwards slain) the cession of the fortrefs of Diu, of which they still retain poffeffion.

XXII. The author, ZEIRREDDIEN, places within the following year the Portuguefe building a fort at Cranganore, and their fucceffful refiftance at Diu, to an expedition fitted out againft them from Egypt, by command of the Ottoman Emperor *Solyman*, whose bafha, or commander, is reprefented to have retired in a difcreditablè manner from the conteft.

XXIII. This author places fubfequent to the Hejira year 963, A. D. 1556, a difference that enfued between the Portuguefe and *Ali Rajah**, the Mahomedan chief of Cannanore; and to whom belonged alfo the Laccadivian Iflands, which, on this occafion, ZEIRREDDIEN charges the Chrifians with having barbaroufly ravaged; and towards the clofe of his hiftorical detail, he inferts the following notice of the refult of the long and bloody competition between them and the Mahomedans for the trade of the eaft.

1ft. “ It pleafing the Almighty to try the fidelity
 “ of his fervants, he gave fcope to the Portuguefe,
 “ and beftowed on them the maftery of a number of
 “ fea-ports; fuch as thofe in Malabar, and in Guze-
 “ rat, and in Concan, &c. and they became rulers in
 “ all the towns and cities, and fwarmed therein, and
 B 4 “ reared

* The head of this principality of Cannanore (of which a female, known by the name of the *Beeby*, is the prefent representative) is alfo called *Ali Rajah*, which, in the Malabar tongue, may be interpreted “ Lord of the Sea;” a diftinction affected (as I have heard) from this family’s having long poffeffed the Laccadives, whence they have occafionally invaded the Maldives; the *Badfha*, or monarch, of which is faid to be to this day jealous of them on that account.

“ reared fortresses in Hurmuz, (Ormus,) Sacket, Diu
 “ Mehel, and in Sumatra, and Malacca, and Mil-
 “ koop; and at Mylatoor, and Nagputtun, and Aju-
 “ ram, and in the ports of Shoulmundul, (Coroman-
 “ del,) with many also in those of Ceylon. They na-
 “ vigated also as far as China; and their commerce
 “ extended throughout all these and other ports; and
 “ the Mahomedan merchants sunk under their su-
 “ perior influence, and became obedient to them, and
 “ their servants; having no longer any power to trade
 “ themselves, unless in such articles as the Portuguese
 “ did not much like to deal in: nor requires it to be
 “ suggested, that their choice fell upon 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, hav-
 ing been on the Malabar coast about the time that
 ZEIRREDDIEN'S history closes, it may tend to contrast
 the preceding state of facts according to our *Mahom-
 medan* author's view of them, to subjoin his *Christian*
 cotemporary's account of some of the same circum-
 stances.

XXV. Treating of Barcelore, a town on the
 northern part of the Malabar coast, FREDERICKE con-
 tinues, (in the words of his old English translator,)
 “ and from thence you shall go to a city called Cana-
 “ nore, which is a harquebush-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 naughty 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 Por-
 “ tugals, in the land of the King of Cranganore,
 “ which is another King of the *Gentiles*, and a coun-
 “ try of small importance, and of an hundred and
 “ twenty

“ twenty miles, full of thieves, being under the King
 “ of Calicut, (the *Zamorin*,) a King also of the Gen-
 “ tiles, 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 Carposa*, because they wear
 “ on their heads long red hats; and thieves part the
 “ spoils that they take on the sea with the King of
 “ Calicut, for he giveth leave unto all that will go a
 “ roving, liberally to go; in such wise that all along
 “ that coast there is such a number of thieves, that
 “ there is no failing in those seas, but with great ships,
 “ and very well armed; or else they must go in com-
 “ pany 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 *Cherical Rajah*, the limits of which they soon extended on the south side, by the successful termination of a warfare, which they had in 1719 with the *Corngotte Nayr*, who also agreed that they should enjoy the exclusive trade of pepper duty free within his country; an acquisition which was followed, in 1722, by their obtaining a similar exclusive privilege (with a reservation in favour of the *Dutch* trade alone) throughout the more extensive country of Cherical: and in 1725 they concluded a peace with the Rajah of the district of Cartinad; by which they became entitled to the pre-emption of all the pepper and cardamums it produced; acquiring also similar exclusive privileges in Cottiate in 1759: and in this manner so rapid appears to have been the extension of the power and influence of the British Nation

Nation on that part of the coast, that in 1727 the Company's servants at Tellicherry meditated a peace between the Kings of Canara and Colastria, under which circumstances they added, in 1734-5, the island of Dermapatam, 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 ancient 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 Cheral; 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 sandalwood; and at last obtained, in 1761, from the Rajah of Cheral, 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 42,000 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 rights of the Malabar Princes at that period.

XXVII. For otherwise those Rajahs' 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 Rajahs' 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 Cheral, 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 Rajahs' 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 *Pooreshandrum*, exacted from the *Mapillas* (i. e. the descendants of the *Muffulmans**) a share of the estates of all deceased persons;

* Of the term *Mahapilla*, 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 *Hindvee* words *Mah*, mother, and *Pilla*, a puppy; intimating, that it was a term of reproach fixed on them by the *Hindoos*, 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 thro' *Lieut. MAC LEAN's* researches, viz. that the term is indeed compounded of *Maha*, or *Mahai*, 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 *Mahai*; whilst *Pilla* is also another *Malabar* word

persons; whilst, under the donation of *Cheradayam*, they derived a considerable casual, though constant, 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 tigers, and the fins of all sharks caught, (forming a considerable article of trade,) and the wreck (as above specified) of all vessels stranded on their coasts.

XXVIII. The Chiefs who (under the denomination of the Rajahs, with the exception of a few independent *Nayr* landholders) have thus, for so long a succession of centuries, governed Malabar, are mostly of the *Khetrie*, or second tribe of Hindus; but the *Cherical* and *Samoor*y (who were the two principal families in point of extent of dominions) are of the *Samunt* or *Erary*, (i. e. cowherd cast;) as is also the Rajah of Travancore, who is a branch of the original *Colafrican* 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

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 Mahai, or Mocha."

* Gold dust is found in a hill called *Nellampoor Mella*, in the talook of *Ernaar* or *Ernaad*.

part of the general subject) is not, as in the rest of India, in favour 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 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 fathers 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, 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,

* *Namboory*, or *Namboodire*, is said by some (according to the explanation furnished to me by Lieutenant MAC LEAN) 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 *Poogia*, 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 *per-cimal*, 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.

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-apparent, 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 uncle; and having defeated him,
 " took possession of his dominions. My uncle sent a
 " vakeel (or ambassador) to HYDER ALI KHAN, to
 " request that his country might be restored to him,
 " and agreed to pay any tribute which might be settled.
 " *Hyder* gave a very favourable reception to the am-
 " bassador, 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 honour, and go to meet him,
 " when he would settle with him the terms that might
 " be concerted between them. The vakeel came back
 " with *Hyder's* men to the late Rajah, and informed him
 " of

* This is to be understood with the exception of *Paulghaut*, which HYDER had possessed himself of four or five years before.

“ of what had passed; whereupon the Rajah intimated
 “ his apprehensions of *Hyder*, whom he spoke of as
 “ a man of a quarrelsome disposition, and who had
 “ disgraced many persons of 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 Toorshery, the Rajah, my uncle, went
 “ with *Sree Newaus Rao* and *Mookut Rao* to meet
 “ *Hyder*, who advanced to *Coorumnar*, where the meet-
 “ ing took place.

2d. “ During the interview, they conversed about the
 “ country: But *Hyder* 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 in-
 “ fantry, to the fort of 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 inflict 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 requisition of Malabar by the late
Hyder Ali Khan was not of long duration; for the
Zamorin

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 become, 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 ratable 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 favour 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

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 a 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 RUVVEE 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's having himself made similar constrained conversions of a Rajah of the family of *Perepnaad*, (one of the southern *taloeks*,) and of TICHERA TEROOPAR, a principal *Nayr* of *Nelemboor*, in the same southern division of that country, together with some other persons, whom he had for various causes carried up with him into *Coimbitoor*, these combined circumstances, and the return of the above named victims to his bigotry, some short time thereafter,

into *Malabar*, spread considerable alarm; and the injured parties, as well as the great body of *Nayrs* and *Hindus*, who justly feared for what might happen to themselves, rallied around, and looked principally up to, that Prince of the *Samoory's* family, called the younger *RUVEE VURMA*, (who with his elder brother, of the same name, had some years before forced *HYDER's* officers to purchase their temporary and doubtful neutrality,) through whose assistance upwards of thirty thousand *Bráhmens* (including their wives and families) escaped from July to November, 1788, from the *Calicut* districts into *Travancore*; besides which, resenting these oppressions by *TIPPOO* on those of his sect and religion, *RUVEE VURMA* proceeded to open hostilities with the officers of *TIPPOO's* government, and proving victorious, and being assisted by the *Nelemboor* and *Perepnaad* converts, as well as by the *Nayrs* in general, and even by some of the *Mappillas*, a general insurrection took place throughout the southern districts, and the insurgents becoming masters of the open country, invested *Calicut*, so that *TIPPOO* found it necessary to dispatch *Monsieur Lally* with a strong force to its relief, on whose arrival the *Rajah* retreated, and was afterwards attacked in different places, without, however, being driven quite out of the field; insomuch that *TIPPOO*, fearing, perhaps, for the stability of his dominion in *Malabar*, followed *Monf. 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 *Cherical*, who, finding that he was also to be circumcised, attempted to escape; and being pursued by *TIPPOO's* troops, and seeing no likelihood of being able to maintain any long resistance against them, he, after providing for the safety of his sister

sister and her son, by sending them off to Travancore, preferred for himself a voluntary death to the ignominy that he knew awaited his surivance; 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 re-admitted, 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 *Mahommedans*, 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 *Mahommedans*, 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 favour, 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 re-

quire 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 Hindvee) PRAUN POORY, a *Sunyaffy*, distinguished by the epithet *Oordhbahu*, from his arms and his 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 *Asiatic 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 *Kheiry* 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 Dehli 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 *Tupisya*, or modes of devotional discipline, he made choice of that of *Oordhbahu*, 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, Burahanpoor, Aurungabad, and Elora; the surprising excavations at which place he notices: and crossing the Godavery at Tounker, 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 Seringapatam, then in 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 Chochin; 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 *Jaggernaut* in Orissa, specifying all the

the towns on this part of *his* route, which are too well known to require to be here enumerated.

From Jaggernaut our traveller returned by nearly the same route to Ramisher, whence he passed over into *Silan*, or Ceylon, and proceeded to its capital, which some, he observes, call *Khundi*, (Candi,) and others *Noora*; but that KHUNDI MAHA RAUJE is the Prince's designation; and that further 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 ancient 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 then 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 Dwarac 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 Ghizni; and that King, having an ulcer in his nose, consulted our Fakeer, to know if, being an Indian, he could prescribe a remedy for it: on which occasion the latter acknowledged that, having no knowledge of surgery or medicine, he had recourse to his wits, by insinuating to the Prince, that there most probably did subsist a connexion between the ulcer and his sovereignty, so that it might not be advisable to seek to get rid of the one, lest it should risk the loss of the other; a suggestion that met (he adds) with the approbation of the Prince and his Ministers.

VIII. PRAUN POORY afterwards travelled through *Khorasan*, by the way of Herat and Mufh-hed, to Afrabad, on the borders of the Caspian Sea, and to the Maha 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 *Sanscrit*, "The Region of Heat;" though the cause is candidly ascribed by our traveller to the natural circumstance of the ground being impregnated with *naphtha* throughout all that neighbourhood.

IX. After sojourning eleven months at this Jowalla 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 Petersburg, and thence get to Great Britain.

XI. But PRAUN POORY proceeded no farther than Moscow, from which place he returned by Astrachan,
and

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 *Kharek*, then governed by a chief called MEER MANNA, who had, he observes, taken it from the *Dutch*, and whom he represents as a chieftain living by carrying on a warfare against all his neighbours; and he mentions several Hindus as being settled here. He next arrived at the islands called *Bahrein*, on the coasts of which pearls are, he says, found; whence re-embarking for *Bufforah*, 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 Mahomedan chief of the *Bahrein* 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 *Bufforah*, 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

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 Sindh 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 *Derjak* 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 Hindustan, he came to the Gungowtri, or "Decent 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 further notices, that thirty coss 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 flow, 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 Cosa river by a bridge composed of iron chains; and observing that at Lestee, the third day's journey beyond the Cosa, is the boundary of Nepaul and Thibet, where
guards

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;) hence he proceeded to *Chehang*, 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 day's journey, (with other particulars, the insertion of all which would render this address too prolix,) till he reached *Lahaffa*, and the mountain of *Patala*, 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 *Mánasaróvara*;) 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 re-
 “ ligious 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 *Lunkadh*, or *Lunkedh*.
 “ From the *Maun Surwur* part issues one river, and
 “ from the *Lunkadh* part two rivers. The first is
 “ called *Bráhma*, where PURESAM making *Tupisya*,
 “ the *Bráhmaputra* issued out, and took its course to
 “ the eastward; and of the two streams that issue
 “ from the *Lunkadh*, one is called the *Surju*, being
 “ the same which flows by *Ayóddyà*, or *Oude*; and
 the

“ the other is called *Sutroodra*, (or, in the *Puránas*,
 “ *Shutudru*, and vulgarly the *Sutluje*,) which flows
 “ into the *Punjaub* country; and two days journey
 “ west from the Maun Surwur is the large town of
 “ Teree Ládac, the former Rajahs of which were
 “ Hindus, but have now become Mahommedans.
 “ The inhabitants there are like unto the Thibetians.
 “ Proceeding from Ládac, seven days journey to the
 “ southward, there is a mountain called *Cailasa Cungri*,
 “ (*Cungur* meaning a *peak*,) which is exceedingly
 “ lofty; and on its summit there is a *Bhowjputr* or
 “ *Bhoorjputr* tree, from the root of which sprouts or
 “ gushes a small stream, which the people say is the
 “ source of the *Ganges*, and that it comes from *Vaicont’-*
 “ *ha*, or heaven, as is also related in the *Puránas*;
 “ 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
 “ *Jagui* somehow penetrated; who, having immersed
 “ his little finger it, it became petrified. At four
 “ days journey from *Cailasa Cungri* is a mountain
 “ called *Bráhmada*, or BRA’HMA’S *Staff*, in which
 “ is the source of the *Aliknundra Ganga*; and five
 “ or six days journey to the south of that are situ-
 “ ated on the mountains the temples dedicated to
 “ CEDARA, or KEDARNAUTH and BUDRANAUTH; and
 “ from these hills flow the streams called the *Kedar*
 “ *Ganga* and *Sheo Ganga*; the confluxes of which, as
 “ well as of the *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 Hurdewar.”

XVII. PRAUN POORY went back from this part
 of the country into Nepaul and Thibet, from the ca-
 pital

pital of which he was charged by the administration 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 Fakcer, or *Bráhmechary*, (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 PURRUM SOATUNTRE, which implies *self-possession* or *independence*; and as his own relation of his mode of life is not very long, I deliver an English translation of it, as received from him in August, 1792; only observing that the *Jowalla Mookhi*, 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 Mookhis* 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, whether 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 Society, is principally on account of the strange penance he has thought fit to devote himself to, in fixing himself on his *ser-seja*, or bed of spikes, where he constantly day and night remains; and, to add to what he considers as the merit of this state of mortification, in the hot weather he has often burning around him logs of wood; and in the cold 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 source 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 *Sunyaassy*, 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

knowledge of the world extended, this gentleman is likely to throw much light on the earlier periods of the history of mankind.

Perrum Soutuntre Purkasanund Brchmchary



Translation of the Relation delivered by PURRUM SOATUNTRE PURKASANUND BREHMCHARY of his Travels and Life; delivered on the 14th of August, 1792.

I AM a *Bráhmén* of the *Yujerveda* sect, and of the line of *Prásher*. My ancestors are from the *Punjaub*. They had a long time ago come to visit at *Jaggernauth*, and had reached and were abiding at *Gopégawn*, 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 Talae*, (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*, *Mahesho*, *Mahadeo*, 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 *Sidh*, and another in one's own name; that in the name of the *Sidh* remains at the bottom, and that in one's own name rises up baked. These places I visited. At the *Maun Talae* the boundaries of four countries meet, viz. that of *China*, of the *Lama's* country, of the *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 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 Jowallah, which is situated in a country where fire rises out of the ground for the space of twelve cofs. In this Jowallah 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 *Sendhe* 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 Cashi, or Benares, I went to the temple of Jaggernauth; and visiting Balajee, proceeded on to Ramisher; and, after visiting that place, I journied on to Surat. In Surat I embarked in a vessel, and went by sea to Muscat in twelve days; and thence returning, came to Surat again. Mr. BODDAM was then at Surat; and he afterwards went to Bombay. I stayed two years at Surat. Mr. BODDAM granted me something to subsist on with my followers, and built a house for me; and still my *Cheilas*, or disciples, are there.

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 *Suthya Yug*, or first age, there was a *Rikkh*, or holy-man, called *AGNIBURNA*, who performed this *ser-seja* discipline; as in the *Treta*, or second age, did *RAVONO*, for ten thousand years; and in the *Dwapar*, or third age, *BHIKMA PITAMAHA* did the same; and in the *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 leper here in Benares.

QUESTION.

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

ANSWER.

We go to Ramifher 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 HUNOONMAN'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 *Védas* 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.

ENUMERATION

III.

ENUMERATION of INDIAN CLASSES.

By H. T. COLEBROOKE, *Esq.*

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

One of the authorities I shall use, is the *Játimálá*, or Garland of Classes; an extract from the *Rudrayámala Tantra*, which, in some instances, corresponds better with usage and received opinions than the ordinances of *MENU*, and the great *D'herma-purána*.* On more important points its authority could not be compared with the *D'herma-sástra*; but, on the subject of Classes, it may be admitted; for the *Tantras*

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form

* The texts are cited in the *Vivádárnave sētu*, from the *Vrihad D'herma-purána*. This name I therefore retain; although I cannot learn that such a *purána* exists; or to what treatise the quotation refers under that name.

form a branch of literature highly esteemed, though at present much neglected. Their fabulous origin derives them from revelations of SIVA to PÁRVATI, 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
 “ VASUDEVA, it is thence called *Agama*.”

Thirty-six are mentioned for the number of mixed Classes; but, according to some opinions, that number includes the fourth original tribe, or all the original tribes, according to other authorities: yet the text 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 BRAHMA, *Brámanas*
 “ proceeded, with the *Véda*, from the mouth of
 “ BRAHMA. From his arms *Cshatriyas* sprung; so
 “ from his thigh, *Vaisfyas*; 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

“ Viewing and comparing their labours, he made
 “ the first tribe superior over the rest. As the first
 “ had great inclination for the divine sciences, (*Bráhmé-
 “ véda*,) therefore he was *Bráhma*na. The pro-
 “ tector from ill, (*Cshate*) was *Cshatriya*; him whose
 “ profession (*Vésha*) consists in commerce, which pro-
 “ motes success in war, for the protection of himself
 “ and of mankind; and in husbandry, and attendance
 “ on cattle, called *Vaisya*. The other should volun-
 “ tarily serve the three tribes, and therefore he be-
 “ came 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*
 “ *dwipa Bráhmanas* become known in *Jambu dwipa*.

“ In *Jambu dwipa Bráhmanas* are reckoned ten-
 “ fold; *Sáreswata*, *Cányacubja*, *Gauda*, *Maithila*,
 “ *Utcala*, *Drávida*, *Maraháshtra*, *Tailanga*, *Gujjara*,
 “ and *Cásmira*, 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 Banga* and *Calinga*;
 “ some in *Camrupa* and *Odra*. Others are inhabitants

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“ of

(1.) These several countries are *Sáreswata*, probably the region wa-
 tered by the river *Serfuty*, 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 *Canoj*; *Gaurá*, probably the wes-
 tern *Gár*, and not the *Gaur* of *Bengal*: *Mit'hila*, or *Tirabhutti*, cor-
 rupted into *Tirhut*; *Utcala*, said to be situated near the celebrated tem-
 ple of *Jagannát'ha*; *Drávida*, pronounced *Dravira*; possibly the
 country described by that name, as a maritime region south of *Carnata*,
 (*Asi. Res.* vol. ii. p. 117.) *Maraháshtra*, or *Marhátta*; *Telinga*, or
Telingána; *Gujjara*, or *Guzrat*; *Cásmira*, or *Cáshmir*.

“ of *Sumbhadefa*: and twice-born men, brought by former Princes, have been established in *Báda Mágadha*, *Varéndra*, *Chóla*, *Swernagrâma*, *China*, *Cula*, *Saca*, 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'habhishiçta*, from a *Bráhmána* by a girl of the *Cshatriya* class: his duty is the teaching of military exercises. The same origin is ascribed in the great *D'herma-purâna* to the *Cumbhacâra*, (2,) or potter, and *Tantravâya*, (3,) or weaver: but the *Tantravâya*, according to the *Játimâlâ*, sprung from two mixed classes, begotten by a man of the *Manibandha* on a woman of the *Manicâra* 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-purâna* to the *Cansacâra*, (5,) or brazier, and to the *Sanc'hacâra*, (6,) or worker in shells. These again are stated, in the *Tantra*, as springing from the intermarriages of mixed classes; the *Cansacâra* from the *Támracûta* and the *Sanc'hacâra*; also named *Sanchadâreca*, from the *Râjaputra* and *Gândhica*: for *Râjaputras* not only denote *Cshatriyas* as sons of

(1.) *Anga* includes *Bhâgalpur*. *Benga*, or *Bengal Proper*, is a part only of the *Suba*. *Varéndra*, or tract of inundation north of the *Ganges*, is a part of the present *Zila* of *Rajeshâhi*. *Calinga* is watered by the *Godâveri*, (*Asi. Res.* vol. iii. p. 48.) *Comrupal*, an ancient empire, is become a province of *Asâm*. *Odra* I understand to be *Orisa Proper*. *Rada* (if that be the true reading) is well known as the country west of the *Bhâgirat'ha*. *Mágadha*, or *Magadha*, is *Bahar Proper*; *Chóla* is part of *Birbhum*. Another region of this name is mentioned in the *Asiatick Researches*, vol. iii. p. 48. *Swernagrâma*, vulgarly *Sunargau*, is situated east of *Dacca*. *China* is a portion of the present *Chinese empire*. On the rest I can offer no conjecture. *Saca* and *Berbera*, here mentioned, must differ from the *Dwipa*, and the region situated between the *Cusha* and *Sancha Dwypas*. (2.) Vulgarly, *Cumâr*. (3.) Vulgarly, *Tanti*. (4.) Vulgarly, *Baidya*. (5.) Vulgarly, *Câserâ*. (6.) Vulgarly, *Sac'hêra*.

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

Rudra-Yámala Tantra: “The origin of *Rájaputras* is from the *Vaisya* on the daughter of an *Am-basht’ha*. Again, thousands of others sprung from “the foreheads of cows kept to supply oblations.”

3. -*Nisháda*, or *Párasava*, whose profession is catching fish, was born of a *Súdra* woman by a man of a sacerdotal class. The name is given to the issue of a legal marriage between a *Bráhmāna* and a woman of the *Súdra* 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 *D’herma-purána*, from the same origin as the *Nisháda* springs the *Varajívi*, or astrologer. In the *Tantra*, that origin is given to the *Bráhme-súdra*, whose profession is to make chairs or stools used on some religious occasions. Under the name of *Varajívi* (1) is described a class springing from the *Gópa* and *Tantraváya*, and employed in cultivating beetle. The profession of astrology, or, at least, that of making almanacks, is assigned, in the *Tantra*, to degraded *Bráhmanas*.

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

4. *Máhiśhya*

(1) Vulgarly, *Baraiya*.

4. *Máhiśhya* is the son of a *Āśhatriya* by a woman of the *Vaiśya* tribe. His profession is music, 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 *Nápita* (1) or barber; and to the *Maudaca*, or confectioner. In the *Tantra*, the *Nápita* is said to be born of a *Cuverina* woman by a man of the *Patticára* class.

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

One, named *Bhútidatta*, was noticed for his domestic assiduity, (4;) therefore the rank of *Cáyast'ha* was by *Bráhmanas* assigned to him. From him sprung three sons, *Chetrángada*, *Chitraféna*, and *Chitrágupta*: they were employed in attendance on princes.

The *D'herma-purána* assigns the same origin to the *Tambulí*, or beetle-seller, and to the *Tanlica*, or areca-seller; as to the *Carana*.

The

(1) Vulgarly, *Nái*, or *Nayí*. (2) Vulgarly, *Caran*. (3) Vulgarly, *Cáit*. (4) Literally, *Staying at home*, (*Cáey sansthitah*;) whence the etymology of *Cáyast'ha*.

The six before enumerated are begotten in the direct order of the classes. Six are begotten in the inverse order.

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

8. *Mágadha*, 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 encomiast. From parents of those classes sprung the *Gópa* (2) if the *Purána* may be believed; but the *Tantra* describes the *Gópa* as a true *Súdra*, and names *Gópajivi* (3) a mixed class, using the same profession, and springing from *Tantraváya* *Manibandha* classes.

9 and 10. *Vaideha* and *Ayógava*. The occupation of the first, born of a *Bráhmèni* 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*.

All

(1) *Málè* (2) *Góp.* (3) *Góariá-Góp.*

All authorities concur in deriving the *Chándala* from a *Súdra* father and *Bráhménì* mother. His profession is carrying out corpses, and executing criminals; and officiating in other abject employments for public 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 *Abhira*, or milkman, they are not noticed by the other authorities to which I refer. But the *Purána* names other classes of this set.

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

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

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

However,

* See the annexed rule formed by our late venerable President.

However, the *Jâtimâlâ* 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 *Sûdra*, 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 *Rudrayâmala*, the domestic priests of twenty of these classes are degraded. "Avoid," says the *Tantra*, "the touch of the *Chandâla*, 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 *Molêcha*, and going to the region of *Yavana*, have been named *Yavanas*."

"These seven, the *Rajaca*, *Chermacâra*, *Nata*, *Baruda*, *Caiverta*, and *Mêdabhilla*, 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 *Nata* and *Capâla* classes, for prostitutes, and for women of the *Rajaca* and *Nâpita* tribes, a man should willingly make oblations, but by no means dally with them."

I may here remark, that, according to the *Rudrayâmala*, the *Nata* and *Natâca* 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 *Pattasutracâra*, or feeder of silk-worms, and silk-twister, deserve notice; for it has been said, that silk was the produce of *China* solely until

until the reign of the Greek Emperor JUSTINIAN, and that the laws of *China* jealously guarded the exclusive production. The frequent mention of silk in the most ancient *Sanscrit* books would not fully disprove that opinion; but the mention of an Indian class, whose occupation it is to attend silk-worms, may be admitted as proof, if the antiquity of the *Tantra* be not questioned. I am informed, that the *Tantras* collectively are noticed in very ancient 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-yāmala* is among the most authentic, and, by a natural inference, among the most ancient; since it is named in the *Durgamehāta*, 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 *Brāhmana*, are assisting to sacrifice, teaching the *Vēdas*, and receiving

* Thus enumerated, *Calī-Tantri*, *Mūndmālā*, *Tārā*, *Nirbāna-Tantra*, *Servār sārūn*, *Bīra-Tantra*, *Singār-chana*, *Bhūta-Tantra*, *Uddisān* and *Cālicācalpa*, *Bhāiravi-Tantra*, and *Bhāiravicalpa*, *Tōdala*, *Mātribhēdancha*, *Māya-Tantra*, *Birēswara*, *Biseves-āra*, *Samayā-Tantra*, *Brāhma-Yāmala-Tantra*, *Rudra-Yāmala-Tantra*, *Sanctryāmala-Tantra*, *Gāyatrī-Tantra*, *Cālicācula Servaswa*, *Culārnavā*, *Yōgini-Tantra*, and the *Tantra Mehishamarddini*. These are here universally known, Oh, BHĀIRAVI, greatest of souls! And many are the *Tantras* uttered by SAMBHU.

ceiving 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 or flocks, and servile attendance on the learned and virtuous priests.

A *Bráhmāna*, unable to subsist by his duties, may live by the duty of a soldier: if he cannot get a subsistence by either of these employments, he may apply to tillage, and attendance on cattle, or gain a competence by traffic, 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 to the *Bráhmāna* 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 of 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 *Múrdhábhishta*, *Ambashta*, and others. The mixed classes

classes are also permitted 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*na, 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*na and *Cá*yastha, because some of the appellations, by which the different races are distinguished, will be familiar to many readers.

The *Bráhma*nas of Bengal are descended from five priests, invited from *Cá*nyacubja, by A'DISURA, King of *Gaura*, who is said to have reigned about three hundred years before Christ. These were *Bhatta Neráyna*, of the family of *Sándila*, a son of *Caśyapa*; *Dacsha*, also a descendant of *Caśyapa*; *Védagarva*, of the family of *Vatsa Chandra*, of the family of *Saverna*, a son of *Caśyapa*; and *Sri Herśhu*, a descendant of *Bhavadvája*.

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 æra. One hundred of these families settled in *Varéndra*, 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 *Cá*nyacubja *Bráhma*nas.

At the period when these priests were invited by the king of *Gaura*, some *Sâreswata Brâhmanas*, and a few *Vaidicas*, resided in Bengal. Of the *Brâhmanas* of *Sâreswata* none are now found in Bengal; but five families of *Vaidicas* are extant, and are admitted to intermarry with the *Brâhmanas* of *Rârâ*.

Among the *Brâhmanas* of *Vârêndra*, eight families have pre-eminence, and eight hold the second rank.* Among those of *Rârâ*, 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 disused; and *Serman*, or *Sermâ*, the addition common to the whole tribe of *Brâhmanas*, is assumed. For this practice, the priests of Bengal are censured by the *Brâhmanas* of *Mit'hilâ*, and other countries, where that title is only used on important occasions, and in religious ceremonies.

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E

In

* VA'RI'NDRA BRA'HMANAS.

CULI'NA 8.

<i>Moitra.</i>	<i>Bhima,</i> or <i>Câli.</i>	<i>Rudra-Vâgisi.</i>	<i>Sanyamini,</i> or <i>Sandyal.</i>
<i>Lâhari.</i>	<i>Bhaduri.</i>	<i>Sadhu-Vâgisi.</i>	<i>Bhadara.</i>

The last was admitted by the election of the other seven.

SUDHA SRO'TRI' 8.

CASHTA SRO'TRI' 34.

The names of these families seldom occur in common intercourse.

† RA'RI'YA BRA'HMANAS.

CULI'NA 6.

<i>Muchuti,</i> Vulgarly <i>Muc'kerja.</i> <i>Ghoshâla.</i>	<i>Ganguti.</i>	<i>Cânjelala.</i>
	<i>Bandyagati,</i> Vulgarly, <i>Banoji.</i>	<i>Chat'ati,</i> Vulgarly, <i>Chatoji.</i>

SRO'TRI' 50.

The names of these families seldom occur in common intercourse.

In *Mit'hilá* the additions are fewer, though distinct families are more numerous: no more than three surnames are in use in that district, *T'hácura*, *Misra*, and *Ojhá*; each appropriated in any families.

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

In *Benga* and *Decshina Rárá* three families of *Cáyast'has* have pre-eminence; eight hold the second rank.* The *Cáyast'has* of inferior rank generally assume the addition of *Dása*, 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 *Verman*; 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.

The

* CA'YAST'HAS OF DECSHINA RA'RA' and BENGAL.

CULI'NA 3.

*Ghósha.**Vasu,*
Vulg. *Bo'se.**Mitra.*

SANMAULICA 8.

Dé,
*Séna.**Datta.* *Cara.* *Palitá.*
Sinha. *Dása.* *Guha.*

MAULICA 72.

*Guhan.**Gana.* *Heda.* *Huhin.* *Naga.* *Bhadre.*
Sóma. *Pui.* *Rudra.* *Pála.* *Aditya.* *Chandra.*
Sánya, or Sain.
Syámá, &c.
Téja, &c.
Cháci, &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; nor 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 *Cáyasthas*, 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 *Gal'tacas*, or genealogists, whose compositions are in the provincial dialect, and are known by the name of *Culají*.

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 good *CRISHNA* is the most conspicuous, with *ARJOON*, his favourite, 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 *sengam*, or lion; but by no means a likeness of that animal, wanting the peculiar characteristick,

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 gigantic figure of the god, with the *gopis*, and several good representations of nature, are observed. The columns supporting the roof are of different orders, the base of one is the figure of a *Sphynx*. On the pavement is an inscription. (See Inscript.) 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 strewn with fragments of bricks, the remains, as you are informed, of a palace anciently standing on this site. A rectangular polished

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 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 PARVATI' 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 gigantic figure, with a buffalo's head and human body. Between these is a human figure, suspended with the head downwards. The goddess is represented with several warlike weapons, and some armed dwarf attendants; while the monster is armed with a club. In the character of DURGA, or protector of the virtuous, the goddess is rescuing from the YEM Rajah (the figure with the buffalo's head) the suspended figure, fallen improperly into his hands. The figure and action of the goddess are executed in a masterly and spirited style. Over this temple, at a

confideable 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 out on the ground, and represented as secured in that position. This the *Bráhmens* tell you was 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 *Bráhmen*, about fifty years of age, a native of the place, whom I have had an opportunity

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 SIVA, and washed by the sea; this is no longer visible; but as the *Bráhmens* 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 southermost 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 *Puránas* 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 houses, 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 envelope 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 exceptions to the pagodas of brick at the village, and that of stone near the sea, both mentioned in the *Puránas*, 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

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.

ಶ್ರೀ ದೇವತೆಯೆ

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.

ಶ್ರೀ ದೇವತೆಯೆ

Above a Male Figure with four Arms.

Northern Face.

ಶ್ರೀ ದೇವತೆಯೆ

Above a Male Figure with Four Arms; a Battle-axe in one of the Hands.

Southern

Northern Face.

ಶ್ರೀಗಣ್ಧೀಃ ಪರಗಾ ರಿಪಾ ಪಃ
ಹಿಹಿ

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 Bráhmens' String of the present Day.

ಶ್ರೀಗ ಪಿಠಃ ಶ್ರವಣಾಃ ಶ್ರೀಪಃ
ಪಾಪು ಉಪಾ ರಾ ಸಾ

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*.

ಶ್ರೀಗಣ್ಧೀಃ ಪುಷ್ಪಾಪಃ
ಪಾಪು ಉಪಾಃ

Above two Figures, Male and Female. The former has four Arms, and the String.

ॐ ॐ I
 ॐ ॐ I

Above a Male Figure, with four Arms.

West Front.

ॐ ॐ ॐ ॐ ॐ
 ॐ ॐ ॐ ॐ ॐ

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.

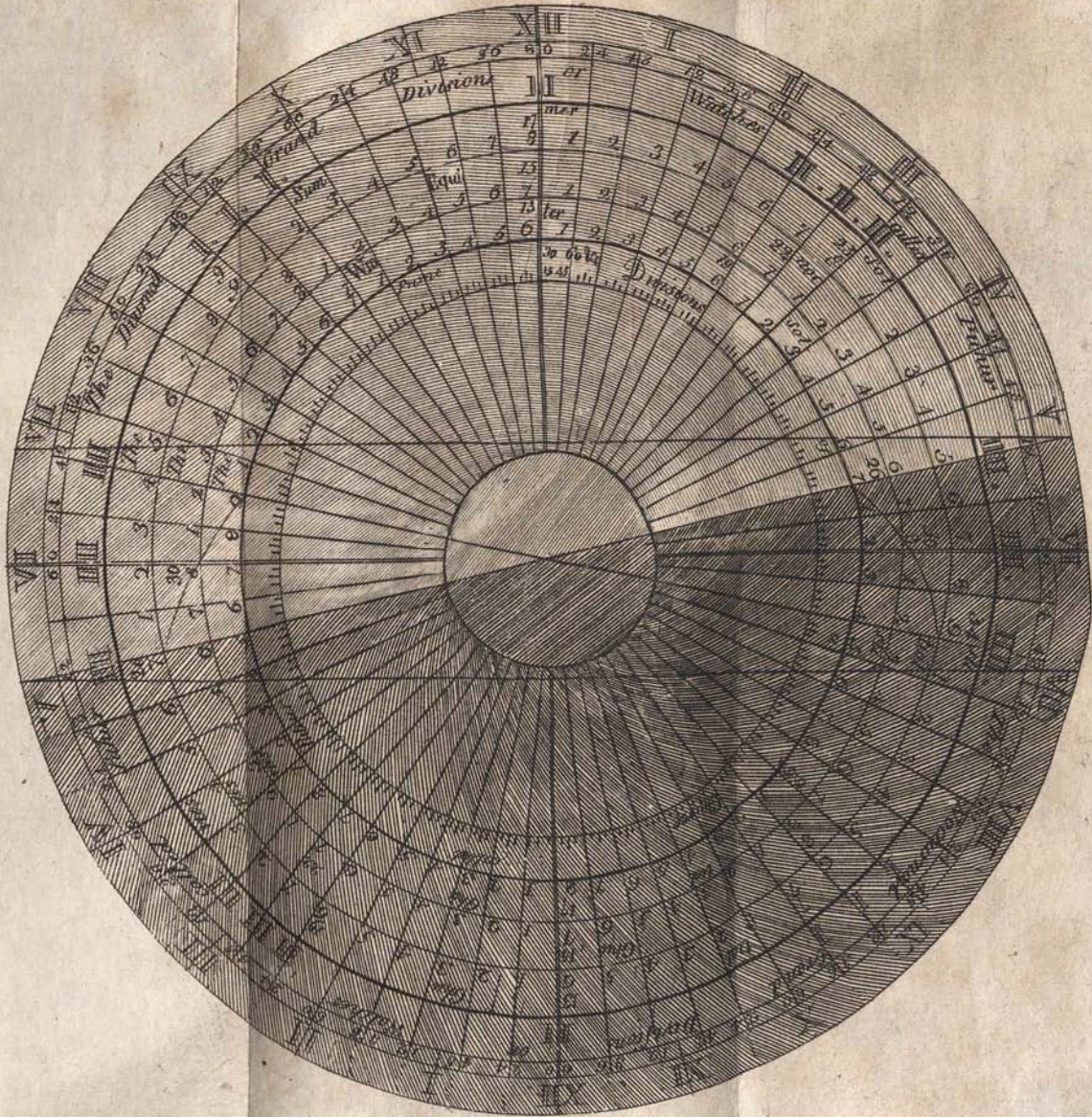
On the upper Division.

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 Shoulder.

Over

The Hindoostanee Horal Diagram



V.

Account of the Hindustanee Horometry.

By JOHN GILCHRIST, Esq.

THE inhabitants of *Hindustan* commonly reckon and divide time in the following manner; which exhibits a horography so imperfect, however, that its inaccuracy can only be equalled by the peoples' 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*.

60 *Bipul* (which corresponds progressively only with our *seconds* or moments) one *pul*.

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60 *Pul*

* 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 *Furhung Kardanee* contains, relative to these horal divisions, as follows.

4 *Renoo* constitute 1 *puluk*; 16 *pulaks*, 1 *kast.ha*; 30 *kast.has*, 1 *kula*; 30 *kulas*, 1 *guhun*; 60 *guhuns*, 1 *dund*; 2 *dunds*, 1 *g.huree*; 30 *dunds*, 1 *din*; 60 *dunds*, 1 *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 *lumhu*, &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.ha* is equal to 4 *tils*, the *kula*, or two *bipuls*; the *guhun* and *pul* are the same; so are the *dund* and (*kuchee*) *g.huree*; but the learner must advert to the *g.huree* in this note, being *pukkee*, or two of the former; as this distinction is frequently used when they allot only four *g.hurees* to the *pukur*; and *pukkee*, or *double*, is always understood.

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

During the equinoctial months, there are just 30 *g,hurees* in the day, and 30 also in the night; each *g,huree* properly occupying a space, at all times, exactly equal to 24 of our minutes; because 60 *g,hurees*, 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 sun-set, it becomes necessary to make the *puhurs* 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,hurees* into these grand diurnal and nocturnal divisions alternately, and according to the sun's progress to or from the tropicks. The summer solstitial day will, therefore, consist of 34 *g,hurees*, and the night

* *Lumhu* 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 mid-day, regularly on through the night; also up to 24 o'clock the next noon, as formerly was the case, and which is still observed in some places on the continent; or, like ours, from 1 after noon 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*.

night of 26 only, or *vice versa*: but, what is most singular in the *Indian* horometry, their *g,hurees* 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 *puhur* nearly corresponds to 3 *English* hours. I say *nearly*, because even then the four middle watches have only 7 *g,hurees*, or 2 hours 48 minutes of ours; while the extremes have 8 *g,hurees* a-piece, or 24 *English* minutes more than the others, and consequently agree with our 3 hours 12 minutes; while at other times the *puhur* is equal to no less than 3 hours 36 minutes; a fact which I believe has never yet been stated properly; though many writers have already given their sentiments to the public on the subject before us: but they were probably misled by saying 4-3s are 12 hours for the day, and the same for the night. Without considering the sexagesimal division, we must first make of the whole 24 hours, or 8 watches, 4 of which, during both equinoxes, having 7 *g,hurees* only, give 28: and the other 4 extreme watches, consisting at these periods also of 8 *g,hurees* each, form 32—60 in all; not 64 *g,hurees*,* as some calculators have made it, who were not aware that the *g,huree*, or *dund*, never can be more nor less than 24 of our minutes, as I have proved above,

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by

* 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 choun sut *g,huree*, 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 there being 8 *g,hurees* in each of the eight *puhur*, 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 *puhur*, of three hours each, are twelve of course; and eight 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, 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 endeavoured 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 part of the Benares Zemindary, 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 equi-distant interfections 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 *puhurs*, from I. to IV. by Roman letters also, with the *chime* (gujur) or number of bells struck at *each* in large figures, below the *puhur* 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

their situations 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,hurees*, 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. *puhur*, 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 shews the *g,hurees*, when the day is longest, running with the sun to the top, and from this to VI. P. M. for the 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,hurees*, and on the same principles exactly. Within these come the winter solstitial *g,hurees*, 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,hurees* in any *puhur*, to trace the *latter*, and its chime, or number of bells, out by the *g,huree* 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,huree* and *gujur* of the night; thence go round in succession upwards with the day *g,hurees* 1. 2. 3. 4. 5. 6. 7. the chord of which last terminates 36 minutes after IX. and has 7 upon it for 7 bells, and 1 for *ek puhur 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,huree*, viz. 60, so—15, 30, 45, 60, in two spaces only, because these are the invariable constituent minute parts of the *g,huree* 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 crouded 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,huree* until the 60 *puls* of which it consists are accumulated, but, with their usual apathy, continue to distribute and reduce the constant increasing and decreasing temporal fractions among or from the several *puhurs* 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,huree* 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,huree* may be reduced to a mere shadow, that the *G,huree,alee* may find the exact number, without regarding its disproportion to the

the rest in the same *puhur* at all. So much this and similar freedoms have been and can be taken with time in Hindustan, that we may frequently hear the following story: While the fast of *Rumuzan* lasts, it is not lawful for the *Mussulmans* to eat or drink in the day; though at night they not only do both, but can uninterruptedly enjoy its other pleasures also; and upon such an occasion, a certain *Omra* sent to enquire of his *G,huree,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,huree, myn luga rukke*. "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,huree-al*, and suspended so as to be easily struck with a wooden mallet by the *G,huree,alee*, who thus strikes the *g,hurees*, 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,huree*, 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 fourths of a *g,huree*) the Asiatics in general, who, by the bye, are often wonderfully uninformed 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 a 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,huree* of the *first puhur* is so far sacred to the Emperor of Hindustan, that his *G,huree,alee* alone strikes *one* for it. The second *g,huree* is known by two blows on the *G,huree,al*, and so on: one stroke is added for every *g,huree* to the highest, which (assuming the equinoctial periods for this statement) is eight, announced by eight distinct blows for the past *g,hurees*; 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 puhur din* or *rat*, as this may happen, and for which consult the plate. In one *g,huree*, or 24 of our minutes, after this, the same reiteration takes place; but here stops, at the seventh or meridional *g,huree*, 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 puhur*, now proclaimed by two full distinct sounds. We next proceed with 7 more *g,hurees*, exactly noting them as before, and ringing the *gujur* of 22 strokes, after the seventh *g,huree*, or *teen puhur*, also known by three loud sounds. The fourth *puhur* has, like the first, 8 *g,hurees*, and differs in no other respect than having a *gujur* of 30 after the equatorial *g,huree* has been struck, the whole being closed by four loud blows on the *g,huree,al* for *char puhur 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 *puhur* alone is more commonly

commonly used for the middle *chimes* than *gujur* appears to be. Six or eight people are required to attend the establishment of a *g,huree*; 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 public (*g,hurees*) 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 enquiries, 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'PA'LA BHATTA', on *Numbers and Quantities*, which is intitled *Sanc'hyaparimāna*.

MENU, YA'JNYAWALEYA, and NA'REDA, 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 sun-beam passing through "a lattice." Writers on medicine proceed a step further, and affirm, that a *trasarēnu* contains thirty *paramānu*, or atoms: they describe the *trasarēnu* in words of the same import with the definitions 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.

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The legislators above named proceed from the *tra-sarénu* as follows:

8 <i>tra-sarénus</i>	= 1 <i>licsha</i> , or minute poppy seed.
3 <i>licshas</i>	= 1 <i>râja shershapa</i> , or black mustard seed.
3 <i>râja shershapas</i>	= 1 <i>gaura shershapa</i> , or white mustard seed.
6 <i>gaura shershapas</i>	= 1 <i>yava</i> , or middle sized barley-corn.
3 <i>yavas</i>	= 1 <i>crîshnala</i> , or seed of the <i>gunjà</i> .

This weight is the lowest denomination in general use, and commonly known by the name of *retti*, corrupted from *retticà*,* which, as well as *raeticà*, denotes the red seed, as *crîshnala* indicates the black seed of the *gunjà* creeper. Each *retti* used by jewellers is equal to $\frac{7}{8}$ ths of a carat. The seeds themselves have been ascertained by Sir WILLIAM JONES, from the average of numerous trials, at $1\frac{3}{8}$ grain. But fictitious *rettis*, in common use, should be double of the *gunjà* seed; however, they weigh less than two grains and a quarter. For the *ficca* weight contains $179\frac{2}{3}$ grains nearly; the *mâsha*, $17\frac{3}{8}$ nearly; the *retti*, $2\frac{3}{8}$ nearly. Writers on medicine trace this weight from the smallest sensible quantity in another order.

30 <i>paramânus</i> , or atoms	= 1 <i>tra-sarénu</i> , or <i>vansî</i> .
86 <i>vansî</i>	= 1 <i>marîchi</i> , or sensible quantity of light.
6 <i>marîchîs</i>	= 1 <i>râgicà</i> , or black mustard seed.
3 <i>râgicàs</i>	= 1 <i>shershapa</i> , or white mustard seed.
8 <i>shershapas</i>	= 1 <i>yava</i> , or barley-corn.
4 <i>yavas</i>	= 1 <i>gunjà</i> , or <i>raeticà</i> .

* Asiatick Researches, vol. ii. page 154.

A *raeticà* is also said to be equal in weight to four grains of rice in the husk: and GO'PA'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>chriśhnalas</i> , or <i>raeticàs</i>	= 1 <i>mâsha</i> , <i>mâshaca</i> , or <i>mâshica</i> .
16 <i>mâshas</i>	= 1 <i>carsha</i> , <i>acsha</i> , <i>tôlaca</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>mâshaca</i> of silver.
16 <i>mâshacas</i>	= 1 <i>dharana</i> of silver, or <i>purâna</i> .
10 <i>dharanas</i> of silver	= 1 <i>satamâna</i> or <i>pala</i> of silver.

But a *carsha*, or eighty *raeticàs* of copper, is called a *pana*, or *carshâpana*.

Commentators differ on the application of the several terms. Some consider *chriśhnala* 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 has also a name. A *pana*, or *carshâpana*, is a measure of silver as well as of copper.

per. 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 *cárohápána*; and VRIHASPATI describes it as the twentieth part of the *pala*. Hence we have no less than four *máshas*: one *másha* of five *raëticàs*; another of four *raëticàs*, (according to NA'REDA;) a third of sixteen *raëticàs*, (according to VRIHASPATI;) and a fourth (the *máshaca* of silver) consisting of two *raëticàs*; not to notice the *máshaca* used by the medical tribe, and consisting of ten, or, according to some authorities, of twelve, *raëticàs*, which may be the same as the jeweller's *másha* of six double *rettis*. To these I do not add the *másha* of eight *raëticàs*, 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 no where 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 one hundred and fifty *suvernas*. Other large denominations are noticed in dictionaries.

108 *suvernas*, or *tólacas*, of gold, constitute an *urubhúshana*, *pala*, or *dínára*.

100 *palas*, or *nishcas*, make one *tulá*; 20 *tulás*, or 2000 *palas*, one *bhára*; and 10 *bhára*, one *áchita*.

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

According to DÁNAYO'GÍSWARA, the tenth of a *bhára* is called *ad'hára*, which is consequently synonymous with *hára*, 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 *mâsha* to a very low denomination, and I suppose it to be the jeweller's weight.

6 <i>râjicâs</i> (<i>raëticâs</i>)	= 1 <i>mâshaca</i> , <i>héma</i> , or <i>vânaca</i> .
4 <i>vânacas</i>	= 1 <i>sala</i> , <i>dharana</i> , or <i>tanca</i> .
2 <i>tancas</i>	= 1 <i>côna</i> .
2 <i>cônas</i>	= 1 <i>carsha</i> .

Probably it should be *raëticâs* instead of *râjicâs*, which would nearly correspond with the weights subjoined, giving twenty-four *retticâs* for one *dharana* in both statements. It also corresponds with the tables in the *Ayén Acberî*, (vol. iii. p. 94.) where a *tânc* of twenty-four *rettis*, fixed at ten barley-corns to the *retti*, contains two hundred and forty barley-corns; and a *mâsha* of eight *rettis*, at seven and a half barley-corns each, contains sixty *rettis*; consequently four *mâshas* 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 BHATT'A) observes, that weights are thus stated in astronomical books:

2 large barley-corns	= 1 seed of the <i>gunjà</i> .
3 <i>gunjâs</i>	= 1 <i>balla</i> .
8 <i>ballas</i>	= 1 <i>dharana</i> .
2 <i>dharanas</i>	= 1 <i>alaca</i> .
1000 <i>alacas</i>	= 1 <i>dhatâca</i> .

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

20 <i>capardacas</i> , shells, or cowries	= 1 <i>câcîni</i> .
4 <i>câcîni</i>	= 1 <i>pana</i> , <i>cârshâpana</i> , or <i>carshica</i> .
16 <i>para</i> (= 1 <i>purâna</i> of shells)	= 1 <i>bherma</i> of silver.
16 <i>bhermas</i>	= 1 <i>nishca</i> of silver.

It may be inferred that one shell is valued at one *raïcîcà* of copper; one *pana* of shells at one *pana* of copper; and sixty-four *panas*, at one *tôlaca* 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 BHA'SCARA*.

On the measures of grain GO'PA'LA BHATT'A quotes the authority of several *purânas*.

<i>Varâha purâna</i> :	1 <i>mushti</i> , or handful	= 1 <i>pala</i> .
	2 <i>palas</i>	= 1 <i>prasrîti</i> .
	8 <i>mustis</i>	= 1 <i>cunchi</i> .
	8 <i>cunchis</i>	= 1 <i>pushc'ala</i> .
	4 <i>pushc'alas</i>	= 1 <i>âd'haca</i> .
	4 <i>âd'hacas</i>	= 1 <i>drôna</i> .
<i>Bhawishy purâna</i> :	2 <i>palas</i>	= 1 <i>prasrîti</i> .
	2 <i>prasrîtis</i>	= 1 <i>cuḍava</i> .
	4 <i>cuḍavas</i>	= 1 <i>prastha</i> .
	4 <i>prasthas</i>	= 1 <i>âd'haca</i> .
	4 <i>âd'hacas</i>	= 1 <i>drôna</i> .
	2 <i>drônas</i>	= 1 <i>cumb'ha</i> , or <i>sûrpa</i> .
	6 <i>drônas</i>	= 1 <i>c'hârî</i> , or <i>shârî</i> .

* The comparative value of silver and copper was the same in the reign of ACBER; for the *dâm*, weighing five *tancs*, or twenty *mâshas* of copper, was valued at the fortieth part of the *Jelâli rupiya*, weighing twelve *mâshas* 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 *praśt'ha*.
 4 *praśt'has* = 1 *àd'haca*.
 4 *àd'hacas* = 1 *dróna*.
 16 *drónas* = 1 *c'hári*.
 20 *drónas* = 1 *cumb'ha*.
 10 *cumb'has* = 1 *báha*, or load.

Scanda purána: 2 *palas* = 1 *praśrīti*.
 2 *praśrītis* = 1 *cudava*.
 4 *cudavas* = 1 *praśt'ha*.
 4 *praśt'has* = 1 *àd'haca*.
 4 *àd'hacas* = 1 *dróna*.
 2 *drónas* = 1 *cumb'ha* accord-
 ing to some.
 20 *drónas* = 1 *cumb'ha* accord-
 ing to others.

From these may be formed two Tables. The first coincides with texts of the *Varáha purána*, and is preferred by RAGHUNANDANA. The second, formed on the concurrent authority of the *Bhawishya*, *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 *tólacas* and a half.

TABLE I.

8 *muśhtis*, or handfuls, = 8 *palas* = 4 *praśrītis* =
 1 *cunchi*.
 8 *cunchis* = 1 *puśhcala*.
 4 *puśhcalas* = 1 *àd'haca*.
 4 *àd'hacas* = 1 *dróna*.
 20 *drónas* = 1 *cumb'ha*.

TABLE II.

4 <i>pahas</i> = 2 <i>prasritis</i> = 1 <i>cudava</i> or <i>setticá</i> .	14 <i>tólas</i> .
4 <i>cudavas</i> = 1 <i>prast'ha</i>	56 —
4 <i>prast'has</i> = 1 <i>ád'haca</i>	224 —
4 <i>ád'hacas</i> = 1 <i>dróna</i>	896 —
20 <i>drónas</i> = 1½ <i>c'háris</i> = 1 <i>cumb'ha</i>	17,920 —
10 <i>cumb'has</i> = 1 <i>báha</i> .	179,200 —

But some make two *drónas* equal to one *cumb'ha*.

Would it be unreasonable to derive the English coomb of four bushels from the *cumb'ha* of the *Hindus*? The *c'háris*, subsequently described, contains 5832 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'háris* and a quarter, will contain three bushels and three gallons nearly. According to LACSHMI'DHERA'S valuation of the *pala*, at three *tólas* and a half, the *c'háris* weighs 14,336 *tólas*, or 215lb. avoirdupois nearly; and the *cumb'ha* 17,920 *tólas*, or 268lb. which corresponds nearly to the weight of a coomb of good wheat; and a *báha* will be nearly equal to a wey, or a ton in freight.

The name of *setticá* for the fourth of a *prast'ha* is assumed from the *Varáha purána*; and HEMA'DRI accordingly declares it synonymous with *cudava*. The *Calpateru*, *Smritisara*, *Retnácara*, and *Samayapradipa*, also make the *setticá* equal to the *cudava*, or a quarter of the *prast'ha*; but it contains twelve *prasriti* according to these commentaries; and the *prasriti* is described in the *Dánacánda*, by LACSHMI'DHERA, author of the *Calpateru*, as the quantity held in both hands by a man

of

of the common size. Twelve such handfuls fill a *cu-dava*, 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 *cu-dava* of twelve *prast'itis*, whence we have a third Table of legal Measures in general use.

TABLE III.

12 double handfuls	==	1 <i>cu-dava</i> .
4 <i>cu-davas</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 JA'TU'CARNA, 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 *A'harva véda*, thirty-two *palas* of gold. This again seems to be the *prast'ha* of MAGAD'HA, described by GO'PATHA BRAHMANA.

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 MAGAD'HA.

Since the *pala* of gold weighs 420 troy grains, the *prast'ha* contains one pound avoirdupois, fourteen ounces and three quarters nearly. The *dróna*, last mentioned, contains 30 lb. 11 oz. and a fraction; and a *cumb'ha* of twenty such *drónas*, 614 lb. 6 oz. and a half nearly.

The measures of grain in common use, are probably derived from the ancient *cumb'ha* and *dróna*; but their names are not suggested by any of the preceding Tables. Twenty *cát'hás* make one *bísí*; and sixteen *bísís* one *pautí*. The size of the *cát'há* varies in different districts; in some containing no more than two and a half *fér* of rice; in others five *fér*, (80 sicca weight;) or even more. In the southern districts of Bengal, a measure of grain is used which contains one *fér* and a quarter. It is called *rec*. Four *recs* make one *páli*; twenty *pális*, one *foli*; and sixteen *folis*, one *cáhen*.

The *Vrihat Rájamartanda* specifies measures which do not appear to have been noticed in other *Sanscrit* writings.

$$\begin{aligned} 24 \text{ tólacas} &= 1 \text{ fér.} \\ 2 \text{ fér} &= 1 \text{ prabh.} \end{aligned}$$

It is mentioned in the *Ayén Ackberí*, that the *fér* formerly contained eighteen *dáms* in some parts of *Hindustan*, and twenty-two *dáms* in others; but that it consisted of twenty-eight *dáms* at the commencement of the reign of ACBER, and was fixed by him at thirty *dáms*. The *dám* was fixed at five *táncs*, or twenty *máshas*; or, as stated in one place, twenty *máshas*; and seven *rettis*. The ancient *fér*, noticed in the *Ayén Ackberí*, therefore, coincided nearly with the *fér* stated in the *Rájamartanda*. The double *fér* is still used in some places, but called by the same name (*panchaféri*) as the weight of five *fér* used in others.

For measures used in *Mit'hila*, and some other countries, we have the authority of CHANDE'SUARA, in the *Bála bhúshana*. They differ from the second table, interposing a *mánica* equal to a fourth of a *c'hári*, and making the *báha* equal to twenty *c'háris*.

4 <i>palas</i>	=	1 <i>cudava</i> .
4 <i>cudavas</i>	=	1 <i>prast'ha</i> .
4 <i>prast'has</i>	=	1 <i>ád'haca</i> .
4 <i>ád'hacas</i>	=	1 <i>dróna</i> .
4 <i>drónas</i>	=	1 <i>mánica</i> .
4 <i>mánicas</i>	=	1 <i>c'hári</i> .
20 <i>c'háris</i>	=	1 <i>báha</i> .

GOPA'LA BHATTA' states another set of measures, without furnishing a comparison to any determinate quantity otherwise known.

4 <i>áyus</i>	=	1 <i>śácsha</i> .
4 <i>śácshas</i>	=	1 <i>bilwa</i> .
4 <i>bilwas</i>	=	1 <i>cudava</i> .
4 <i>cudavas</i>	=	1 <i>prast'ha</i> .
4 <i>prast'has</i>	=	1 <i>c'hári</i> .
4 <i>c'háris</i>	=	1 <i>góni</i> .
4 <i>gónis</i>	=	1 <i>drónicá</i> .

I have already quoted a comparison of the *cudava* to a practical measure of length; and we learn from the *Lílávati*, that the *c'hári*, or *c'hárica*, 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'hárica*: 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'hârîca* of *UTCALA* is in general use on the south of the river *Gódâveri*: there the *dróna* is the sixteenth part of a *c'hârî*; (as in the Second Table;) the *âd'haca* the fourth of a *dróna*; the *prast'ha*, the fourth of an *âd'haca*; and the *cudava*, a quarter of a *prast'ha*. But the *cudava*, formed like a *ghanahasta*, should be measured by three fingers and a half in every dimension. This vessel must be made of earth, or similar materials; for such alone is a *cudava*.”

Both by this statement, and by the Second Table, a *c'hârî* 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 *cudava* thirteen and a half cubick *angulas*. Its solid contents, therefore, are the half of a cube whose side is three fingers. A slight change in the reading would make the description quoted from the *Lîlâvati* coincide with this computation; and the *c'hârîca* of *UTCALA* and *MAGAD'HA* would be the same.

However, *LACSHMI'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 *âd'haca* 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 *marcal* of 3384 cubick inches, or nearly double the *dróna* of 1728 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'hârîca* 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 *Vridha MENU*, which traces these from the same minute quantity as weights.

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

From this *MENU* proceeds to longer measures.

- 12 *angulas*, or fingers, = 1 *vitesti*, or span.
 2 *vitestis*, or spans, = 1 *hesta*, or cubit.

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

- 8 *paramánus*, or atoms, = 1 *para sushma*, most minute substance.
 8 *para sushmas* = 1 *trasarénu*.
 8 *trasarénus* = 1 *mehirajaés*, grain of sand or dust.
 8 grains of sand = 1 *bálágra*, or hair's point.
 8 *bálágras* = 1 *licsha*.
 8 *licshas* = 1 *yúca*.
 8 *yúcas* = *yava*.
 8 *yavas* = 1 *angula*, or finger.
 6 fingers = 1 *pada*, or breadth of the foot.
 2 *padas* = *vitesti*, or span.
 2 spans = 1 cubit (*hesta*)
 2 cubits = the circumference of the human body.
 4 cubits = 1 *dhanush*, *denda*, or staff.
 2 *dendas* = 1 *naricá* (or *nàdi*)

In another place the same *purána* notices two measures, one of which is often mentioned in rituals:

- 21 breadth 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 purána*, that, according to *VYA'SA*, it should be measured by the breadth of the thumb at the tip. The same *purána* makes two *retnis* (or 42 thumbs) equal to one *cishu*: but *HA'RITA* compares the *cishu* to the cubit, four of which it contains, according to his statement: and four *cishus* make one *nalwa*. Here again the *ADITYA purána* differs, making the *nalwa* to contain thirty *dhanush*. It concurs with authorities above cited, in the measures of the cubits *denda* and *nádi*; the first containing twenty-four fingers; the second ninety-six fingers; and the *nádi* two *dendas*.

The same *purána* notices the larger measures of distance.

2000 <i>dhanush</i>	=	=	1 <i>crósa</i> .
2 <i>crósas</i>	=	=	<i>gavyuti</i> .
8000 <i>dhanush</i>	=	<i>gavyutis</i>	= 1 <i>yójana</i> .

On one reading of the *VISHNU purána*, the *crósa* contains only one thousand *dhanush*. Accordingly *GO'PA'LA BHATTA'* quotes a text, which acquaints us that " Travellers to foreign countries compute the "*yójana* at four thousand *dhanush*:" but he adduces another text, which states the measures of the *crósa*, *gavyuti*, and *yójana*, as they are given in the *ADITYA purána*. The *Lílávati* confirms this computation.

8 barley-corns	= 1 finger's breadth.
24 fingers	= 1 <i>hesta</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 *Lilávatì* also informs us of the measures used for arable land, which are similar to those now in use.

10 hands	= 1 <i>vansa</i> , or bamboo cane.
20 <i>vansas</i> (in length and breadth)	= 1 <i>niranga</i> of arable land.

Divisions of time are noted in the first chapter of MENU, (v. 64.)

18 <i>niméshas</i> , or the twinklings of an eye,	= 1 <i>cáshihà</i> .
30 <i>cáshihàs</i>	= 1 <i>calá</i> .
30 <i>calás</i>	= 1 <i>shana</i> .
12 <i>shanas</i>	= 1 <i>muhúrta</i> .
30 <i>muhúrtas</i>	= 1 day and night, (according to mean solar time.)

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

15 days and nights (<i>ahóráttra</i>)	= 1 <i>pacsha</i> , or interval between the sizygies.
first and last <i>pacsha</i>	= 1 month.

2 months

* 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 ACBER at 5000 *gez* = 4757 yards = 2 British miles and 5 furlongs; and the average common *crós* at one mile statute and nine tenths.

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

According to the *Sūrya Siddhānta* (see *As. Ref.* vol. ii. p. 230.)

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

The *VISHNU purāna* states a mode of subdividing the day, on which GO'PA'LA BHATTA' remarks, that "it is founded on astronomy," and subjoins another mode of subdivision.

Ten long syllables are uttered in one respiration (*prānā*.)

6 respirations	=	1 <i>vinādicā</i> .
60 <i>vinādicās</i>	=	1 <i>dhatā</i> .
60 <i>dhatās</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 *VARA'HA purāna* concurs with the *Sūrya Siddhānta* in another subdivision of time.

60 <i>cshanas</i>	= 1 <i>lava</i> .
60 <i>lavas</i>	= 1 <i>nimésha</i> .
60 <i>niméshas</i>	= 1 <i>cást'hà</i> .
60 <i>cást'hàs</i>	= 1 <i>atipala</i> .
60 <i>atipalas</i>	= 1 <i>vipala</i> .
60 <i>vipalas</i>	= 1 <i>pala</i> .
60 <i>palas</i>	= 1 <i>danda</i> .
60 <i>dandas</i>	= a night and day.
60 nights and days	= 1 <i>ritu</i> or season.

But the BHAWISHYA *purána* subdivides the *nimésha* otherwise.

1 twinkling of the eye while a man is easy and at rest	= 30 <i>tatpanas</i> , or moments.
1 <i>tatpana</i>	= 100 <i>trutis</i> .
1 <i>truti</i>	= 1000 <i>samcramas</i> .

RAGHUNANDANA, in the *Jyóti'shatatwa*, gives a rule for finding the planets which preside over hours of the day, called *hórà*. "Doubling the *ghatis* elapsed from the beginning of the day (or sun-rise at the first meridian) and dividing by five, the product shews the elapsed hours, or *hóràs*. The sixth planet, counted from that which gives name to the proposed day, rules the second hour. The sixth counted from this rules the third; and so on for the hours of the day: but every fifth planet is taken for the hours of the night." The order of the planets is ☾ ♀ ♀ ☉ ♂ ♃ ♅; consequently on a *Sunday* the regent of the several hours of the day and night are:

Day	1	2	3	4	5	6	7	8	9	10	11	12
	☉	♀	♀	☾	♃	♃	♂	☉	♀	♀	☾	♃

Night

Night	1	2	3	4	5	6	7	8	9	10	11	12
	♂	♀	☾	♃	☉	♄	♅	♁	♀	☾	♃	☉

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 *hórâ* of the subsequent day, whose regent, the fourth from ☉, is ☾; and thence proceed by the above-mentioned rule to the regents of *hórâs* for *Monday*.

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

বাবপূৰ্বে ঘটিকাছিনিগ্নাঃ কান্যথ্য হোৰাপত্যমঃ শৰাংগাঃ
 দিনেনিত্রায়া মৃতবাগকৃত্যা নিজাহনাথা প্রথমঃ শকন্ত্যাঃ ॥
 ত্বেথাপক্কা শব্বয়ো বৃগবঃ সযোদ্যা পৈবস্তা পোক।
 দেশান্তৰ যোজয়িত বিঘটীতিঃ শাদহীনাত্তিঃ ॥ ১ ॥

“ THE *ghaticâs* elapsed from the beginning of the day being doubled, and divided by (five) arrows; shew the cords of time called *hórâ*. 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 sun-rise, at the first meridian, is known from the interval of countries, or distance in longitude measured by *yójanas*, and reduced into *ghatis*, after deducting a fourth from the number of *yójanas*.”

The coincidence of name for the hour, or twenty-fourth part of the day, is certainly remarkable. But until we find the same division of time noticed by a more ancient author than RAGHUNANDANA, it must remain doubtful whether it may not have been borrowed from *Europe* in modern times.

VII.

OF THE

CITY OF PEGUE,

AND THE

TEMPLE OF SHOEMADOO PRAW.

By Captain MICHAEL SYMES.

THE limits of the ancient city *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 60 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 praws, 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, NAMDOGE 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 *Taliens* 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 public 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 *Tanghoo*, *Martaban*, and *Talowmeou*; and many live under the protection of the *Siamese*. There is little doubt, however, that the restoration of their favourite 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 centinels, and are usually asleep. There are also two other gates on the north and south sides 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. The 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 *Rahaans*, 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 of sheathing-boards, supported on bamboos or posts. Being composed of such combustible materials,

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

H 2

Golden

* These people are called *Pagwaat*. They are slaves of the government; men who have been found guilty of theft, and through mercy have had their lives spared. They are distinguished by a black circle on each cheek, caused by punctation: also by having on their breasts, in *BIRMAN* characters, the word *Thief*; and the name of the article stolen; as on one (that I asked an explanation of) *Putchoo Khoo*, or *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 *Ojiris*, or Author
of

Golden Supreme. This extraordinary edifice is built on a double terrace, one raised upon another. The lower and greater terrace is about 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 fortress 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 *Rahaans*, 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 *Rahaans* sleep. We saw no furniture.

SHOEMADOO is a pyramid, composed of brick and plaister, with fine shell mortar, without excavation or aperture.

of Time. They likewise conferred it on their kings and priests. In the first book of MOSES, chap. xli. PHARAOH gives "JOSEPH to wife the daughter of *Potiphera*, or the Priest of ON." In the book of Jeremiah, a king of Egypt is styled, "PHARAOH OPHRA." And it is not a very improbable conjecture, that the title PHARAOH, given to successive kings of *Egypt*, is a corruption of the word *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.

aperture of any fort; octagonal at the base, and spiral at top. Each side of the base measures 162 feet. This immense breadth diminishes abruptly; and a similar building has not unaptly been compared in shape to a large speaking trumpet*.

Six feet from the ground there is a wide ledge, which surrounds the base of the building; on the plane of which are fifty-seven small spires, of equal size, and equidistant. One of them measured twenty-seven feet in height, and forty in circumference at the bottom. On a higher ledge there is another row, consisting of fifty-three spires, of similar shape and measurement. A great variety of mouldings encircles the building; and ornaments, somewhat resembling the fleur de lys, surround what may be called the base of the spire. Circular mouldings likewise gird this part to a considerable height; above which there are ornaments in stucco, not unlike the leaves of a *Corinthian* capital; and the whole is crowned by a *tee*, or umbrella of open iron-work, from which rises an iron rod with a gilded penant.

The *tee*, or umbrella, is to be seen on every sacred building in repair, that is of a spiral 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 *Ummerapoor* to be present at the ceremony of putting it on.

The circumference of the *tee* is fifty-six feet. It rests on an iron axis, fixed in the building, and is

H 3

further

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

further secured by large chains, strongly rivetted 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 pyramidal pagoda, sixty-seven feet in height, resembling, in miniature, the great pagoda. In front of the one in
the

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 approach 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 the 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 *Rahaans*, 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 these 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 *Rahaans* alone, and are considered as emblematic of purity and their sacred function. On the top of the staff there is commonly the figure of a *henza*, or goose, the symbol both of the *Birman* and *Pegue* nations.

From

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

From the upper ledge that furrounds 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, checquered by a wild intermixture of wood and water.

Previous to my departure from Pegue, I paid a visit to the *Siredaw*, or superior *Rahaan*, 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 *Rahaans* 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 *Rahaans*, 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

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
Burmese, 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 *Amerapoora*, 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 greatest 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

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 in 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 those 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.

Charaeter Essentialis. Cal. 1 phyll. petala 5, receptaculo inserta, stam. 10, receptaculo inserta. Nect. maximum, orbiculatum, 10 fulcum, 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

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

FULCRA, petiolus 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, albidi, plurimi, pedicellari, sparsi. Racemi fructiferi penduli, foliis multo longiores. Fructus rubri, acescenti-dulces.

CAL. perianthum proprium monophyllum, concavum, corollâ brevius, quinquefidum: laciniis obtusis. Laciniæ 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, obtusocarinata, 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 *chitraca* 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 Lieutenant 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

The Head	Cook.	The Eyelash	Cunmeer.
Eyebrow	Conmudbâ.	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.		
The Breast	Bookah.	Heel	Teeknâ.
Belly	Coochah.	Flesh	Mâäk.
Loins	Cudmah.	A Fever	Meed.
Back	Cookah.	Headake	Cooknogee.
A Vein	Nâroo.	Cholick	Coochoohoogee.
Toe	Cuddah Angillee.	A Tiger	Toot.
Hair	Tullee.	Dog	Alah.
An Eye	Cun.	Ant	Choobah.
Ear	Kydoob.	Kite	Chunneeâdee.
The Counte- nance }	Trefoo.	Paroquet	Apud.
Beard	Pâchoodee.	Fly	Teelcur.
Throat	Tood.	Bee	Ook.
Shoulder	Dupna.	Heaver	Surruncuffâ.
A Nail (of Finger) }	Ooruk.	A Star	Badekah.
A Lip	Boocotooda.	Cloud	Badelee.
Navel	Cood.	Cow	Ooe.
Buttock	Moodoocudmullâ.	Jackal	Cheecâloo.
Liver	Cuckâlee.	Cat	Beerkah.
The Foot	Chupta.	Cock	Noogeer.
A Bone	Coochul.	Crow	Câcah.
Forehead	Neepee.	Dove	Poorah.
		Pigeon	Cooterah.

A Scorpion	Teelah.	Oil	Heefcun.
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	Aydeeootee.
An Arrow	Châr.	<i>Hindustan</i>	<i>Color.</i>
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	Putteâ.	To tear	Afeehee.
Cloth	Durjâ.	To squeeze,	} Ayrcoo.
Black	Fudcooroa.	press out	
White	Cheen burroo.	To grind	Tudyecâ.
Red	Kyfoo.	To know, un-	} Booje een.
Yellow	Balcoo.	derstand	
Rice	Teekeel.	To rub	Mâleeâ.

130 OF THE PEOPLE INHABITING THE HILLS, &c.

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	Puffeearce.
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,	} Mâfee.
The World	Oorahâ.	Complaint	
A Mat	Tâlee.	A Garment, Vest	Joolee.
Before	Moodâhee.	Phyick	Bhudder.
Why	Pundreek.	A Sash	Sujar.
Me, to me	Aykee.	A Mill	Mookah.

committed them to the Ganges, as is usually observed in respect to these flowers; a term by which the Hindus affect to distinguish those tedious vehicles

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 ancient 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 *hauts*, 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 not to be 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 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.

ceding Paper.

नभिमराशिपादाव्रम

अकीर्णम् ९

भः

जैरयत् २

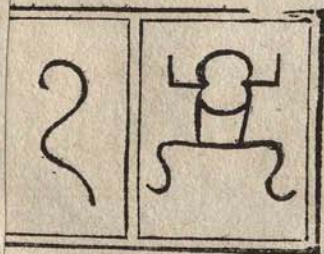
मिनौ

यौम् ३

कृराजकुटीम्

होमान् ४

म



स्वद्वर

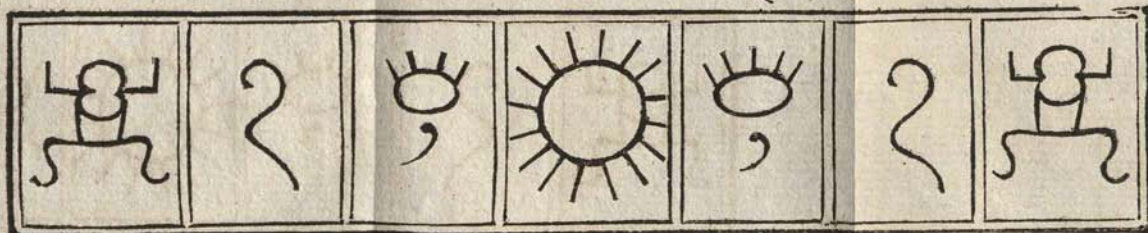
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Copy of the original Inscription referred to in the preceding Paper.

नमो बुद्धाय वाराणसीसरस्यं गुरीः श्रीधामराशिपादात्रम
 आराध्यनमितनृपति शिरोरुहैः शिवलाकीर्णम् १
 भूपालचित्रयष्ट्यादि कीर्तिरत्नधराचयः
 गौडाधिपोमह्नीपालः काश्याश्रीमानकारयत् २
 महजीकृतपांडित्यो बोद्धारावतिवर्त्तिनौ
 यो धर्मं राजिकं सांगं धर्मचक्रपुनन्नबम् ३
 कृतवंतौ च नवीनमेषुमहास्थानशैलराजकुटीम्
 हनां श्रीस्थिरपालो वसंतपालोनुजः श्रीमान् ४
 सम्वत् १०८३ पौष दिन १९



स्रधम्महेतु प्रकरो हेतुंतेषां तथाफले स्रवदर
 तेषां च यत्तविराथा वंतादी महाप्रमणाः


 ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय

No. III. *Ekvira* or *Jebire*.

ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय

ॐ नमो भगवते वासुदेवाय

ॐ नमो भगवते वासुदेवाय

ॐ नमो भगवते वासुदेवाय

ॐ नमो भगवते वासुदेवाय

No. I. From Verool or Ellora.

<p>ॐ नमो भगवते वासुदेवाय पञ्चमोऽध्यायः ॥ १ ॥ श्रीकृष्ण उवाच ॥</p>	<p>ॐ नमो भगवते वासुदेवाय पञ्चमोऽध्यायः ॥ १ ॥ श्रीकृष्ण उवाच ॥</p>	<p>ॐ नमो भगवते वासुदेवाय पञ्चमोऽध्यायः ॥ १ ॥ श्रीकृष्ण उवाच ॥</p>
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No. II. Verool or Ellora.

श्रीगणेशाय नमः
 याति लोकादिभ्यः
 सकृत्पति मय

No. III. Ekvira or Jebire.

ॐ नमो भगवते वासुदेवाय
 पञ्चमोऽध्यायः ॥ १ ॥
 श्रीकृष्ण उवाच ॥

No. IV. Ekvira or Jebire.

ॐ नमो भगवते वासुदेवाय
 पञ्चमोऽध्यायः ॥ १ ॥
 श्रीकृष्ण उवाच ॥

No. V. Salfette.

ॐ नमो भगवते वासुदेवाय
 पञ्चमोऽध्यायः ॥ १ ॥
 श्रीकृष्ण उवाच ॥

No. VI. Verool or Ellora.

श्रीगणेशाय नमः
 याति लोकादिभ्यः
 सकृत्पति मय

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 LIEUTENANT 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 LIEUTENANT WILFORD, containing his Translation of the Inscriptions, accompanies them.

I HAVE the honour to return to you the fac simile of the several inscriptions, 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 *Sanscrit*, containing a great many ancient alphabets formerly in use in different parts of *India*. This was really a fortunate discovery, which hereafter may be of great service to us. But let us proceed.

Number II. and VI. are pure *Sanscrit*; and the character, though uncouth, is *Sanscrit* also.

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

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

The numbers I. III. IV. and V. relate to the wanderings of YUDISHTIRA and the PANDOVAS through forests and uninhabited places. They were precluded, by agreement, from conversing with mankind; but their friends and relations, VIDURA and 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 *Purânas*.

No. I.

Consists of four distinct parts, which are to be read separately. In the first part, (1,) 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

In the 2d part of No. I.

“ Having first broken the stone (that closes thy
“ cave) come here secretly, old man, that thou mayest
“ obtain the object of thy desire. Thy sufferings vex
“ me fore.”

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-hara*,” (*Hara-hara*, the name of MAHADEVVA, twice expressed, is an exclamation used by people in great distress,) “ ascend into thy
“ cave—Hence send letters—But into thy cave go se-
“ cretly.”

No. IV.

“ Thou wilt soon perceive that they are leagued to-
“ gether, and that their bellies (appetites) are the
“ only rule of their conduct. Decline their friend-
“ ship—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 thyself separate as the lotos (from
“ the

“ the waters in which it floats.)—Get into the house
 “ of a certain ploughman, and first remain concealed
 “ there; but afterwards keep thyself in readiness.”

The two following numbers allude to the worship
 of BUDDHA.

No. II.

“ Here is the statue of SA'CYA-UDA'RACA, (now a
 “ form of BUDDHA,) but who was before a *Brahmacâri*,
 “ called SRI'-SOHILA.”

No. VI.

“ SA'CYA-PA'DA'MRATA made this statue.”

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

F. WILFORD.

No. I.

बहलाऊहा	वरप्पुस्तवृद्ध	कृद्धतरव	इतरथा
पकटवृद्ध	पथरुडक	इपैपे	वृत्त
गुप्तसुपुथितम	पैपे		

Bhalá úhá
pacat'ha vra'dhara bud'ha
gupta suputhitáma

Varappu pluta vrad'dha
patthar'hatid'ha l'ha
paipé

Crá'drata'ha-
i paipé

Itaratthá
vratiam.

The same in Sanscrit.

बहुलातर्कताप्रकटवृत्तः	वरंप्राप्तवृद्ध	कृद्धतर	अथथा
मूर्खः छतः सुप्रथितम	पथरुसंडयिवाह	स्वतः प्राप्त	वृत्तांत
	प्राप		

Bahulá tarcaná prátáta vrad'dha
múrk'chhat' sannab' suprathitáma

Varam práptam vrad'dho
pattharame han'dayiváha
prápa

Casthara'sa
svat' práptam
vratiantam.

No. III.

रुचिरहरहर	Ruchara Hara-hara
गुहंरुहलैखानि	aruruha léhac
मेषयगूठः गच्छ	rurui guha ii.

The same in Sanscrit.

रुचरहरहर	Ruchra Hara-hara
अरुहलैखानि	guhám ruhya lé'hyáni
रुचरगूठः गच्छ	pragaya ga' dhá gach'ha,

No. IV.

कलद्रुजटेरुहैपहृद्रुहैमेरुउनरेषगुह्यरतठ

Kala-i jat'hé ruhahai paha-i thé snéharah aruré shaguhadara latá.

The same in Sanscrit.

जातोहिजटरेरुहाः प्रहितं इच्छंति मे हं आहरातद्रुहाद्वारं लिख

Jánihí jat'hare rú' dháh prahitam ich'hanti snéham áhara étadguhá dváram lic'ha.

The Alphabetical System of the
Language of
AWA and RACHAIN

Plate 1

၁ ၂ ၃ ၄ ၅ ၆ ၇ ၈ ၉ ၁၀ ၁၁ ၁၂ ၁၃ ၁၄ ၁၅
ch g ch n ch chh j chh ny t th d th n

၁၆ ၁၇ ၁၈ ၁၉ ၂၀ ၂၁ ၂၂ ၂၃ ၂၄ ၂၅ ၂၆ ၂၇ ၂၈ ၂၉ ၃၀
t th d th n p p'h b p'h m y r l w f

၃၁ ၃၂ ၃၃
h i ä

၃၄ ၃၅ ၃၆ ၃၇ ၃၈ ၃၉ ၄၀ ၄၁ ၄၂ ၄၃ ၄၄ ၄၅
my mr hm hmy hmr mw myw mrw hmw hmyw hmrv

၄၆ ၄၇ ၄၈ ၄၉ ၅၀ ၅၁ ၅၂ ၅၃ ၅၄ ၅၅ ၅၆ ၅၇
ä ä i i u ü e é aō ao äin ä

၅၈ ၅၉ ၆၀ ၆၁ ၆၂ ၆၃ ၆၄ ၆၅ ၆၆ ၆၇ ၆၈
äc äin,äni aich ain äit äin,äin äip äim e o,ö

၆၉ ၇၀ ၇၁ ၇၂ ၇၃ ၇၄ ၇၅ ၇၆ ၇၇ ၇၈ ၇၉
äc it upi aüc aic äin in um,un aui ain

၈၀ ၈၁ ၈၂ ၈၃ ၈၄ ၈၅ ၈၆ ၈၇ ၈၈ ၈၉ ၉၀
tha thain i i u ä e é aō ao

၉၁ ၉၂ ၉၃ ၉၄ ၉၅ ၉၆ ၉၇
3e.fämi: fämi zerue aüc fänbun cäimphä

မဟာသမတ မင် ငြိမ် စကြာစန္ဒာ ဆန့် ဖြိုင် ဖြိုင် တ
 ကို ပိဏ္ဏား တံခါး နှိုက် ဆောင် ချေ သွား တစဆ
 ဘွတ်ပါး သွား ဂဗ္ဘသတ် စကား တိုက် ကို ငြား
 လိုက် သ် လိုက် မူကား နှိုက် ငြိမ် က ဖြိုင် အရှေ့ နှိုက်
 မှက် နှိုက် မှက် ထမုံ စားမှ မှက်စိ မှက်စွာ ခထိုင်
 ဟီး ငွား ဆယ် လှကော် စင် ငြိမ် နှိုက် ကို လက်
 ကိုက် သူ ပါး ဘင် ဘွတ် သွင် ဘွင် နှိုက် သွား ကို ငြိုင် ဝတ်
 တား တထာ ဆင် ပြ နှိုက် အမှိုက် လေ ဟီး ပြိုင်
 ဘထိ တိုက် နှိုင် လေ လေ နှိုင် နှိုက် နှိုက် လက် နှိုက်
 နှိုက် နှိုက် သူမဟား ကိုက် နှိုက် နှိုက် နှိုက် စ
 သွက် နှိုက် ဆင်ကား တိုက် ကိုက် သွား နှိုင် တိုက် တ
 နှိုက် နှိုက် နှိုက် တဆယ် ဘွတ်ပါး ဂဗ္ဘသတ် မဟာ
 စကား ကိုက် မဟာသမဟာ မင် ငြိမ် အား ငြား လေ
 လိုက် သွား နှိုက် ။

XII.

OBSERVATIONS ON THE ALPHABETICAL SYSTEM

OF THE

LANGUAGE of AWA and RAC'HAIN*.

By CAPTAIN JOHN TOWERS.

THE annexed *Plate* † is a Specimen of the Alphabet of the Language of *Awă* and *Răc'hain*, agreeably to the Arrangement adopted by the *Brăimmas* and *Mărămăs*, or Natives of those Kingdoms.

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

The abecedary rules, as taught by the natives, are, in their aggregate capacity, called *Săubun*, or, *The System of Instruction*. They are classed under three distinct

* *Awă* and *Aracan*.† *Plate* I.

မဟာသမတ မင် ငြိ မြေစဉ် ဆန် ပြိုင် ပြိုင် တ
 ကို ပိဏ္ဏား တံခါး နှိုက် ဆောင် ချေ သွား တစ်ဆ
 ဆွတ်ဂါး သွား ဂဗ္ဘသတိ စကား ယိုက် ကိုက် ငြား
 ယိုက် သိ ယိုက် မူကား ဇုဇုန် ငြိ က ဗျင် အရှေ့ ယိုက်
 စကား ကိုက် မဟာသမတ မင် ငြိ အား ငြား လေ
 ယိုက် သွား ငှါ ။

XII.

OBSERVATIONS ON THE ALPHABETICAL SYSTEM

OF THE

LANGUAGE of Awã and Rãc'hain*.

By CAPTAIN JOHN TOWERS.

THE annexed *Plate* † is a Specimen of the Alphabet of the Language of *Awã* and *Rãc'hain*, agreeably to the Arrangement adopted by the *Brãimmas* and *Mãrãmăs*, or Natives of those Kingdoms.

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

The abecedary rules, as taught by the natives, are, in their aggregate capacity, called *Sãnbun*, or, *The System of Instruction*. They are classed under three distinct

* *Awã* and *Aracan*.† *Plate I.*

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 *ärwi*, *äsaitne*, and *äsaitcri*, 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 *cägric'he*, or the *alphabet*; respecting which there is little to observe. In certain cases, to facilitate utterance, *c* is permuted with *g*, *ch* with *j*; the second *d* with the second *t*, *p* with *b*, and conversely. Of those sounds that have more than one symbol, the first *c'h*, *ch'h*, *l*; second *t*, *d*, *n*; and third *t'h*, are in general use; also the second *p'h*; 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 *äpān*, *äräit*; *hñäch'hwe*, *hmäch'hwe*, &c. according to the letter it is associated with, and *wäch'hwe*.

äpān.

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'h*, (1*) *g*, *t*, (2,) *p*, *p'h*, (1,) *b*, *m*, *l*, (1,) *s*. To this last it gives nearly

* The figures refer to the archetype in the *Plate*.

nearly the sound of our *sh*; 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.

Arărit.

This mark is typified by *r*, and is always prefixed to the letters with which it associates. These are *c, c'h, (1,) g, n, ch'h, (1;) t, (2;) p, p'h, (1;) b, m*. With *ch'h* 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 *ărărit* designates its natural form, meaning *erect* or *upright*.

Hmăch'hwe.

This extraordinary mark forms a new class of aspirates. Its name signifies *suspended*, from its situation with respect to the letter. The letters under which it is placed, are *n, ny, n, (2;) m, r, l, (1;) w, s*; before the *first seven* of which its type is *h*.* *s* it hardens into *z*, the appropriate symbol; or adds a syllable to the inherent vowel, as *sămi*, 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

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either

* 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.

either side of it, a liquid is formed peculiar to the *British* dialect of the *Celtick*. We have found, however, this very sound in the mark before us when associated with *l*. If this be the sound represented by *ll*, as in the common surname *Lloyd*, the notation is but ill-suited to give an idea of its powers. In the combination of this mark with *äpān*, the only letters of association are *m* and *l*; and with *ārāit*, *n* and *m*; the symbol being formed, as in the original, of the component parts.

Wäch'hwe,

or the *suspended w*, is subtended to every letter, excepting that with which it corresponds in the alphabet. Its symbol is *w*, but subject to certain changes and suppression, the particular instances of which will appear when the vowels come to be treated of. This mark with the letter *h*, and the one immediately preceding with the letter *w*, form two combinations for the same sound; which is that of *wh* in the word *what*. In its associations with the other marks, it is governed by the same rules, and governs the same letters as already related under their separate and combined forms; with an exception, however, to its homogeneous character in the alphabet. With *äpān*, and *äpān hmäch'hwe* and *hläch'hwe*, we have the genuine sound of our *third* vowel forming a diphthong with the *fifth*; as *miuwä*, *hmiuwä*, *hliuwä*; the diphthong in these instances having precisely the same sound as in our word *lieu*: but, to preserve the notation here laid down, it must be typified by *y*, as *mywä*, *hmywä*, *hlywä*; though it might more properly be represented by its constituent parts, as in the first example.

3, 4, 5.

These are the *three series of vowels and nasal marks*. The first is called *ārwi*, or *written*, simply*; the second

* A letter is also said to be *ārwi* when uninflected.

cond *āsāitne*, from the root *sāit*, to strike, (owing to the mark *āsāit* or *tānc'hwāiñ* that is struck in writing from the top of the *final* letter) and *ne*, small; and the third *āsāitcri*, from the same, and *cri*, large, great, in consequence of the proportion of the *first* series that is ingrafted into it being more than in the second.

The alphabet, in its several associations with *āpāñ*, *ārāit*, *hñāch'hwe*, and *wāch'hwe*, is, with only one exception, uniformly inflected throughout with the three series of vowels and nasal marks in regular rotation as they occur in the Plate. The instance to the contrary is *wāch'hwe*, which is altogether excluded in the alphabetical inflection of *āsāitcri*.

Except as a compound, the first vocal sound, as described in the System, has no place in the language before us. And there is yet a more striking singularity; which is, that every syllable is liquid, as it were, in its termination, each letter having its peculiar vowel or nasal mark subjoined, and in no instance coalescing with a following letter. But, to elucidate it by instances from our own language: were a native of *Awa* or *Aracan* merely acquainted with the Roman letters, and that such and such symbols represented such and such sounds, without knowing their rules of association, to read the words *book*, *boot*, *bull*, he would, agreeably to the powers he is taught to affix to the characters of his own language, pronounce them uniformly *bū*, or *būcā*, *būtā*, *bulā*, respectively. And he could not possibly do otherwise; the organs of articulation being inadequate to give utterance to the final letters according to the abrupt mode by which we are instructed to 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 *Mărămās*, 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 *Hindústani* 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 *Nágari* 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, ăċ.

Our extended sound in *all*, 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,

late, terminated by a kind of catch. It seems, however, to drop this distinction when followed by a grave accent, as *tārā*, 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 kâf*; 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, ï, î.

The two first are accented in the same proportion as *ā* 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 *āpāñ* 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 discernible at first, but the difference is discovered in a day or two's practice by the assistance of a native.

u, ù, u̇.

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 *āsāitne* and *āsāitri*, 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 *wāch'hwe*, and inflected by the two first of these vowels, remains the same as in its unassociated form; but the sigma in this case appears to be considered by the natives themselves as redundant, for it has hitherto only been met with in their abecedary system.

e, è.

The *first* is the *e* of the System. It has two types; the *seventh* of the first series, and the *last but one* of the second, and which are often abbreviated in writing, as in the verbal termination *ze* and *rwe* 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 approaches 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,

* Plate I. 4.

words, even for \bar{a} and \bar{a}' , when inflecting the other letters with *wäch'hwe*, suspended. Like *u*, \bar{u} , the symbol in association with *wäch'hwe*, when inflected with these four vowels, is redundant.

$\bar{a}i'$, $\bar{a}i\bar{p}$; *aich*, *aiç*.

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 *femicolon*, their sounds are congenial. The two first form the exception taken notice of under the third class of vowels.

auç.

The diphthong of the *first* and *fifth* vowels, already so fully described in the System, with the guttural termination of $\bar{a}ç$, 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.

$\bar{a}n$, $\bar{a}n'$.

No elucidation is here necessary. A species of abbreviation is sometimes observable in writing, when

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the

* See Plate I. c.

the double letter is placed above, instead of preceding, the following letter; as in the word *sānbun**.

in.

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

um, un.

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 *cumbuṣ*, a *small eminence*, or rising ground. The nasal is frequently represented by a point above the letters.

āiṅ, äiṅ, aim; aiṅ, aiṅ.

The vowels of those nasals are in the same proportion as *āiṅ, aich*, pronounced without the acute accent and abrupt termination by which they are respectively distinguished. The *obscure* nasal †, 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 seek their place when a *labial* follows, as in the word *cāimp'hā*, the *earth* ‡. It may be proper

* See Plate I. d.

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

‡ See Plate I. 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 *āsāit* being suppressed; an abbreviation very common in the vowels and nasal marks formed by double letters, particularly where the double letter is the same with that which immediately follows it.

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 *ain* and *ain* are permuted with *è* and *e* when inflecting *ny*, *y*, and the whole class of *āpān*; as *nyèn*, *nyen*, &c. and *ain*, when inflecting those letters with *wäch'hwe* suspended, and the class *āpān-wäch'hwe*; as *nywèn*, &c. This last nasal, by an anomaly not to be accounted for, is very often written for *e*.

ain, ain.

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 *ārwi* and *āsāitne* with *wäch'hwe* suspended, is preceded by the fourth vowel, which, in this instance only, forms the symbol for *wäch'hwe*. The notation, therefore, for this deviation should be as follows: *oā, oa, oà, oac, oan, oan*; *o'i, o'ì*; *o'e o'è*; *o'ait, o'aip, o'ain, o'ain, o'aim*; *o'aich, o'aic, o'ain, o'ain*. 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*; *o, o*; they retain the same sound, as has been already observed, either with or without *wäch'hwe*.

The

The following extract, taken from a book entitled *Mānu Śāingwān*, 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.

*Māhāsāmādā mān gri chāc' crāwālā sānehya prain
brain tāin daiñ pit', tā tāinhā hnaic' chhāun chye zaò
tāchhe shaich' pā zaò thāimmāsāit chāgā do go crā lo si
lo mu'gā nāin nāc' cri gā hlyān a'hri zo myāc' hnā mu'rwe
tāmān chā hmā myāc' hnā chāin dwān pā nā chhe gra-
o'rwe chān gre jwā colāc' co sup sār' rwe sāin shān jwā
zaò co phrān wāit chā tāin' chhā chhān bri zaò āmyo
lēbā pārit'sāit do hnān che we chrāin rāin lyāc' lāc'
up chyi hmā rādānā sumbā go hri' cho rwe brāimmā chā
zaò nāit sigrā do go hr'cho tain dāin u hmā hlyān i
tāchhe shaich' pā thāimmāsāit tārā chāgā go māhāsā-
mādā mān gri ā crā pe lo zaò hūā.**

And *Mānu* said, “O, mighty Prince, *Māhāsāmādā!* if thou hast an inclination to hear and understand the words of the eighteen holy books which I brought from the gate of *Chāc' rāwālā*, † that enclose and form a barrier (to the earth) from thy palace; with thy face turned towards the east, cleaning thy teeth; washing thy eyes, mouth, cheeks, and ears, and wiping thy body and hands; and with a purified person, and having put on thy apparel and eat; and with the four friends ‡ assembled, and forming a circle, closing thy hands, and making obeisance to the three inestimable jewels, § and prostrating thyself before *Brāimmā*,
(and

* 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, *NAIT* and *SIGRA*, supposed to possess the peculiar guardianship of mankind; and *Brāimmā* through an attribute, it would seem, of ubiquity.

§ *Phurā*, *Tārā Sānc'hā*. The incarnate Deities, Divine Justice, and the Priests.

(and the two classes of beneficent Genii) *Nārit* and *Sigrā*, and making known to them thy grievances (having performed all these acts, then) will I present unto thee, illustrious monarch, *Māhāsāmadā*, 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 *Mārāmās*; 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 *Ava* 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

† See Plate I. Figure 6.

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 *Islámabád*, only one person has been heard of, and to him access has not hitherto been obtainable. Enquiry seems to favour 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 Juices 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. By 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

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; *Doctor Roxburgh* having procured from thence a specimen of the vine in flowers, from which he has classed it; but whose description I have not yet seen.

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

The usual method of drawing off the milk is by wounding the bark deeply in different places, from which it runs but slowly, it being full 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 a 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, surprisingly resemble 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 *serous* 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 ap-
pears

pears 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 *Caoutchouc*, 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

pletely covered the moulds one after another, and what dropped into the plates was used as part of the 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 before mentioned 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

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 met 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 eighths 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 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 either 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 centre, 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 in pressing out what is superfluous, so that none may be lost. The

L 2

cloth

cloth can be hung up at full length to dry; and the operation repeated until of whatever thickness wanted. For the reasons above-mentioned, care must be taken that one fold does not come in contact with another while wet.

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

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

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

This extraordinary vegetable production, in place of being injured by water, at its usual temperature

* is preserved by it. For a knowledge of this circumstance I am indebted to the *Chinese*. Having some years ago commissioned articles made of the elastic gum from *China*, I received them in a small jar filled up with water, in which state I have since kept them, without observing any signs 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*, *Rajamhal* and *Bauglipore* hills, as situations where there is every probability of succeeding, being very similar in soil and climate to the places of its growth on *Prince of Wales's Island*. It would, however, be advisable to make the first trial at this settlement, to learn in what way the propagation of the plant might be most successfully conducted. A further 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. GROSSART, 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
URCEOLA 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 *Doctör* 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 *Linnæan* System. It forms a new genus in the class *Pentandria*, and order *Monogynia*, and comes in immediately after *Tabernæmontana*, 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, *Urceola*, 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 M. 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 *Urceola 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 *Urceola 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 petaled, pitcher shaped, with its contracted mouth five-toothed: nectary entire, surrounding the germs; follicles two, round, drupacious; 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 hairs on the under side.

Stipules, none.

Panicles, terminal, brachiate, very ramous.

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

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

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

Corol, one petaled, pitcher shaped, hairy, mouth much contracted, five-toothed, divisions erect, acute, nectary entire, cylindric, 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 diameters—one celled, two valved.

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

EXPLANATION OF THE FIGURES.

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

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*, where 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 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 above mentioned 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 the *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 semi-fluid 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 semi-fluid 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 semi-fluid 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, their 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 had never 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 catgut 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 oil 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 solution remained thin and void of elasticity. I also found it soluble in wax,
and

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

XV.

SOME ACCOUNT OF THE
ASTRONOMICAL LABOURS

OF

JAYASINHA, RAJAH OF AMBHERE, OR
JAYANAGAR.

By WILLIAM HUNTER, Esquire.

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 *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
mathe-

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 honour 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 uttering the smallest
 ‘ particle of it, may open
 ‘ the mouth in confession
 ‘ of inability; and
 ‘ such adoration, that the
 ‘ study and accuracy of
 ‘ astronomers who measure
 ‘ the heavens, on
 ‘ the first step towards
 ‘ expressing it, may acquire
 ‘ knowledge their astonishment
 ‘ and utter insufficiency. Let us devote
 ‘ ourselves at the
 ‘ altar of the King of
 ‘ Kings, hallowed be his
 ‘ name! in the book of
 ‘ the register of whose

بسم الله الرحمن الرحيم
 ثناهي که خرد خورده
 بین دهند سان عقده
 کشادر ادای دقیقه از
 ان زبان اعتراف بعجز
 و تصور کشاید و ستایشی
 که فکر اصابت قرین را
 صدان فلک پیمای یا
 ولین درجه آن شرح
 و بیان اقرار به تحیر
 و نار سائبی نماید
 نثار بارگاه شهبثا هی
 که طباق سهوات بکنند
 ورقیست چند از دفتر
 دیوان قدرت او تقدس
 power

‘ power the lofty orbs of
 ‘ heaven are only a few
 ‘ leaves; and the stars
 ‘ and that heavenly cour-
 ‘ ser the sun, a small
 ‘ piece of money in the
 ‘ treasury of the empire
 ‘ of the Most High.

اسباه وانجم و خورشید
 آسمان پیوند دینار و
 درهمی است معروف از
 ینه خازن سلطنت او
 تعالت الاله اگر صفجات
 زتیج اقالیم زمین را
 جدا ول انهار و رقوم
 نجوم و اشجار مجلی
 و مزین نمیساخت هیچ
 مستخر جی اسجراج
 تقویم انواع حیب و
 ثمار نتوانتی نبود
 واکر راه ظهیرت اباد
 عناصر رانیشاعل ثوابت
 و سیار تابدار و مهتاب
 و آفتاب نور بار ظا هر
 نمیکر در سیدن بسر
 منزل مقصود و نجات
 از نار سا می غور
 محیط قدر نش ابر خس
 خس است بر هم زن
 دست افسوس و در اند
 پیشه ار تغاع قدرش
 ‘ the

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

‘ the precipices of igno-
‘ rance.

‘ From inability to
‘ comprehend the all-en-
‘ compassing beneficence
‘ of his power, HIPPAR-
‘ CHUS is an ignorant
‘ clown, who wrings the
‘ hands of vexation; and
‘ in the contemplation of
‘ his exalted majesty,
‘ PTOLEMY is a bat, who
‘ can never arrive at the
‘ sun of truth: The de-
‘ monstrations of EU-
‘ CLID are an imperfect
‘ sketch of the forms of
‘ his contrivance; and
‘ thousands of JEMSHED
‘ CASHY, or NUSEER
‘ TOOSEE, in this at-
‘ tempt would labour in
‘ vain.

‘ But since the well-
‘ wisher of the works of
‘ creation, and the ad-
‘ miring spectator of the
‘ theatre of infinite wif-
‘ dom and providence,
‘ *Servai-Feysing* from the
‘ first dawning of reason
‘ in his mind, and during
‘ its progress towards ma-
‘ turity, was entirely de-
‘ voted to the study of ma-
‘ thematical science, and
‘ the bent of his mind was
‘ constantly directed to
‘ the solution of its most

بطلمیوس خفاشی از
رسیدن با قلب حقیقت
مایوس براهین اقلیدس
در بیان اشکال صنایع
او حرفی ناتهام و حزار
ان جهشید کاشی چون
نصیر طوسی در پختن
سورای خام اما بعد خیر

خواه اصناف آذرینش
وتهاشای کارگاه دانش
وبینش سواي جینک
از بدو فطرت و عنعوان
سکور بغن ریاضی
مشعوف و مالوف بود
وهو اراه عنان طبعش
بکشف دقایق و حل
غوامض آن مصروف
بتأه یدکر دکاراز اصول
‘ dif-

' difficult problems; by
 ' the aid of the supreme
 ' artificer he obtained a
 ' thorough knowledge of
 ' its principles and rules.
 ' — He found that the cal-
 ' culation of the places of
 ' the stars as obtained
 ' from the tables in com-
 ' mon use, such as the
 ' new tables of SEID
 ' GOORGANEE and KHA-
 ' CANEE, and the *Tuf,hee-*
 ' *lat - Mula - Chand - Ak-*
 ' *ber-shahee*, and the
 ' Hindu books, and the
 ' European tables, in
 ' very many cases, give
 ' them widely different
 ' from those determined
 ' by observation: espe-
 ' cially the appearance of
 ' the new moons, the
 ' computation of which
 ' does not agree with ob-
 ' servation.

' Seeing that very im-
 ' portant affairs both re-
 ' garding 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 e-
 ' clipses of the sun and
 ' moon, many considera-
 ' ble disagreements, of
 ' a similar nature, were
 ' found; he represented

و قوانین آن خطی وافر
 و نصیبی کامل حاصل
 کرد چنان یاقوت که
 استخراج تعدادیم کواکب
 که از زیجهای متعارف
 مثل زیجه جدید سعید
 کور کانی و خاقانی و
 تسهیلات ملاچاند اکبر
 شاهي و کتبهاي هندی
 و زیجه فرنگی میشود
 اگر و اغلب اوقات
 دور از مرصود و عیان
 می یابند خصوصاً روتة
 اهله که جناب آن با
 مشاهدۀ کم موافقت
 میکند

و حال آنکه کارهای
 سترک ارباب مال و
 نحل و اصحاب دین و
 دول بدان منوط و مر-
 بوط است و همین طور
 در اوقات ظهور و خفای
 کواکب سیارات و از منده
 کسوفات و خسوفات
 ' it

' it to his majesty of dig-
 ' nity and power, the
 ' sun of the firmament
 ' of felicity and domini-
 ' on, the splendor of the
 ' forehead of imperial
 ' magnificence, the un-
 ' rivalled pearl of the sea
 ' of sovereignty, the in-
 ' comparably brightest
 ' star of the heaven of
 ' empire, whose standard
 ' is the Sun, whose reti-
 ' nue the Moon; whose
 ' lance is MARS, and his
 ' pen like MERCURY;
 ' with attendants like
 ' VENUS; whose thresh-
 ' old is the sky, whose
 ' signet is JUPITER;
 ' whose centinel SA-
 ' TURN; the Emperor
 ' descended from a long
 ' race of Kings; an A-
 ' LEXANDER in dignity;
 ' the shadow of GOD;
 ' the victorious king,
 ' *Mahommed Shah*, may
 ' he ever be triumphant
 ' in battle!

' He was pleased to re-
 ' ply, since you, who are
 ' learned in the mysteries
 ' of science, have a per-
 ' fect knowledge of this
 ' matter; having affem-
 ' bled the astronomers
 ' and geometricians of the
 ' faith of ISLAM and the
 ' *Bramins and Pandits*,

اکثر تفاوت فا حش
 رومیدهد اینہنی را
 بعرض حضرت قدر قدرت
 مہر سپہر ابہت و
 کامکاری غرہ ناصیہ
 عظمت و شہر یاری
 دزیکتای بحر خلافت
 کبری ذری بی
 ہبتای فلک ملطنت
 عظمی خورشید علم
 مہر چشم مرج رمح عطار
 دقلم ناهید خدم سپہر
 آستان مشنری نکین
 کیوان پاسہبان
 السلطان ابن السلطان
 الخاقان ابن الخاقان
 مسکندر جاہ ظل اسباب
 شاہ غازی محمد شاہ
 لازال مظفرافی البعارک
 والبخازی رسانید
 فرمودند کہ چون
 آن دانای اسرار را
 درین امر مہارت تہام
 است مہندسیان و
 متخیمان فرقر اسلام و
 برہمنان و پند تال و
 منجہان فرہکر جمع

' and

and the astronomers of Europe, and having prepared all the apparatus of an observatory, do you so labour for the ascertaining of the point in question, that the disagreement between the calculated times of those phenomena, and the times in which they are observed to happen may be rectified.

Although this was a mighty task, which during a long period of time none of the powerful Rajahs had prosecuted; nor, among the tribes of ISLAM, since the time of the martyr-prince, whose sins are forgiven, MIRZA ULUGA BEG, to the present, which comprehends a period of more than three hundred years, had any one of the kings, possessed of power and dignity, turned his attention to this object; yet, to accomplish the exalted command which he had received, he (*Fey-sing,*) bound the girdle of resolution about the loins of his soul, and constructed here (at Dehly) several of the instruments of an obser-

نبوده و آلات رصدی ساخته تحقیقت کار وارسیده چنان سعی نباید که این اختلال که در زمان محسوب امور مر بوره و وقت مر صود آنها واقع میشود مر نفع کرد

هر چند که این امر خطیر بود و مدت مدید شده که از راجه‌های دوالا قنندار کی پیر امون ان نکردیده و در فرقه اهل اسلام هم از زمان شاه مرزا انع بیک تا این زمان که زیاده از سیصد مال کنر شته هیچ یکی از سلاطین ذی شان و صاحب ثرو تان بلند مکان باین کار میتوجه نکشته از برای بجا آوردن فرموده از رفع اعلی سرانجام امر ما موررا نطاق هبت بر میان جان بسته چندی از آلات رصدی ما نند انکه در سهرقند ساخته
vatory,

vatory, such as had been erected at *Samarcand*, agreeably to the *Musulman* books: such as *Zatul-huluck*, of brass, in diameter three *guz* of the measure now in use, (which is nearly equal to two cubits of the *Coram*) and *Zat-ul-shobetein*, and *Zat-ul-suchetein*, and *Suds-Fukheri*, and *sham-lah*. But finding that brass instruments did not come up to the ideas which he had formed of accuracy, 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 instruments; he concluded that the reason why the determinations of the ancients, such as *HIPARCHUS* and *PTOLEMY* proved inaccurate, must have been of this kind; therefore he constructed in *Dar-ul-khelâfet Shah-Jehanabad*, which is the seat of empire and prosperity, instruments of his own invention, such as *Fey-pergâs* and *Ram-junter* and *Semrât-*

بودند از روی کتب اسلام در اینجا هم ساختند از الحلق بر نحی بقطر سه کز رایج این عصر که قریب ضعف ذراع اهل شرع است و ذات الشعبتین و ذات الثقتین و سدس فخری و شامله لیکن چون آلهای بر نجیرا بنیب خردی و عدم تقیم بد قایق و لرزش خوردن و سود کشتن قطبهای و بیجا شدن مرکز دوا یر و اختلال وضع مقرری مطلوب کبابینگی مشرمدعانیافت معلوم کرد که سبب درست نیامدن مقررات قدما مانند ابرخس و بطلیمیوس امثال همین امور خواهد بود بنا بران در دار الخلافه شاه جهان آباد که محل دولت و اقبال است التهای اختر اعی خود مثل حی پرگاس و رام جنتر و شهر آتیه جنتر که نصف قطر آن هزد درع *junter,*

‘ *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 stabili-
 ‘ ty, with attention to the
 ‘ rules of geometry, and
 ‘ adjustment to the meri-
 ‘ dian, 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 wear-
 ‘ ing of their axes, and
 ‘ displacement of their
 ‘ centres, and the inequa-
 ‘ lity of the minutes,
 ‘ might be corrected.

‘ Thus, an accurate
 ‘ method of constructing
 ‘ an observatory was esta-
 ‘ blished; and the dif-
 ‘ ference which had ex-
 ‘ isted between the com-
 ‘ puted 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 observa-
 ‘ tions, he constructed
 ‘ instruments of the same
 ‘ kind in *Suwaï Feypoor*,
 ‘ and *Matra*, and *Benares*,
 ‘ and *Oujein*.—When he
 ‘ compared these obser-

است و دقیقه آن یک و
 نیم شعیره میشوند از
 سنگ و آهک با سه حکام
 تمام و رزانت مالا کلام
 نارعلیت قوانین هند
 سی و تحقیق خط
 نصف النهار و عرض بلد و
 احتیاط در پیمایش و
 نصب آنها تار کرده
 تابدین سبب خلل
 لرزش حلقهای دوایر و
 سایدن اقطاب و بیجا
 شدن مراکز و تفاوت
 دقیق بر طرف گردید
 و برای رصد طریق
 مستقیم پید اکشت و
 تغادتی که در محسوب
 نوابت و سیار و مرصود
 آنها میشد با سقانت
 چنین آلات اوساط و
 حرکات واقعی آنها
 دانسته مر تفغ ساخت
 و برای استمشهاد حقتت
 مدعا بین قسم آلات
 در سوای جی پور و
 متھرا و بنارس و اوجین
 هم بنا کرده شد چون
 رصدهای این ممکنه
 را بعد از تفاوت ملا
 حظر اطوال بلاد مقابله

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

In the same manner as the geometers and

کردند محسوب بامر
صود یکی آمد قصد
بر آن مصمم شد که همین
طور آلات در شهرهای
کلان دیگر هم ساخته
ویردا خفه کردن تا
هر که آسنای این فن
باشد هر گاه که مو
ضع کو کبی با و
ضع کو کبی بسته
بکو کب دیگر خواهد
که معلوم کند ازین
آلتها بعیان مشاهده
ناید اما چون اکثر
احتیاج واقع میشود
که اوضاع مستقلة و
حالات ما ضیه معلوم
نمایند و نیز در وقت
مطلوب گاه باشد که
ابر و باران مانع رصد
شود یا اقتدار و فرصت
و صل بر صد خلنه
مفقور باش زبچی
ساخته شود که از روی
آن تقویبهای هر روزه
کو آکب سال یسال
استخراج نموده در دفتر
ثبت نماید که در هر
وقت معد باشد

چون مهندسان پیشین
و راصدان سابق سا
astronomers

‘astronomers of antiquity bestowed many years on the practice of observation, thus, for the establishment of a certain method, after having constructed these instruments, the places of the stars were daily observed. After seven years had been spent in this employment, information was received, that about this time observatories had been constructed 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

لهای بسیار در شغل
رصد بسر برده اند بنا بر
طریق معروف نعد تیار
ساختن این آلات هر
روز در رصد کواکب
کرده نقید میسد چون
کشت نهکا ر هفت سال
گذشت مسهوع کشت
که در نزد یک باین زمان
در فرنک هم آلات
رصدی در ست کرده
اند و اکابر انچا و رانایان
ایشن باینکار ف مشغول
ومتوجه اند کار خانه
رصد در انجا هنوز هم
جاریست و ههواره در
تحقیق و قایق این علم
اند بنا علیه از اینجا
چند کس معقید علم
دانای این فن را بر
قاقت منویل پادری
بان سمیت فر سناده
زیچ جدید آنجا که با
سم لیرنمیه با فیه و سی
سال گذشته که بتاز
کی مرتب کشته باز
پچهای سابق آن دیار

* JEYSING finished his tables in the year of the Hijira 1141, or A. D. 1728.

† DE LA HIRE published the first edition of his tables in 1687, and the second in 1702.

' the European tables an-
 ' terior to these; on ex-
 ' amining and comparing
 ' the calculations of these
 ' tables, with actual ob-
 ' servation, it appeared
 ' there was an error in the
 ' former, in assigning the
 ' moon's place, of half a
 ' degree: although the
 ' error in the other plan-
 ' ets was not so great, yet
 ' the times of solar and lu-
 ' nar eclipses he found to
 ' come out later or earlier
 ' than the truth, by the
 ' fourth part of a *g, hurry*
 ' or fifteen *puls**. Hence
 ' he concluded that, since
 ' in *Europe*, astronomical
 ' instruments have not
 ' been constructed of
 ' such a size, and so large
 ' diameters, the motions
 ' which have been ob-
 ' served with them may
 ' have deviated a little
 ' from the truth: since, in
 ' this place, by the aid
 ' of the unerring artifi-
 ' cer, astronomical instru-
 ' ments have been con-
 ' structed with all the ex-
 ' actness that the heart
 ' can desire: and the mo-
 ' tions of the stars have,
 ' for a long period, been
 ' constantly observed

طلبد اشته ملا حضر
 نبوده چون محسوب
 آبرا بامر صود لحاظ
 کرده شده در تقویم قمر
 تفاوت نیم در جز طا هر
 کردید اگر چه در سیار
 ات دیگر آنقدر نبود و
 از منہ کسوفات و خسو
 فات را تاریخ دقیقه یوم
 که عبارت از یافته پل
 باشد پیش و پس یافت
 دانست که چون در
 فرنگ آلات رصدی
 باین بزرگی و اقطار
 نساخته اند حرکاتی که
 بتوسط آن دریافتند
 پاره از تحقیق دور
 افتاده چون بیاید کار
 ساز حقیقی اینجا آلات
 رصدی بحسب خواهش
 دل چنانچه باید مرتب
 شد و تامدت مدید
 تحقیق حرکات کو
 اکب و رصد آن نهوره

* ' 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.'

‘with them; agreeably
 ‘to observation the mean
 ‘motions and equations
 ‘were established. He
 ‘found the calculation to
 ‘agree perfectly with the
 ‘observation; and al-
 ‘though even to this day
 ‘the business of the ob-
 ‘servatory is carried on,
 ‘a table under the name
 ‘of his Majesty, the sha-
 ‘dow of God, compre-
 ‘hending the most accu-
 ‘rate rules, and most per-
 ‘fect methods of com-
 ‘putation, was construct-
 ‘ed; that so, when the
 ‘places of the stars, and
 ‘the appearance of the
 ‘new moons, and the
 ‘eclipses of the sun and
 ‘moon, and the con-
 ‘junctions of the heav-
 ‘enly bodies, are comput-
 ‘ed by it, they may ar-
 ‘rive as near as possible
 ‘to the truth, which, in
 ‘fact, is every day seen
 ‘and confirmed in the
 ‘observatory.

‘It therefore behoveth
 ‘those who excel in this
 ‘art, in return for so great
 ‘a benefit, to offer up
 ‘their prayers for long
 ‘continuance of the pow-
 ‘er and prosperity of so
 ‘good a King, the safe-
 ‘guard of the earth, and
 ‘thus obtain for them-
 ‘selves a blessing in both
 ‘worlds.

از روی آن اوسات و
 تعدیلات برای آنها
 مقرر رکست محسوب
 را با هر مودبی تفاوت با
 فت و هر چند که هنوز
 هم کار رصد جار بیست
 ز پچی بنام نامی حضرت
 ظل الهی مشتبهی را صوب
 طرف واحسن وجوه در
 سنت کرده شد که چون
 بدان استخراج تفاوتیم
 و رویت اهل و کسوفات
 و خسوفات و قرانات
 نهایتاً اقرب به تحقیق
 با شد چنانکه این معنی
 بالفعل در رصد خانه
 مشاهده و مبین میشود
 دنیا که ارباب این
 فن در مقابل این
 نعمت عظمی بد عا
 دوام رولت و خلافت
 چین باد شاه عالم باه
 مشغول گشته سعادت
 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 *Dehly* is situated without the walls of the city, at the distance of one mile and a quarter; it lies S. 22 deg. W. from the *Jumrah Musjid*, at the distance of a mile and three quarters, its latitude 28 deg. 37 min. 37 sec. N.* longitude 77 deg. 2 min. 27 sec. 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. Transf. 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 chord, I found to be 118 feet seven inches, reckoning its elevation equal to the latitude of the observatory, 28 deg. 37 min.; this gives the length of the base 104 feet one inch, and the perpendicular height 56 feet nine inches; but, the ground being lower at the north end, the actual elevation at the top of the gnomon above it is more than this quantity. This is the instrument called by *Jayasinha*, *femrat 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 top. On each side of

* The latitude assigned to it in the *Zeej Mahommedshahy* is 28 deg. 37 min.

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 upon 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 centre 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 3.74 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 centres 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 2.833 inches, and these are divided into minutes.

5. To the southward of the great dial are two buildings, named *Ustuanah*. 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 centre 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 measure 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 shewn by the shadow of the centre 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 number 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

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 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 follows:

	Ft.	In.		
Length of the radius from the circumference of the centre pillar to the wall; being equal to the height of the wall above the radii	24	$6\frac{1}{2}$		
Length of one degree on the circular wall		$5\frac{1}{4}$		
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	$2\frac{1}{4}$

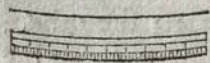
I do not see how observations can be made when the shadow falls on the spaces between the stone radii or sectors; and from reflecting on this, I am inclined to think, that the two instruments, instead of being duplicates, may be supplementary one to the other; the

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 *shamlah*. 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 *Feysingpoorah*, where are still the remains of a palace of *Jayasinha*, who was soubahdar of Meliva, 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 plaister, 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 centres, and a radius equal to their distance, two arcs of 90 degrees 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



A closer coincidence could not be expected, especially as no account is made of seconds in any of the latitudes given in the *Zeej Mahommedshahy*. 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 to the equator, the result will 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 0
Latitude of the observatory from observation of the sun upon the equator without allowing for refraction	23 10 0
<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 .09 of an inch, without any contrivance for subdivision, we shall find it needless to descend into such minuteness: and as *Fayasinha* had European observers, it is not likely the refraction would be neglected, especially as the *Zeej Mahommedshahy* contains a table for that purpose. This table is an exact copy of M. DE LA HIRE's, which may be seen in the *Encyclopedie*, art. *Refraction*.

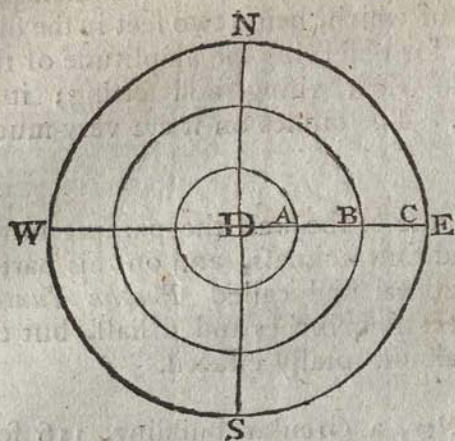
This instrument is called, *Yám-utter-bhitti-yunter*. With one of the same kind at Dehly, (No. 4, Dehly observatory,) in the year 1729, *Fayasinha* says, he determined the obliquity of the ecliptic to be 23° 28'. In the following year (1730) it was observed by GODIN 23° 28' 20'.

2. On the top of the mural quadrant is a small pillar, the upper circle of which, being two feet in the 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 increased in thickness, and on this part is constructed a horizontal dial called *Puebha 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 Hindu deity, so that I could not get access to examine its construction; but the following account of it is delivered in the *Sem'rat Siddhanta*, an astronomical work composed under the inspection of *Jayasinha*.

On a horizontal plane describe the three concentric circles ABC, 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 N. S. W. E. intersecting each other in the point D, directly above the centre of the pillar A. To the centre 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 N. S. W. E. 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 centre of the pillar A, should be connected by a thread

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 inches and a half. These are divided into *g, hurries*, of six degrees, into degrees and subdivisions, which are now effaced. In the centre 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 shewn by the shadow of the pin in 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-tangent, 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. *Semrát-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 *g, hurries* 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 (*kránti*) of a star, and its distance in time, from the meridian (*net-g, hurry*) place your eye among the divisions of 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 *g, hurries* 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 minutes, or two *puls*. In the centre 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; and the plaster of this instrument, though on the level of the terrace, and consequently more exposed to accidents than the others, is the freshest and most entire of all.

5. On the east wall, but facing westward, 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 BARKER, and Mr. WILLIAMS, I

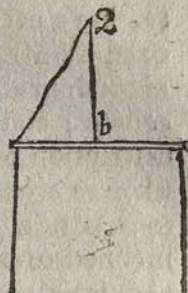
have only a few remarks to offer, in addition to the account delivered by those gentlemen.

I. A. (of Sir *Robert Barker's* plate) is the *Semrat-yunter*, described *Dehly* observatory, No. I. and *Oujein* observatory, No. VI. 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 *g, hurry*. Besides the stair contained in the gnomon, one ascends along a 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 *Fey-pergas* in allusion to the Rajah's name.

B is the equinoctial dial or *Naree-wila* of No. V. *Oujein* observatory. The name given by the *Pandits* to Mr. *Williams* (*gentu-rage*) 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 eyes, 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 not the same breadth,
and

and thicknefs with the rim. The limb is divided into 360 degrees, each degree into four equal parts; and there are larger divifions, containing fix degrees each. The fize of a degree is .3 of an inch. Round the centre revolves an index of brafs; the end of which is formed as in the margin; and the line A B, which produced, paffes through the centre of the circle, marks the degrees. From this description, it appears that the circle when placed in a vertical pofition, is in the plane of the meridian of Benares; when it declines from that pofition, it represents fome other meridian. Were there any contrivance for meafuring



the quantity of this deviation, it would answer the purpofe of an equatorial inftrument, for determining the place of a ftar, or any other phænomenon 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 pofition would mark the diftance of the object from the meridian; and the degrees on the circle, interfefted between the index and the diameter, which is perpendicular to that on which it revolves, would fhew its declination. This laft may indeed be obferved with the inftrument in its prefent ftate; but I am inclined to think, that there has been fome contrivance for the former part alfo; having been informed by a learned Pandit, that in two rings of this kind in the *Jeyanagar* obfervatory fuch contrivance aétually exifts. On one of the pillars that fupport the axis, a circle is defcribed 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 the circle; and thus points out, among the divifions on the immoveable circle, the diftance from the meridian of the body to be obferved.

Obfervations with this inftrument cannot have admitted of much accuracy, as the index is not fur-

nished with sights; and the pin by which it is fixed to the centre 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 *Sem'rat 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 by the ring above described.

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

The quadrant described by Sir *Robert Barker*, but not represented in his plate, is the *Yam-utter-bhitti-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

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 intitled *Zeej Mahommedshahy*. But here I should regret that, not having access to the *Tabulæ Ludovicia* 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 Mahommedshahy*) 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.
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 period, 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 second or third, to be subtracted. But if the second argument is in the second half of the zodiac, and the first

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 *selek-mayee* 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 are 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 *mumussi*, 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, subtraction, 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 the 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 *Sid,dhantas*, 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 translation 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 confirmation,

firmation, 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 had penetration to see, and ingenuously 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 ancestors 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
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of European as of Hindu construction. The assistance derived by *Jayasinha* from European books also inclines me to think, that the treatise entitled *Cshe-traderfa*, which was inspected by *Captain WILFORD's Paradi*, (*Asiat. Res.* vol. IV. p. 178.) was not confined to geometrical knowledge, of purely *Brahminical origin*.

XVI.

DESCRIPTION of a Species of MELOE, an Insect of the FIRST or COLEOPTEROUS Order in the LINNEAN System: found in all Parts of BEN-GAL, BEHAR, and OUDE; and possessing all the Properties of the SPANISH blistering Fly, or MELOE Veficatorius.

By Captain HAKDWICKE,

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 long 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, inequaled, clubbed, the posterior pair of three, and the anterior, of two articulations.

Maxillæ or jaws—four, the exterior horney, 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

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 consists of five articulations; and of the posterior pair, four only.

Every part of the insect, excepting the wings and elytra, is black, oily to the touch, and covered more or less with dense hairs; a few scattered hairs are also evident on the elytra. All the crustaceous parts of the insect are pitted minutely. It is about the bigness of the *Meloë Proscarabæus* of LINN. and a full grown one, when dry and fit for use, is to the *M. Vesicatorius* 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 *Raam Turkey*; or *Hibiscus Esculentus Hibiscus*, *Rosa Sensis*—and in jungles where these plants are not to be found, they are to be met with on two or more 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 medical use, at that time abounding more abundantly in
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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 globula 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 carraway 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 perpendicularly 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 of *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 MELOE, OR LYTTA.

By W. HUNTER, Esq.

The circumstance respecting your new species of MELOE 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, I 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 MELOE, 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 preservation. Captain HARD-

WICKE has certainly, however, made a most useful addition to our *Asiatick Materia Medica*; and, he may rely on it, that if I should inadvertently mention the discovery, I shall not fail to give him also the merit he is so fairly entitled to for it. The country people, I find, give the fly different names, so that there are, I suppose, many species of it, the most efficacious of which he will, in his account of it, particularize.

REFERENCES.

- A. A full grown insect of its natural size.
- B. The same reversed, to show the under part of the body and limbs.
- C. The eggs.
- D. Anelytron 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 or 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 *Calmucs*, 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 the 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 eyebrows, or supercillary 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 appear-

ance 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 black. 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 complete; 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,

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

In the orthography I have had much difficulty. Two people will seldom write in the same way, any word or 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 yoe, is written rae; and the *Palli* name for their capital city *Amarapoor*a, 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 and nut, tobacco, quicklime, and spices. In this state he is nearly deprived of the use of his tongue in articulation, which,

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 *Myammau*. By the people of *Pegu*, they are named *Pummay*; by the *Karaya*, *Yoo*; by the people of *Cussay*, *Awaw*; by the *Cussay shau*, *Kammau*; by the *Chinese* of *Younan*, *Laumeen*; and by the *Aykobat*, *Anwa*. They esteem themselves to be descended from the people of *Arakan*, whom they often call *Myammau gyee*, that is to say, great *Burmas*.

The proper natives of *Arakan*, call themselves *Yakain*, which name is also commonly given to them by the *Burmas*. By the people of *Pegu* they are named *Takain*. By the *Bengal Hindus*, at least by such of them as have been settled in *Arakan*, the country is called *Rossawn*, from whence, I suppose, Mr. REN-NELL has been induced to make a country named *Roshawn* occupy part of his map, not conceiving that it would 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 *Mahommedans* settled at *Arakan*, call the country *Rovingaw*, the *Persians* call it *Rekan*.

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 its 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 subjected 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 difference is not mentioned.

1. English.	Myanmaro.	Yakain.	Tanayntharee.	Yo.
1 Sun	Nay	—	—	—
2 Moon	La	—	—	—
3 Star	Kyee	Kyay	—	Kay
4 Earth	Myacgyee	—	—	—
5 Water	Yæ	Ree	—	Ræ
				6 Fire

<i>English.</i>	<i>Myammaw.</i>	<i>Yakain.</i>	<i>Tanayntharee.</i>	<i>Yo.</i>
6 Fire	Mee	—	—	—
7 Stone	Kiouk	—	—	Kioukay
8 Wind	Læ	Lee	—	—
9 Rain	Mo	—	—	—
10 Man	Loo	—	—	—
11 Woman	Meemma	—	—	—
12 Child	Loogalay	* Looſhee	—	—
13 Head	Kaung	—	—	—
14 Mouth	Parat	—	—	—
15 Arm	Læmmaung	—	—	—
16 Hand	Læk	—	—	Laik
17 Leg	Kæthalour	—	—	Saloongfa
18 Foot	Kiæbamo	—	—	—
19 Beast	Taraitram	—	—	—
20 Bird	Hugæk	—	—	Knap
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	Hueet	—	—	—
30 Three	Thoum	—	—	—
31 Four	Lay	—	—	—

* Literally, a little man.

<i>English.</i>	<i>Mayammaw.</i>	<i>Yakain.</i>	<i>Tanayntharee.</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	—	Mateenahay
44 Kill	That	Sot	—	Afatu
45 Yes	Houkkay	—	—	—
46 No	Mahouppoo	—	—	—
47 Here	Deemaw	—	—	Thaman
48 There	Homaw	—	—	—
49 Above	Apomaw	—	—	Apobau
50 Below	Houkmaw	—	—	Auk

The next most prevalent language in *India* beyond the *Ganges*, is what we call the *Siammese*, a word probably corrupted from the *Shan* of the *Burmas*. The *Siammese* race occupies the whole frontier of *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 complete, 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 *Nay*, which signifies little. By the *Burmas*, from the vulgar name of their former capital city, they are called *Yoodaya*; by the people of *Pegu* they are named *Seem*; and by the *Chinefe* of *Yunan*, *Syianlo* or *Kyænlo*.

The second dialect of the *Siammeſe* language which I ſhall mention, is that of a people, who, to me, alſo called themſelves ſimply *Tai*. I believe, however, they are the *Tai-yay*, or great *Tai*, of Mr. LOUBERE. They have been long ſubject to the *Burmas*, who call them *Myelapſhan*; by the people of *Pegu* they are named *Sawn*; *Thay* by the *Karayn*; *Looktai* by the *Katheeſhan*; *Kabo* by the people of *Kathee* or *Cuffay*; *Pawyee* by the *Chinefe*; and to me they were named *Lau* by the *Siammeſe* 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 a conſiderably 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 fifteen miles to the eaſt of *Ava*.

The third dialect of the *Siammeſe* 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 *Moitay Kabo*, by the *Kathee* or people of *Cuffay*. 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. English.	Tainay.	Taiyay.	Tai-loong.
1 Sun	Rocn	Kawan	Kangoon
2 Moon	Sun	Loen	Noon
3 Stars	Dau	Lau	Nau
4 Earth	Deen	—	Neen
5 Water	Nam	Nawh or Naum	Nam
6 Fire	Fai	Fai	Pui
7 Stone	Hin	—	Heen
8 Wind	Lam	Loum	Loom
9 Rain	Fon	Foon	Poon
10 Man	Kon	Kon	Koon
11 Woman	Pooen	Paeyen	Pawneen
12 Child	Daeknooc	Lawen	Lookwoon
13 Head	Seeza	Ho	Hoo
14 Mouth	Pawk	Tfop	Pawk
15 Arm	Kayn	Komooee	Moo
16 Hand	Moo	Mooee	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	Dee	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	Hok	Houk	Hook
34 Seven	Kyæt	Sayt	Seet
35 Eight	Payt	Payt	Pæt
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	Nanon	Nawn	Nung
43 Stand	Yoon	Lootlook	Peignung
44 Kill	Kaw	Po	Potai
45 Yes	O	Sai	Munna
46 No	Maihai	Mofai	Motfau
47 Here	Teence	Teenai	Teenay
48 There	Teenon	Teepoon	Ponaw
49 Above	Bonon	Teenaipoon	Nooa
50 Below	Kang lang	Tectai	—

The next language, of which I shall give a specimen, is that of the people who call themselves *Moitay*.

* Kau is rice, and Nam is water. Here, therefore, we have a nation with no word to express the difference between eating and drinking. The pleasures of the table must be in little request with them.

Their

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 *Cussay*. Mr. *RENNEL* having from *Bengal* obtained information of *Meckley*, and from *Ava* having heard of *Cussay*, never conceived that they were the same, and, accordingly, in his map of *Hindustan*, has laid down two kingdoms, *Cussay* 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. <i>English.</i>	<i>Moitay.</i>	<i>English.</i>	<i>Moitay.</i>
1 Sun	Noomeet	13 Head	Kop Kok
2 Moon	Taw	14 Mouth	Seembaw
3 Stars	Towang Mee-	15 Arm	Pambom
	zat	16 Hand	Khoit
4 Earth	Leipauk	17 Leg	—
5 Water	Eesheen	18 Foot with Kho	
6 Fire	Mee	the ankle	
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	Pattay
12 Child	Peeka	24 Great	Sauwee

<i>English.</i>	<i>Moitay.</i>	<i>English.</i>	<i>Moitay.</i>
25 Little	Apeekauk	38 Eat	Sat
26 Long	Afamba	39 Drink	Tawee
27 Short	Ataymba	40 Sleep	Keepee
28 One	Amaw	41 Walk	Kwnee
29 Two	Anee	42 Sir	Pummee
30 Three	Ahoom	43 Stand	Lapee
31 Four	Maree	44 Kill	Hallo
32 Five	Mangaw	45 Yes	Manee
33 Six	Torok	46 No	Nattay
34 Seven	Tarayt	47 Here	Mashee
35 Eight	Neepaw	48 There	Ada
36 Nine	Mapil	49 Above	Mataka
47 Ten	Tarraw	50 Below	Maka

In the intermediate space between *Bengal*, *Arakan*, the proper *Burma*, and the kingdom of *Munnaypura*, 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. English.</i>	<i>Koloun.</i>	<i>English.</i>	<i>Koloun.</i>
1 Sun	Konee	4 Earth	Day
2 Moon	Klow	5 Water	Tooe
3 Star	Affay	6 Fire	May

<i>English.</i>	<i>Koloun.</i>	<i>English.</i>	<i>Koloun.</i>
7 Stone	Aloong	29 Two	Palmee
8 Wind	Klee	30 Three	Patoon
9 Rain	Yoo	31 Four	Poonhee
10 Man	Kloun	32 Five	Poonho
11 Woman	Patoo	33 Six	Poofouk
12 Child	Saemee	34 Seven	Pooæfæ
13 Head	Mulloo	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	Koyawee
18 Foot	Kopaung	40 Sleep	Eitsha
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	Ashæba
24 Great	Ahlayn	46 No	Seehay
25 Little	Amee	47 Here	Næa
26 Long	Afaw	48 There	Tfooa
27 Short	Sooæhay	49 Above	Akloengung
28 One	Moo	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

are distinguished for their innocence 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	Tsaw	Sheeaw	Shaw	Shaw
4 Earth	Katchay- koo	Kolangkoo	Kako	Laukoo
5 Water	Tee	Tee	Tee	Tee
6 Fire	Mee	Meeung	Meea	Mee
7 Stone	Loe	Loong, Noong- Lung	—	Loung
8 Wind	Kallee	Lee	Lee	Lee
9 Rain	Tachoo	Tchatchang	Moko	Moko
10 Man	Paganyo	Pashaw	Pafha	Paploom or Pafha
11 Wo- man	Pomoo	Pomoo	Pumnee	Pammoe
				12 Child

<i>English.</i>	<i>Passooka.</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	Tchoobaw- lee	Tchoobaw- lee	Atsyoodoo	Tchoobaw- lee
16 Hand	Patchoo	Poitchoo	Kutshoo	Tchooafee
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	Ngeetchaw- maw	Ngee	Gyee	Gyee
23 Bad	Taw ngee- baw	Nguay	Gyeeay	Gyeeay
24 Great	Pawdoo	Hhoo	Uddo	Doo
25 Little	Tchecka	Tchei	Atfei	Atfee
26 Long	To atcho- maw	T'ho	Loeya	Ato
27 Short	P'hecko	P'hoe	Apoe	Apoe
28 One	Taydoe	Nadoe	Laydoe	Laydoe
29 Two	Kee-doe	Nee-doe	Nee-doe	Nee-doe
30 Three	So-doe	Song-doe	Soung-doe	Soung-doe
31 Four	Looee-doe	Lee-du	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	Nooee-doe	Noay-doe	Noæ-doe	Noæ-du
35 Eight	Ho-doe	Ho-doe	Ko-doe	Ko-doe
36 Nine	Kooee-doe	Kooee-doe	Kooee-doe	Kooee-doe
37 Ten	Tatchee	Leitchee	Taffee	Laytfee
38 Eat	Po,o	Aw	Ang	Ang

<i>English.</i>	<i>Passoko.</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	Latcholia	Leetalay	Rakuæ	Lakuæ
42 Sit	Tcheenaw	Tfeingaw	Tylana	Tfayna
43 Stand	Tchocto	Tchonto	Tfaynala-	Gnaythoe
			gay	
44 Kill	Klo	P'hee	Pætegui	Paythee
45 Yes	Maylee	Moayyoo	Moiyoo	Moithay
46 No	Tamaybaw	Moæ	Moi	Moi
47 Here	Loeee	Layee	Leyoo	Layee
48 There	Lubanee	Loo	Læyo	Læyo
49 Above	Mokoo	Mokoo	Læpanko	Læpanko
59 Below	Hokoo	Lankoo	Læpaula	Læpaula

To this 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 *Bagoo*; the polite name of the city among its natives having been *Dam 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 *Tai-loong*: their kingdom extends along the mouths of the two great rivers *Erawade* and *Thau-luayn*, 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	5 Water	Nawt
2 Moon	Katoo	6 Fire	Komot
3 Stars	Shawnaw	7 Stone	—
4 Earth	Toe	8 Wind	Kyeaw

<i>English.</i>	<i>Moan.</i>	<i>English.</i>	<i>Moan.</i>
9 Rain	Proay	31 Four	Pou
10 Man	Puee	32 Five	Soon
11 Woman	Preau	33 Six	Teraw
12 Child	Koon	34 Seven	Kapo
13 Head	Kadap	35 Eight	Tatsam
14 Mouth	Paun	36 Nine	Kaffee
15 Arm	Toay	37 Ten	Tfo
16 Hand	Kanna Toay	38 Eat	Tsapoung. 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	Katau
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 commooee
28 One	Mooi	50 Below	Tauamo
29 Two	Bau		
30 Three	Pooi		

These six 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,

fight, 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 inflections of words, and elisions, *euphoniæ causa*, would, perhaps, shew many more. Those that have the greatest affinity are in Tab. I. IV. and V. Mr. GILCHRIST, whose knowledge of the common dialects in use on the banks of the *Ganges* is, I believe, exceeded by that of no *European*, was so obliging as to look over these vocabularies; but he could not trace the smallest relation between the languages.

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

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

The second dialect is that spoken by the *Hindus* of *Arakan*. I procured it from a *Bráhmen* 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 *Hindustance* 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>Rooinga.</i>	<i>Rossawn.</i>	<i>Banga.</i>
1 Sun	Bel	*Sooja	Bayllee
2 Moon	Sawn	Sundfa	Satkan
3 Stars	Tara	*Nokyoto	*Tara
4 Earth	Kool	Murtika	*Matee
5 Water	Pannæ	*Dfol	*Pannæ
6 Fire	Auin	*Aaganee	Zee
7 Stone	Sheel	*Sheel	*Heel
8 Wind	Bau	*Pawun	*Bo
9 Rain	Jorail	†Biftee	*Booun
10 Man	Manush	†Moanufa	*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>Roonga.</i>	<i>Rossawn.</i>	<i>Banga.</i>
15 Arm	Bahara	*Baho	Paepoung
16 Hand	Hat	Osto	Hatkan
17 Leg	Ban	†Podo	Torooa
18 Foot	Pau	Pata	Zankan
19 Beast	--	Zoomtroo	Safee fangee
20 Bird	Paik	†Pookyee	†Pakya
21 Fish	Maws	Mootfæ	†Mas
22 Good	Goom	Gam	Hoba
23 Bad	Goom nay	Gumnay	Hoba nay
24 Great	Boddau	Dangor	Domorgo
25 Little	Thuddee	*Tfooto	Hoorooogo
26 Long	Botdean	Deengol	Deengul
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	*Paus	*Pas
33 Six	Saw	*Tfo	*Tfæ
34 Seven	Sat	*Sat	*Hat
35 Eight	Awtoa	†Afto	*Awt
36 Nine	Nonaw	*No	*No
37 Ten	Duffoa	*Dos	*Dos
38 Eat	Kau	*Kawai	†Kæk
39 Drink	Karin	Kawo	†Peek

<i>English.</i>	<i>Rooinga.</i>	<i>Rossawn.</i>	<i>Banga.</i>
40 Sleep	Layrow	†Needfara	Hooleek
41 Walk	Pawkay	Bayra	†O-teea-ootea
42 Sir	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	Etay	Erang
48 There	Horay	Horay	Orung
49 Above	Ouchalo	*Ooper	Gos
50 Below	Ayray	Hayray	†To!

NOAH SATYAVRATA

SHEM SHARMA

ATRI

ARAM ARAMA according to the Puranas, cotemporary with SOMA or Lunus in a human shape. See Essay on Egypt, p. 380 and 382.

Arama died according to the Puranas 300 years after the Flood

ICSWACU

BUDHA

Noah dies He was the Son of Satyavrata

Aila or Ailas or Pururava
Ayu
NAHUSHA
Yayati

Gopucana

Cucshi
Vicushi
Bana

Shem dies Anaranya

Puru 5

Yadu

Aila according to the Puranas lived to a very great age, and Nrapucantha is called the Son of his Old Age.

Prithu
Trisancu or Satyavrata
Dhandhumara

Janamejaya
Prachinwan
Practra
Manasyu

10
Vrajivwan
Swahi
Rishadgu
Chitraratha

FIRST

HIGH

Yucanásca
MANDHATA

Susandhi, Purucusta married the Daughter of Sasácinthu in the pedigree of Crishna

Abhayala
Sudhyumna

15
SASAVINDHU
Pritusrava
Dharma or Tama
Usaná

DINA

PRIES

Sisupala, son of Gopucana
Vasaratya
Paulica
Paushpica
Mangala

Bharata

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

Bahugava
Samyati
Ahanyati
Raudrasca
Ritetyu

20
Sitésu
Ruchaca
Parávrata

STY

of

Eber, cotemporary with Aila, dies he lived 404 years

Ansuman
Bilpa
BHAGIRATHA

Cucusha

RAGHU

Pravraddha

Calnáshyada

Sanc'hana
Sudarshana
Agnicarna
Sidhraga

Rantibhara
Sumati
Raibhi or Ailina
Dushmanta
BHARATA
Vitatha or BHARADWAJA

25
Jamodhya
Vidarbha
Cratha
Cunti
Drashti
Nirvati
Dasharha
Vyoma

of

CHANDRA

Sopascara
Soctavara
Tranabindu
Cacaréya
Sambhachyanaya
Talaruddha
Palaya
Ganapati

Manyu
Vrahateshtra
Suhotra
HASTI

Carishaya
Cshamyaya
Lé'haya
LINASU Linus

30
Jimuta
Vicrati
Bhimaratha
Navaratha

of

DWT

Bhagtéya. In him ended the family of Gopucana

Maru
Prathusca
Ambarisha

Nakusha
Yayati

Nabhaga

Aja
Dasaratha

JAMADAGNI—G AUTAMA Ahilya. His wife daughter of Mudgala

RAMA—Jamadagni, PARASU-RAMA

Támránas
Náshtránas
Blunjánas
Craunchánas
Abhayjátánas

Abhayánas
DARDA'N'A'S Dárdanus. See Essay on Egypt p. 453

Vainabritánas

Técánas
Bháhnas
Traicáyanas
Acadátánas

PARA'SARA—Satyavati—Vichitravarya
—VYA'SA—PANDU

ARJUNA

JARASANDHA

Sahadéva
Somápi
Srutasarava
Ayutáyu
Niramitra
Sucshatra

Vrahacarma
Sénajita
Srutanjaya
Yipra
Suchi
Cshénya
Suvrata
Dharma
Susrama

Dratséna
Sumati
Suvata
Sunita
Satyajita
Visvajita

Ripunjaya

Pradhyota
Palaca
Vishac'hayupa
Rájaca

Nandivardhana

Sisunaga
Cácarana
Cshémadharna
Cshatragma
Vidhisára

Jatasatru
Janaca

Ajaya
Nandivardhana
MAHA-NANDI

Sumálya

CHANDRA-GUPTA—ALEXANDER the Great

Chandra-gupta is called Sandrocottos by Athenæus, and Sandrocottos by the rest of the Historians of Alexander.

Ripunjaya—Pradhyota are positively declared in the Puranas to have been cotemporary.

Scale of Generations from SOMA to CHANDRA-DWT P.

Scale of Years before CHRIST

Scale of Kings of CHANDRA-DWT P.

Scale of Kings of CHANDRA-DWT P.

Scale of Kings of CHANDRA-DWT P.

Scale of Kings of CHANDRA-DWT P.

Scale of Kings of CHANDRA-DWT P.

Scale of Kings of CHANDRA-DWT P.

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Scale of Kings of CHANDRA-DWT P.

Scale of Kings of CHANDRA-DWT P.

Scale of Kings of CHANDRA-DWT P.

XVIII.

ON THE

CHRONOLOGY OF THE HINDUS.

BY CAPTAIN FRANCIS WILFORD.

THE accompanying genealogical table is faithfully extracted from the *VISHNU Purána*, the *BHA'GAVAT*, and other *Puránas*, without the least alteration whatever. I have collected numerous MSS. and with the assistance of some learned *Pandits* 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 *Puránas*, to have kept the holy city in total darkness, till *Matra-deva* growing angry at their insolence, they humbled themselves to the ground, and their highest peak now is not more than 500 feet high. In *Europe* similar notions once prevailed; for we are told that the *Cimmerians* were kept in continual darkness by the interposition of immensely high mountains. In the *CA'LICA Purána*, it is said that the mountains have sunk considerably, so that the highest is not above one *yojana*, or five miles high.

When

When the *Puranics* speak of the kings of ancient times, they are equally extravagant. According to them, king YUDHISHTHIR 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 six thousand, or even five thousand 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 the *Hindus*. We are well acquainted with the pretensions of the *Egyptians* and *Chaldeans* to antiquity. This they never attempted to conceal. It is

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 inquiries 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 ALMAMUN, and lived at his court at *Balac* or *Balkh*, had made the *Hindu* antiquities his particular study. He was also a famous astronomer and astrologer, and had made inquiries 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 *Hejira* 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 *Hejira*; and the 3725 years are reckoned from the beginning of the *Cali-yug* to the *Hejira*. 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

* See *Bailly's Astron. Anc.* p. 30. and Mr. *Davis's Essay* in the second volume of the *Asiatick Researches*, p. 274.

in the time of *AKBAR*. Indeed, I am sometimes tempted to believe, from some particular passages in the *Puránas*, which are related in the true historical style, that the *Hindus* have destroyed, or at least designedly consigned to oblivion, all genuine records, as militating against their favourite system. In this manner the *Romans* destroyed the books of *NUMA*, and consigned to oblivion the historical books of the *ETRURIANS*, and I suspect also those of the *TURDETANI* in *Spain*.

The *Puránas* 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 among the learned *Pandits*, some insisting that these religious rites ought to be performed on the 27th of *Bhádra*, as directed in the *Puránas*, whilst others insist, it should be at the time of the *udáya*, or appearance of *Canopus*; a great deal of paper has been wasted on this subject, and from what has been written upon it, I have extracted the above observations. 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 *Hindu* chronology presents us with a series

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 *Manwantara*. Every Dynasty ends with a total destruction of the human race, except the *Menu* or ruler of the next period, who makes his escape in a boat, with the seven *Rishis*. The same events take place; the same persons, though sometimes 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 BRA'MADICAS* 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 *MANICHI*, *ATRI*, *ANGIRAS*, *PULASTYA*, *PULAHA*, *CKITU*, *DACSHA*, *VASISHTHA*, *BURIGU*, and *NARADA*. These sprang immediately from *BRAHMA*,

MA, 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 *Brahmádicas*. In the *Bhágavat* it is declared that they were ten; but in other *Puránas* they reckon nine; whilst in the *Scanda-purána* it is declared that there were only seven *Brahmádicas*, whose names are MARICHI, ATRI, ANGIRÁ'SA, PULASTYA, PULÁ'HA, CRITA, and VOSISHTA; nor are there wanting authorities to reduce them to three, namely, the three sons of SWAYAMBHÚVA, who was BRAHMA himself in a human shape.

It is declared that the seven MENUS, who have made their appearance, sprang from the *Bruhádicas*: their names are, SWAYAMBHÚVA, SWA'ROCHISHA, UTTAMA, TA'MASA, RAIVATA, CHACSHUSA, and SATYAVRATA OF NOAH.

The seven RĪSHIS sprang immediately from BRA'HMA, 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 *Brahmádica* and a *Rĭshi*; and, perhaps, the seven *Menus*, the seven *Brahmádicas*, with the seven *Rĭshis*, are the same, and make only seven individual persons. The seven *Brahmádicas* 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 *Rĭshis* 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 *Brahmádicas* or children of *Bráhma*, 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 become *Rishis*. *Swayambhuva*, 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 *Bráhma* 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 *Swayambhuva*, who is the first *Menu*: they call him *Adima*, (or the first, or *Protogonus*;) he is the first of men, and *Paramapurusha*, or the first male. His help-meet *Pricriti* is called also *Satarupa*: she is *Adima* (2) or the first: she is *Visvajenni*, 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 *Bráhma* in human shape, or the first *Bráhma*: for *Bráhma* is man individually, and also collectively, mankind; hence *Bráhma* 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 *Cali-yug*, according to the *Puránas*: at the end of the world, *Bráhma* 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 *Bráhma-rupi Javardana*, or the *Vishnu* with the countenance of *Bráhma*. 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 *Bráhma* being elap-

(2) *Adima* is the feminine gender from *Adima* or *Adimas*.

sed; and of the remainder the first *calpa* is begun. These five great *calpas* include 500 years of *Bráhma*, 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 *Manwantára* is in great measure a partial one, some few high peaks and some privileged places, as *Benares*, being excepted; the peaks remaining above the waters, and *Benares* and other privileged places being surrounded by the waters as with a circular wall.

These five *calpas* have five deities, who rule by turns, and from whom the *calpas* are denominated. These five deities are, *Dévi*, *Surya* or the Sun, *Ganésa*, *Vishnu*, and *Íswara*. *Bráhma* 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 *Cála*, *Chronus*, or *Time*. This is now the *calpa* of *Vishnu*, who, to create, thought on *Bráhma*, and became *Bráhma-rupi-Janardana*. He preserves and fosters the whole creation in his own character; and will ultimately destroy it through *Íswara* or *Rudra*. The *calpa* of *Vishnu* is called also the *Pudma* or *Lotos period*. It is declared in the *Puránas* 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 potion administered to him by *Metis*; and of *Chronus* castrating his own father. According to this, *Swayambhuwa*

is conjointly and individually, *Bráhma*, *Vishnu*, and *Isá* or *Maha-deva*. To *Swayambhuva* were born three daughters, *Acuti*, *Devá-fruti*, and *Visfruti* or *Prasuti*. *Bráhma* created three great *Rajapátis*, to be their husbands; *Cardama*, *Dacsha*, (the same who was also a *Bráhmadica*;) and *Ruchi*. *Cardama* is acknowledged to be a form of *Siva*, or *Siva* himself: and *Dacsha* to be *Bráhma*; hence he is often called *Dacsha Bráhma*; and we may reasonably conclude that the benevolent *Ruchi* was equally a form of *Vishnu*. It is said in the *Védas*, as I am assured by learned *Pundits*, that these three gods sprang in a mortal shape from the body of *Adima*; that *Dacsha Bráhma* issued mystically from his navel, *Vishnu* from his left, and *Siva* from his right side. It is declared in the *Puránas*, that *Iswára* cut off one of the heads of *Bráhma*, 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 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 towards 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 *Puránas* that from *Cardamo*, *Dacsha*, and *Ruchi*, the earth was filled with inhabitants: yet in the same *Puránas* we are told, that *Bráhma*, 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'NAPA'DA, who appear to be the same with CARDAMA and RUCHI. Here the antediluvian history assumes a different shape; and the *Puránics*, abandoning their idle tales of the seven *Menus* and renovations of the world, between the time of SWAYAMBHUVA and the flood of SATYAVRATA, present us with something more consistent with reason and historical truth; but which at once overthrows their extravagant fabric. PRIYAVRATA was the first born of ADIMA; and the particulars recorded of his progeny have no small affinity with the generations exhibited by SANCHONIA-THO, as will appear from the following comparative Table:

- | | |
|---|---|
| I. ADIMA, and ADIMA or I'VA. | I. PROTOGONUS, synonymous with ADIM: AION or AEON from I'VA or I'VAM, in the second case. |
| II. PRIYAVRATA. He married BARHISMATI, the daughter of VISVACARMA, the chief engineer of the Gods. | II. GENUS, GENEÆ. |
| III. AGNIDARA 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, AGNI-DHRA had nine sons, who gave their names to the mountainous tracts of <i>Nabhi</i> . | III. PHOS, PHUR, PHLOX; that is, light, fire, and flame. |
| | IV. CIMPURUSA, |

- IV. CIMPURUSHA, HARI-VARSHA, ILA'VARTA, RA'MA'NACA, CURU, BHADRASVA, CE'TUMA'LA, and HIRANMAYA. IV. They begat sons of vast bulk, whose names were given to the mountains on which they seized, viz. *Cassius, Libanus, Anti-Libanus, Brathys.*
- V. RĪSHABĀHA, son of NĀBAHI. V. MEMRUMUS, HYPURANIUS, and USOUS.
- VI. BHARATA, who gave his name to the country of *Bharata-varsha.* VI. AGREES, HALIEUS.
- VII. SUMARTI, DHUMRA-CE'TU, whose name signifies a fiery meteor. VII. CHRYSAOR.
- VIII. DEVAJITA { said by some to be brothers. The names of the two last imply beating, hammering, &c
9. PRATIHARA
10. PRATIHATA
- VIII. TECHNITES, GENUS, AUTOCHTON.
- IX. AJA and BHUMA'NA. IX. AGROWERUS, or AGROTES. AJA in *Sanscrit*, is synonymous nearly with *Autochton*, and BHU'MANA answers to *Agrowerus* and *Agrotes.*
- Then follows a list of sixteen names, supposed by some to be so many generations in a direct line; by others, this is denied: but as nothing is recorded of them, they are omitted.

The posterity of ADIMA or ADIM (for the letter A in this name has exactly the sound of the *French e* in the word *j'aime*) through UTTA'NAPA'DA, is as follows:

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

II. UTTA'NAPA'DA. He had two wives, SURUCHI and SURUTI: by the first he had UTTAMA, and by the second DHRUVA. *Uttānapāda* 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 *Enoch* 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 *Enoch* and *Enos* are confounded together. *Uttama*, whose education had been neglected, gave himself up to pleasure and dissipation. Whilst hunting he happened to quarrel with the *Cuveras*, and was killed in the fray. *Dhruva*, at the head of a numerous army, took the field to revenge the death of his brother: many had fallen on both sides, when *Swayambhuva* or *Adim* interposed, and a lasting peace was concluded between the contending parties.

III. DHRUVA,

- 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 SWACATAI, had six sons, the eldest of whom was called PUSHPA'RNA.
- V. PUSHPA'RNA had by his wife DOSHA three sons, and by NAD'WALA, CHACSHUSHA, who became a *Menu*.
- VI. CHACSHUSHA 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 BRA'HMENS; 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 necessaries 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 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 BRĪHMA 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; HURYAASHA ruled over *Prachi*, or the east, and built the town of *Rājgriha*. now *Rāj-mehal*; DHUMRACE'SHA, who ruled in the south, as VRIČA did in the west, and DRAVINĀ'SA in the north.

XII. VĪ'SITASWA

XII. VISITASWA had by one of his wives three sons, called PAVACA, PAVAMANA, and SUCHI, all names of fire. He became *Antardhana* 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 HAVIRDHANA. HAVIRDHANA married HAVIRDHANI, by whom he had six children, known by the general appellation, of *Prachina-barhi*.

XIII. VARISHADA, the eldest of them, married SATADRUTI, the daughter of OCEANUS, and had by her two 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 towards the west, where they beheld the translation of DHRUVA into heaven. And here ends the line of UTTA'NAPA'DA, which I now exhibit at one view, with some variations.

- I. SWAYAMBHUVU OF ADIM.
- II. UTTA'NAPA'DA, who was probably the same with RUCHI.
- III. DHRUVA, eminent for his piety.
- IV. VATSARA.
- V. PUSHPARNA, called also RIPUNJAYA.
- VI. CHACSHUSHA, MENU.
- VII. ULMACA OF URU.
- VIII. ANGA.
- IX. VENU.
- X. PRITHU, supposed to be NOAH.
- XI. VIGITASVA.

- XII. HAVIRDHANA. SWAYAMBHUYA dies,
 XIII. VARISHADA.
 XIV. The ten PRA'CHETA'S. DHRUVA is translated
 into heaven.

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

The only material difficulty in supposing *Prithu* 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 sons were born, it is hardly credible that he should have had no children till that advanced age. The *Puránics* insist, that *Satyavrata* had many before the Flood, but that they perished with the rest of mankind, and that SHARMA OR SHAMA, CHARMA, and JYAPATI, 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 Manus* compared with the two lines descended from ADIM and I'VA.

SWAYAMBHUYA OF ADIMA.

I. MENU.

- | | |
|---|-----------------|
| 2 PRIYAVRATA. — | 2 UTTA'NAPA'DA. |
| 3 AGNIDHRA, supposed the
same with SWAROCHISA. | 3 DHRUVA. |

II. MENU.

- | | |
|----------|------------|
| 4 NABHI. | 4 VATSARA. |
|----------|------------|

—UTTAMA.

- | | |
|--------------|--------------|
| 5 RISSHABHA. | 5 PUSHPARNA. |
|--------------|--------------|

- | | |
|------------|--------------|
| 6 BHARATA. | 6 CHACSHUSA. |
|------------|--------------|

IV. MENU.

- | | |
|-----------|-----------|
| 7 SUMATI. | 7 ULMAGA. |
|-----------|-----------|

—RAIVATA.

- | | |
|-------------|---------|
| 8 DEVAJITA. | 8 ANGA. |
|-------------|---------|

- | | |
|--------|---------|
| 9 AJA. | 9 VENA. |
|--------|---------|

CHACSHUSA. —

VI. MENU.

- | | |
|---------------|------------|
| NOAH'S Flood. | 10 PRĪTHU. |
|---------------|------------|

SATYAVRATA. —

VII. MENU.

This table completely overthrows the system of the *Menwantaras*, previous to the Flood; for it is declared in the *Purānas*, that at the end of every *Menwantara*,

wantara, the whole human race is destroyed, except one *Menu*, who makes his escape in a boat with the seven *Rishis*. But, according to the present table, *Swayambhuva* went through every *Menwantara* and died in the sixth; *Dhruva* also 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 *Rishis*, he must have taken with him his two brothers, with *Dhruva* and *Swayambhuva*. Of these *Menus* little more is recorded in the *Puranas*, than that they had a numerous offspring; that certain *Devalas* made their appearance; and that they discomfited the giants. The mortal father of *Swarochisa* is not known. His divine father was *Agni*; hence, he is supposed by some to be the same with *Agnidhra*.

During the reign of the fourth *Menu*, occurred the famous war between the *elephants* and the *crocodiles*, which, in the *Puranas*, is asserted to have happened in the *sacred isles* in the west. What was the origin of it we are not told; but whenever the *elephants* went to a lake, either to drink or to bathe, the *crocodiles* lying in wait, dragged them into the water and devoured them. The *Gujindra* or *Nag'nath*, the lord of the *elephants*, was once attacked by the chief of the *grahas* or *crocodiles* on the bank of a lake, in one of the *sacred isles* called *Suvarneya*; a dreadful conflict took place, and the *Nag'nath* 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 *Ychain-bannawg* or great *ox* endeavours to pull out of the water the *aranc* or *beaver*, are often heard.

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 *Cynri* 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'nâhhâ sthan*, or the place of the *nag'nâth*, or lord of the elephantine race, is well known to the antiquaries of *Juvernia*.

During the sixth *dynasty* came to pass the famous *churning of the ocean*, which is positively declared in the *Purâna* 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* *fweta-dwip* or *chira-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 *Purânics*; but the truth is, that the *Védas* were not originally made known to mankind in *India*. The *Bráhmens* themselves acknowledge that they are not natives of *India*, but that they descended into the plains of *Hindustan* through the pass of *Heridwar*.

The old continent is well described in the *Purânas*, but more particularly the countries in which the *Védas* 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

nutely described than any other country. *Atri* called *Edris*, and *Idris*, in the countries to the west of *India*, carried the *Védas* from the abode of the gods on the summit of *Meru*, first, to the *sacred isle*; 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'han*, the *place or seat of Atri or Idris*. It is often mentioned in the *Puránas*, and described to be on a high mountain, not far from the seashore.

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; that in the *cali-yug*, or present age, men live only one hundred years. This may serve to fix the period and duration of the first ages; for it is obvious, that the whole passage refers to natural years.

I shall now conclude this account of *antediluvian* history by observing, that the first descendants of *Swayambhuva* are represented in the *Puránas*, as living in the mountains to the north of *India* toward the sources of the *Ganges*, and downwards as far as *Serinágara* 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 *Puránas* make frequent mention of the oppressed repairing thither for redress. *India*, at that time, seems to have been perfectly insulated; and we know, that

* *Institutes of Menu*, p. 11.

from the mouth of the *Indus* to *Dehli*, 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 grandson 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 *Védas* known to mankind, had three sons; or, as it is declared in the *Puránas*, 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 *Bráhma*. 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 *Višnu*, was called *Datta* or *Date* and *Dattátréya*. The countries bordering on the *Nile*, fell to his share. He is the *Toth* of the *Egyptians*.

The third was a choleric saint called *Durvásás*. He was a portion of *Mahádéva*, 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 *Cusha-dwipa* destroyed all the animals and vegetables. *Arama*, the son of a son of *Satyavrata* (and consequently the *Aram* of Scripture) who was hunting through

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 *Durvásís* with an arrow. The death of *Arama* happened three hundred years after the Flood, according to the *Puránas**, as noticed in a former essay on *Egypt*.

Chandra-Gupta, or he who was saved by the interposition of *Lunus* or the *Moon*, is called also *Chandra* in a poem quoted by SIR WILLIAM JONES. The *Greeks* call him *Sandracuptos*, *Sandracottos*, and *Androcottos*. *Sandrocottos* 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 *Somadeva*, and a tragedy called the coronation of *Chandra* or *Chandra-Gupta*†, discovered that he really was the *Indian* king mentioned by the historians of *Alexander*, under the name of *Sandracottos*. These two poems I have not been able to procure; but, I have found another dramatic piece, intitled *Mudra-Rácshasa*, or the seal of *Kácshasa*, which is divided into two parts: the first may be called the coronation of *Chandra-Gupta*, and the second the reconciliation of *Chandra-Gupta* with *Mantri-Rácshasa*, the prime minister of his father.

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

* Essay on *Egypt*, in the *Asiat. Res.* vol. III. p. 38.

† *Asiatick Researches*, vol. IV. p. 6, 11.

In the *Viṣṇu-purāna* we read, “unto *Nanda* shall be born nine sons; *Cotilya*, his minister shall destroy them, and place *Chandra-Gupta* on the throne.”

In the *Bhagawat* we read, “from the womb of *Su-āri*, *Nanda* shall be born. His eldest son will be called *Sumalya*, and he shall have eight sons more; these, a *Brāhmen* (called *Cotilya*, *Vatsayana*, and *Chanacya* in the commentary) shall destroy, after them a *Maurya* shall reign in the *Cali-yug*. This *Brāhmen* will place *Chandra-Gupta* on the throne.” In the *Brahmcattha* it is said, that this revolution was effected in seven days, and the nine children of *Nanda* put to death. In the *Camandaca*, *Chanacyas* is called *Viṣṇu-Gupta*. The following is an abstract of the history of *Chandra-Gupta* from the *Mudra-Rācshasa* :

Nanda, king of *Prachi*, was the son of *Maha Nandi*, by a female slave of the *Sudra* tribe: hence *Nanda* was called a *Sudra*. He was a good king, just and equitable, and paid due respect to the *Brāhmens*: he was avaricious, but he respected his subjects. He was originally king of *Magada*, now called *South-Bahar*, which had been in the possession of his ancestors since the days of *Crīṣhna*; 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 *Sumalyadicas*, from the eldest, whose name was *Sumalya* (though in the dramas, 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,

vived, to the great joy of his subjects; but his senses appeared to be greatly deranged, for he no longer spoke or acted as before. While some ascribed the monarch's imbecility to the effects of a certain poison, which is known to impair the faculties at least, when it proves too weak to destroy the life of those to whom it is administered; *Mantri-Rácshasa*, his prime minister, was firmly persuaded, according to a notion very prevalent among the *Hindus*, that upon his master's death, some magician had entered into the lifeless corpse, which was now re-animated and actuated by his presence. He, therefore, secretly ordered, that strict search might be made for the magician's own body; for, as according to the tenets of their superstition, this would necessarily be rendered invisible, 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-das*, 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 *Yavanas* or *Greeks*, who had dispossessed him of his kingdom, had assumed, with the garb of a penitent, the name of *Suvid'ha*. *Mantri-Rácshasa* having thus punished the magician for his presumption, left the country.

When *Nanda* recovered from his illness he became a tyrant; or rather, having entrusted *Sacatará*, 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 being

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 *Patalcandra*, 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 *Vacranara*, one of the secretaries of state, placed *Ugradhanwa*, one of the younger sons of *Nanda*, on the throne.

The young king being dissatisfied with *Sacatara's* account of his father's disappearance, set about farther inquiries during the minister's absence; but these proving 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 *Patalcandra*. *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 *Bráhmén* to assist at the *fraddha* he was going to perform, in honour of his ancestor,

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 *Parvátéswara*, 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. *Parvátéswara* 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 *Yavans* or *Greeks*, the *Sacas* or *Indo-Scythians*, the people of *Camboja* or *Gayni*, the *Ciratas* or inhabitants of the mountains to the eastward of *Népal*, 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 *Sumalyadicas*, and that a decent allowance should be given to the *Mauryas* or children of *Mura*, but the *Sumalyadicas* 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.

Parvátéswara

Parvâteswara took the field with a formidable army, accompanied by his brother *Virochana* and his own son *Malaya-Cetu*. The confederates soon came in sight of the capital of the king of *Prachi*, who put himself at the head of his forces, and went out to meet them. A battle was fought, wherein *Ugradhanwa* was defeated, after a dreadful carnage, in which he himself lost his life. The city was immediately surrounded, and *Sawartha-Siddhi*, the governor, seeing it impossible to hold out against so powerful an enemy, fled to the *Vindhyan* mountains, and became an anchorite. *Racshasa* went over to *Parvâteswara**. *Chandra-Gupta*, being firmly established on the throne, destroyed the *Sumalyadicas*, and dismissed the allies, after having liberally rewarded them for their assistance: but he kept the *Yavans* or *Greeks*, and refused to give the half of the kingdom of *Prachi* to *Parvâteswara*, who, being unable to enforce his claim, returned to his own country meditating vengeance. By the advice of *Racshasa* he sent a person to destroy *Chandra-Gupta*; but *Vishnu-Gupta*, suspecting the design, not only rendered it abortive, but turned it back upon the author, by gaining over the assassin to his interest, whom he engaged to murder *Parvâteswara*, which the villain accordingly effected. *Racshasa* urged *Mataya-Cetu* to revenge his father's death, but though pleased with the suggestion, he declined the enterprize, representing to his counsellor, that *Chandra-Gupta* had a large body of *Yavans* or *Greeks* in his pay, had fortified his capital, and placed a numerous garrison in it, with guards of *elephants* at all the gates; and finally, by the defection of their allies, who were either overawed 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,

* *Racshasa* on hearing of the death of *Sacatara* returned, and became prime minister of *Ugradhanwa*.

In the mean time *Vishnu-Gupta*, being conscious that *Chandra-Gupta* could never be safe so long as he had to contend with a man of *Racshasa'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-Das*, an intimate friend of *Racshasa*. *Vishnu-Gupta* advised *Chandra-Gupta* to confine him with his whole family: some time after he visited the unfortunate prisoner, and told him that the only way to save himself and family from eminent destruction, was to effect a reconciliation between the king and *Racshasa*, and that, if he would follow his advice, he would point out to him the means of doing it. *Chandana-Das* assented, though, from the known inveteracy of *Racshasa* against *Chandra-Gupta*, he had little hope of success. Accordingly, he and *Vishnu-Gupta*, betook themselves privately to a place in the northern hills, where *Racshasa* 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. *Racshasa* was astonished when he heard of his friends' resolution, and used every endeavour to dissuade them from it; but *Chandana-Das* told him, he was determined to perish in the flames with *Vishnu-Gupta*, unless he would consent to be reconciled to *Chandra-Gupta*. In the mean time the prince arrived with a retinue of five hundred men; when, ordering them to remain behind, he advanced alone towards *Racshasa*, to whom he bowed respectfully and made an offer of delivering up his sword. *Racshasa* remained a long time inexorable, but at last, overcome by the joint entreaties of *Vishnu-Gupta* and *Chandana-Das*, he suffered himself to be appeased, and was reconciled to the king, who made him his prime minister. *Vishnu-Gupta*, having succeeded in bringing about this reconciliation, withdrew to resume his former occupations; and *Chandra-Gupta* reigned afterwards many years, with justice and equity, and adored by his subjects.

By *Prachi* (in Sanscrit) or the east, is understood all the country from *Allahabad* 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 *Prachi* is obviously derived the name of *Prasi*, which the Greeks gave to the inhabitants of this country. It is divided into two parts: the first comprehends all the country from *Allahabad* to *Raj-mehal* and the western branch of the *Ganges*; the second includes *Bengal*, the greatest part of which is known in Sanscrit under the name of *Gancara-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 *Durva* 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 *Prachi* proper, or the western part of it, is declared to be *Ráj-griha*, or the royal mansion. According to the *Puránas* it was built by a son of king *Prithu*, called *Haryacsha*. It was taken afterwards by *Bala-Rama*, the brother of *Crishna*, who rebuilt it, and assigned it as a residence for one of his sons, who are called in general *Baliputras*, 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 *Bali-putra*, because a *putra*, or son of *Bali*, resided in it. From *Bali-putra* the Greeks made *Palipatra* and *Palibothra*, and the

* Vol. III. p. 264.

inhabitants of the country, of which it was the capital, they denominated *Palibothri*; 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 worshipped by the *Suraseni*. Their chief cities were *Methora* and *Clisobora*: the first is now called *Mutra*(*), the other *Mugu-nagur* 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-Roma*. 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 in *Benares*, it is pronounced exactly like the French *e* in the pronouns *je, me, le, &c.* thus the difference between *Balas* and *Belus* is not very great. As *Bala* sprung from *Vishnu*, or *Heri*, he is certainly *Heri-cula, Heri-culas, and 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 *Mathura*.

In the *Ganga-mahatmya*, in which all places of worship, and others of note, on the banks of the *Ganges*, are mentioned, the present town of *Raj-mehal* is positively declared to be the ancient city of *Raj-griha* of the *Puránas*, the capital of *Prachi*, which afterwards was called *Bali-putra*,

Raj-griha and *Raj-mehal*, in *Persian*, signify the same thing. It is also called by the natives *Raj-mandalam*; and by *Ptolemy*, *Palibothra-mandalon* for *Bali-putra-mandalam*: the first signifies the royal mansion, and the second the mansion of the *Bala-putras*. In a more extensive sense *mandalam* signifies the circle, or country belonging to the *Bali-putras*. In this sense we say *Coro-mandel*, for *Cholo* or rather *Jala-mandal*.

Here I must observe, the present *Raj-mehal* is not precisely on the spot where the ancient *Raj-griha*, or *Bali-putra*, stood, owing to the strange devastation 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 *Raj-mehal* in January last, I was desirous of making particular inquiries 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 *Raj-mehal*, or *Raj-mandal*, was an immense city; that it extended as far as the eastern limits of *Boglipoore* towards *Terriagully*, but that the *Ganges*, which formerly ran a great way towards the N. E. and East, had swallowed it up; and that the present *Raj-mehal*, formerly a suburb of the ancient city, was all that remained of that famous place. For farther particulars they referred me to learned *Pundits* who unfortunately lived in the interior parts of the country.

In the *Mudrá-rácshasa* it is declared, that the city in which *Chandra-Gupta* resided, was to the north of the hills, and, from some particular circumstances that will be noticed hereafter, it appears that they could not be above five or six miles distant from it. *Megasthenes* informs us also, that this famous city was situated near the confluence of the *Erannoboas* with the *Ganges*. The *Erannoboas* has been supposed to be the *Sone*, which has the epithet of *Hirán-ya-baha*, 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 *Hirán-ya-baha*, from which the Greeks made *Errannoboas*, is not a proper name, but an *appellative* (as the Greek *Chryso-rhoas*), 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 *Cossoanus* of *Arrian*, or *Cossoagus* of *Pliny*, is not the river *Coosy*, but the *Cossánor Cattan*, called also *Cossay*, *Cossar*, and *Cassay*, which runs through the province of *Midnapoor*, and joins the remains of the western branch of the *Ganges* below *Nanga-Cuffan*.

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 *Puranah-bahah* the old *Coosy*, or *the old channel*. It is well delineated in Major *RENELL*'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 direction. From these facts, supported

ported by a close inspection of the country, I am of opinion, *Baliputra* was situated near the confluence of the old Coosy with the Ganges, and on the spot where the villages of *Mynyaree* and *Biffuntpoor-gola* now stand; the Ganges proceeding at that time in an easterly direction from *Nabob-gunge*, and to the north of these villages. The fortified part of *Palibothra*, according to *Megasthenes*, extended about ten miles in length, while the breadth was only two. But the suburbs, which extended along the banks of the Ganges, were, I doubt not, ten or fifteen miles in length. Thus *Dehli*, whilst in a flourishing state, extended above thirty miles along the banks of the *Jumna*, but, except about the centre of the town, consisted properly of only a single street, parallel to the river.

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

*Strabo**, who cites *Artemidorus*, says, that the Ganges on its entering the plains of India, runs in a south direction as far as a town called *Ganges*, (*Ganga-puri*), now *Allahabad*, 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 *Baliputra*, answers to this description of *Artemidorus*.

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

* B. XV. p. 719.

from the confluence of the Jumna with the Ganges. Here it is necessary to premise, that *Megasthenes* says the highways in India were measured, and that at the end of a *certain Indian measure* (which is not named, but it 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 *Bráhmēni*, 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 *Panjabi-cofs*: thus, the distance from *Lahor* to *Multan* is reckoned, to this day, to be 145 *Panjabi*, or 90 *common* cofs.

In order to ascertain the number of *Bráhmēni* 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 *Bráhmēni* 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 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 *Ingellee* 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,

Tuso, now the *Tonse*, (See Major *Rennel's* course of the Ganges.)

Cindia, now *Conteeah*.

Sagala (in Sanscrit *Suchela*, but in the vulgar dialects *Sokheila*) now *Vindya Vafni* near *Mirzapoor*.

Sanbalaca, in Sanscrit *Sammalaca*. It is now called *Sumbulpoor*, and is situated in an island opposite to *Patna*. It is called *Sabelpoor* in Major *Rennel'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 *Sammalaca* imports) performed there every year in honour of certain heroes of antiquity. During the celebration of these games, *Sammalaca* was frequented by a prodigious concourse of merchants, and all sorts of people, inasmuch that it was considered as the greatest fair in the country. This place is mentioned in the *Hari-shetra Maha-tmya*, which contains a description of the principal places of worship in North *Bahar*.

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

Sigala, *Mongier*. In *Ptolemy's* time it was situated at the junction of the river *Fulgo* with the Ganges, which he derives from the mountains of *Uxentus*, as that word probably is, from *Echac-dés* or country of *Echac*, or, as it is written in the maps *Etchawk*: there are five or six places of this name in the mountain of *Ramgur*. The river *Fulgo* is the *Cacuthis* of *Arrian*, so called from its running through the country of *Cicata*. According to the same author, the *Andomatis* or *Dummoody* had its source in the same mountains.

The

The Ganges formerly ran almost in a direct line from Borounka to Monghier, the Fulgo uniting with it near this place; but since the river taking a southerly course, has made great encroachments upon the northern boundary of Monghier, which stretched out a considerable distance in that direction to a hill of a conical shape, which the stream has totally washed away. This fact is ascertained on the evidence of several Hindu sacred books, particularly of the *Gangamahatmya*; for, at the time this was written, one half of the hill still remained. *Sigala* appears to be corrupted from the Sanscrit *Sirhala*, a plough. At the birth of CHRISHNA a sheet of fire, like the garments of the gods, appeared above the place called Vin-dhyavafni, near Mizapoor. This appearance is called *Suchela*, or, in the vulgar dialects, *Sukhela* or *Sukhaila*, from which the Greeks made *Sagala*. This fiery meteor forced its way through the earth, and re-appeared near Monghier, tearing and furrowing up the ground like a plough, or *sirhala*. The place where it re-appeared is near Monghier, and there is a cave formed by lightning sacred to *Devi*.

Palibothra. Near the confluence of the old Coofy with the Ganges.

Astha-Gura, now *Jetta-gurry*, or *Jetta-coory*, in the inland parts of the country and at the entrance of a famous pass through the Raj-mehal hills.

Corygasmus, near Palibothra, and below it, is derived from the Sanscrit *Gauri-Goschi*, or the wilderness of *Gauri*, a form of *Devi*. The famous town of Gaur derives its name from it. It is called by *Nonnus* in his *Dionysiacs* *Gagus* for *Goscha*, or the *Goscha* by excellence. He says it was surrounded with a net-work, and that it was a journey of two days in circumference. This sort of inclosure is still practised in the eastern

eastern parts of *India*, to prevent cattle from straying, or being molested by tigers and other ferocious animals. The kings of *Persia* surround their Haram, when encamped, with a net-work; and formerly, the *Persians* when besieging a town, used to form a line of contravallation with nets. The northern part only, towards *Cotwally*, was inhabited at that early period.

Tondota, *Tanda-haut* (*haut* is a market). This name, in different MSS. of *Ptolemy*, is variously written, for we read also, *Condota* and *Sondota*: and unfortunately, these three readings are true *Hindu* names of places, for we have *Sanda-haut*, and *Cûnda-haut*. However, *Tanda-haut*, or in *Sanscrit*, *Tandâ-haut* appears to be *Tandâ*, formerly a market place, called also *Tanrah*, *Tarrah*, *Tardah*, and *Tanda*. It is situated near the southern extremity of the high grounds of *Gaur*, on the banks of the old bed of the *Ganges*.

Tamalites, *Samal-haut*. No longer a *Hât*, but simply *Samal-poore*. *Tamal-hat* is not a *Hindu* name, and, I suppose here, a mistake of the transcriber. It is between *Downapoor* and *Sooty*. (See *Rennel's* map.) The *Ganges* ran formerly close to these three places; and Mr. *Bernier*, in his way from *Benâres* to *Coffimbazar*, landed at *Downapoor*.

Elydna is probably *Laudannah*.

Cartinaga, the capital of the *Cocconagæ*, or rather *Cottonaga*, is called now *Cuttunga*, it is near *Soory*; the *Portuguese*, last century, called it *Cartunga* and *Catrunga*.

Cartifina, now *Carjuna*, or *Cajwana*, is near *Beudwan*. I shall just observe here, that the three last mentioned towns are erroneously placed, in *Mercator's* map, on the banks of the *Ganges*. *Ptolemy* says no such thing.

The next place on the banks of the *Ganges* is

Oreophonta.

Oreophonta. *Hararpunt* or *Haryárpunt* in the vulgar dialects; in Sanscrit it is *Hararparna* from *Hara* and *Arpana*, which implies a piece of ground consecrated to *Hara* or *Mahá-deva*. The word *Arpana* 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 *Mahá-deva* 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 Phallus 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 *Agardwip*. A few miles above *Aga-nagara*, was the city called *Catadupe* by *Arrian* from *Catwadwip*, a place famous in the *Puránas*. It is now called *Catwa*.

Ganges-regia, now *Satgaww*, 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 *Satgaww*, I believe it should be *Sátgaww* or the *seven villages*, because there were so many censured to the *Seven Rishis*, and each of them had one appropriated to his own use.

Palura, now *Palorah*, or *Pollerah*, 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-bapan*, fell into the sea towards *Ingellee*. From *Nagam-basan* the western branch of the Ganges

was

was denominated *Cambufon Ostium* by the Greeks. This place is now ridiculoufly called *Nangabaffan*, or the naked abode; whereas its true name is *Naga-baffan*, or the abode of fnakes, with which the country abounds.

Sir WILLIAM JONES fays, “ the only difficulty in deciding the fituation of Palibothra to be the fame as Patali-putra, to which the names and moft circumftances nearly correpond, arofe from hence, that the latter place extended from the confluence of the Sone and the Ganges to the fite of Patna, whereas Palibothra flood at the junction of the Ganges and the Erannoboas; but this difficulty has been removed, by finding in a claffical Sanscrit book, near two thoufand years old, that Hiranyabahee, or golden armed, which the Greeks changed into Erannoboas, or the river with a lovely murmur, was, in fact, another name for the Sona itfelf, though *Megafthenes*, from ignorance or inattention, has named them feparately.” *Vide Afatic Researches, vol. IV. p. 11.*

But this explanation will not be found fufficient to folve the difficulty, if Hiranyabaha be, as I conceive it is not, the proper name of a river; but an appellative, from an accident common to many rivers.

Patali-putra was certainly the capital, and the refidence of the kings of Magadha or fouth Behar. In the *Mudra Rácshafa*, of which I have related the argument, the capital city of *Chandra-Gupta* is called Cufumapoor throughout the piece, except in one paffage, where it feems to be confounded with Patali-putra, as if they were different names for the fame place. In the paffage alluded to, *Rácshafa* asks one of his meffengers, “ If he had been at Cufumapoor?” the man replies, “ Yes, I have been at Patali-putra.” But
Sumapon,

Sumapon, or Phulwaree, 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 *Annanta*, the author of the *Mudra-Râcshasa* says, the abode of *Chandra-Gupta* was. It may be offered in excuse, for such blunders as these, that the authors of this, and the other poems and plays I have mentioned, written on the subject of *Chandra-Gupta*, which are certainly modern productions, were foreigners; inhabitants, if not natives, of the Decan; at least *Annanta* was, for he declares that he lived on the banks of the Godaveri.

But though the foregoing considerations must place the authority of these writers far below the ancients, whom I have cited for the purpose of determining the situation of Palibothra; yet, if we consider the scene of action, in connexion with the incidents of the story, in the *Mudra-Râcshasa*, it will afford us clear evidence, that the city of *Chandra-Gupta* could not have stood on the site of Patna; and, a pretty strong presumption also, that its real situation was where I have placed it, that is to say, at no great distance from where Rajé-mehal 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 Patalcandra, to quench his thirst, his murder there, and the subsequent return of the assassins 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

the same day. These events are natural and probable, if the city of *Chandra-Gupta* was on the site of Rajemahal, 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, *Patalcandara*, 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 Rajemahal with the reservoir of *Patalcandara*, as described in the poem, have very much the appearance of a 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 *Patali-putra* and *Bali-putra*, appears to me not difficult to be accounted for. While the sovereignty of the kings of Maghadha, or south Bahar, was exercised within the limits of their hereditary dominions, the seat of their government was *Patali-putra*, or *Patya*: but *Janasandha*, one of the ancestors of *Chandra-Gupta*, having subdued the whole of Prachi, as we read in the *Puranas*, fixed his residence at *Bali-putra*, and there he suffered a most cruel death from *Crishna* and *Bala Rama*, who caused him to be split asunder. *Bala* restored the son, *Sahadéva*, to his hereditary dominions; and from that time the kings of Maghadha, for twenty-four generations, reigned peaceably at Patna;

until *Nanda* ascended the throne, who, proving an active and enterprising prince, subdued the whole of Prachi; and, having thus recovered the conquests that had been wrested from his ancestor, probably re-established the seat of empire at Bali-putra: the historians of Alexander positively assert, that he did. Thus while the kings of Palibothra, 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 Rama* in the *Puránas*, not even their names being mentioned;) the princes of Patali-putra, by a contrary conduct, acquired a reputation that spread over all India. It was, therefore, natural for foreign authors, (for such at least, *Ananta* was,) especially in compositions of the dramatic kind, where the effect is oftentimes best produced by a neglect of historical precision, of two titles, to which their hero had an equal right, to distinguish him by the most illustrious. The author of *Sacotala* has committed as great a mistake in making Hastinapoor 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 a 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 Lahore: it is joined by a new channel to the Ravy;) but this is a mistake; Hastinapoor lies on the banks of the old channel of the Ganges. The descendants of *Peru* resided at Sangala, whose extensive ruins are to be seen about fifty miles to the westward of Lahore, in a part of the country uninhabited. I will take occasion to observe here, that *Arrian* has confounded *Sangala* with *Salgada*, or *Salgana*, 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 deserted village, to this day called

called *Salghêda*; its situation answers exactly to the description given of it by *Alexander's* historians. The kings of Sangala 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 Patali-putra.

The true name of this famous place is, *Patali-pura*, which means the town of *Patali*, a form of *Devi* worshipped there. It was the residence of an adopted son of the goddess *Patali*, hence called *Patali-putra*, or the son of *Patali*. *Patali-putra* and *Bali-putra* are absolutely inadmissible, as Sanscrit names of towns and 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. *Patali-pura*, or the town of *Patali*, was called simply *Patali*, or corruptly *Pattiali*, on the invasion of the Mussulmans: it is mentioned under that name in Mr. *Dôw's* translation of *Ferishta's* history. It is, I believe, the *Pa-tali* of *Pliny*. From a passage in this author compared with others from *Ptolemy*, *Marcianus*, *Heracleotæ*, 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, *colandrophonta*, or in the Hindustani dialect, *coilan-di-pota*, *coilan boats* or *ships*: for *pota*, in Sanscrit, signifies a boat or a ship; and *di* or *da*, in the western parts of India, is either an adjective form, or the mark of the genitive case. *Pliny* has 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 Tentu-gully, almost opposite to Fultati*; thence to Tropina, or Triveni and Trebeni, called Tripina by the Portuguese, in the last century; and, lastly, to Patale, called Patali, Pattiali as late as the twelfth century, and now Patna. *Pliny*, who mistook this Patale for another town of the same name, situate at the summit of the Delta of the Indus, where a form of *Devi*, under the appellation of *Patali* is equally worshipped to this day, candidly acknowledges, that he could by no means reconcile the various accounts he had seen about Patale, and the other places mentioned before.

The account transmitted to us of *Chandra-Gupta*, by the historians of *Alexander*, agrees remarkably well with the abstract I have given in this paper of the *Mudra-Râcshasa*. By *Athenæus*, he is called *Sandra-coptos*, by the others *Sandracottos*, 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 Prâchi, 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-Râcshasa* it is said, that king *Nanda*, after a severe fit of illness, fell into a state of imbecillity, 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 *Vishnu-purána* and in the *Bhágavat Chandram*; that he, as well as his brothers, was called *Maurya* from his mother *Mura*; and as that word*, in Sanscrit, signifies a barber, it furnished occasion to his enemies to asperse him as the spurious offspring of one. The Greek historians say, the king of the *Prasú* 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 mother's children, but with a view to destroy them. The *Puránas* 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 *Prasú*, 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 Nepal; and this may be 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 *Jutivivoca*, where it is said, the offspring of a barber, begot by stealth, of a female of the Sudra tribe, is called *Maurya*: the offspring of a barber and a slave woman is called *Maurya*.

† *Strabo*, B. 45, 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 *Shivaca-Sēna*, the grandson of *Chandra-Gupta*. In the *Purānas* this grandson is called *Asecavard-dhana*, or full of mercy, a word of nearly the same import as *Aśeca-sēna* or *Shivaca-sēna*; the latter signifying *he whose armies are merciful do not ravage and plunder the country*.

The son of *Chandra-Gupta* is called *Allitrochates* and *Amitrocatēs* 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 *Chandra-Gupta* is called *Varisara* in the *Purānas*; according to *Parasara*, his name was *Dasaratha*; but neither the one nor the other bear any affinity to *Amitrocatēs*: this name appears, however, to be derived from the Sanscrit *Mitrā-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 *Chandra-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 *Chandra-Gupta* himself was a *Sudra*, that is to say, of the lowest class. In the
Vishnu-

Viſhnu-purána, and in the *Bhagawat*, 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 Baſtriana. *Arrian* in his *Periplus*, enumerating the exports from Europe to India, ſets down as one article beautiful virgins, who were generally ſent to the market of Baroche. The Hindus acknowledged that, formerly, they were not ſo ſtrict as they are at this day; and this appears from their books to have been the 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 *Ichſwacu* to *Daſaratha-Rama*, as exhibited in the ſecond volume of the *Aſiatick Reſearches*, from the *Viſhnu-purána* and the *Bhagawat*, and that ſet down in the Table I have given with this Eſſay. The line of the *Surya Varſas*, from the *Bhagawat* being abſolutely irreconcilable with the anceſtry of *Arjuna* and *Chriſhna*, I had at firſt rejected it, but, after a long ſearch, I found it in the *Ramayen*, ſuch as I have re-preſented it in the table, where it perfectly agrees with the other genealogies. *Daſaratha-Rama* was contemporary with *Paraſu Rama*, who was however the eldeſt; and as the *Ramayen* is the hiſtory of *Daſaratha-Rama*, 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 *Parasara* 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 *Parasara Sanhita*, in which it is declared, that the *Udáya* 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 *Parasara*, on the 10th 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 *Parasara*.

Another synchronism still more interesting, is that of the flood of *Deucalion*, which, according to the best chronologers, happened 1390 years before *Christ*. *Deucalion* is derived from *Déo-Calyún* or *Déo Caljún*, the true Sanscrit name is *Déva-Cála-Yavana*. The word *Cála-Yavana* is always pronounced in conversation, and in the vulgar dialects *Cá-lyún* or *Cálijún*; literally, it signifies the devouring *Yavana*. He is represented in the *Puránas*, 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 *Safni* or *Safna*. It is true, they never bestow upon him the title of *Déva*; on the contrary, they call him an incarnate demon, because he presumed to oppose *Crishna*; and was very near defeating his ambitious projects; indeed *Crishna* was nearly overcome and subdued, after seventeen bloody battles; and, according to the express words of the *Puránas*, he was forced to have recourse to treachery: by which means *Cályún* was totally defeated in the eighteenth engagement. That his followers and descendants should bestow on him the title of *Déva*, or *Deo*,
is

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 *Cályūn* in a very different light, and, certainly, would have no objection to his being called *Deo-Cályūn*. Be it as it may, *Deucalion* was considered as a *Déva* or *Deity* in the west, and had altars erected to his honour.

The Greek mythologists are not agreed about him, nor the country, in which the flood, that goes by his name, happened: some make him a Syrian; others say, that his flood happened in the countries, either round mount Etna, or mount Athos; the common opinion is, that it happened in the country adjacent to 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 *Puránas* *Garnda-s'than*, or the place of the *Eagle*, and is situated near the place called *Shibi*, in Major RENNELL'S map of the western parts of India; indeed, *Prawathasi* is better known in Sudia by the appellation of *Sheba**. *Deo-Cályūn*, who lived at Gazni, was obliged on the arrival of *Crīshna*, to fly to the adjacent mountains, according to the *Puránas*; and the name of these mountains was formerly *Parnafa*, from which the Greeks made *Parnafus*; they are situated between Gazni and Peshower. *Crīshna*, after the defeat of *Cályūn*, desolated his country with fire and sword. This is called in Sanscrit *Pralaya*; and may be effected by water, fire, famine, pestilence, and war: but in the vulgar dialects, the word *Pralaya*, signifies only a flood or inun-

* *Bamian* (in Sanscrit *Vamiyan*) and *Shibr* lay to the N. W. of Cabul,

dation. The legends relating to *Deo-Cályún*, *Prometheus* and his *cave*, will appear in the next dissertation. I shall have the honour to lay before the Society.

II. *Megasthenes* was a native of Persia, and enjoyed the confidence of *Sibyrtius**, governor of Arachosia, (now the country of Candahar and Gazni) on the part of *Seleucus*. *Sibyrtius* sent him frequently on the embassies to *Sandroceptos*. When *Seleucus* invaded India, *Megasthenes* enjoyed also the confidence of that monarch, who sent him, in the character of ambassador, to the court of the king of Prachi. We may safely conclude, that *Megasthenes* was a man of no ordinary abilities, and as he spent the greatest part of his life in India, either at Candahar or in the more interior parts of it; and, as from his public 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 as 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,

* *Arrian*, B. 5. p. 203.

they did not know where to stop; but the 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'* 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 5042 and three months, to the invasion of India by *Alexander*. *Megasthenes* certainly made very particular inquiries, 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 *Puránas*; 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 *Dionysus* to *Sandrocutos*, to the number of 153. Perhaps, this is not to be understood

stood of successions in a direct line: if so, it agrees well enough with the present list of the descendants of *Nausha*, or *Deo-Naussh*. 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 *Crishna*, and collaterally from *Naussh* to *Paricshita*; and afterwards from *Jarasandha*, who was contemporary with *Crishna*. 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 *Crishna*.

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, *Crishna* and his brother *Bala-Rama*. To render this intelligible, we must consider *Naussh* in two different points of view: *Naussh* was at first a mere mortal, but on mount *Meru* he became a *Déva* or *God*; hence called *Déva-Naussh* or *Deo-Naussh*, in the vulgar dialects. This happened about fifteen generations before *Crishna*. It appears that like the spiritual rulers of *Tartary* and *Tibet* (which countries include the holy mountains of *Meru*), *Deo-Naussh* 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 *Naussha* have been preserved by *Arrian*; they are *Spartembas*, *Budyas*, and *Cradevas*.

Cradevas. The first seems derived from the Sanscrit *Prachinbau*, generally pronounced *Prachinbau*, from which the Greeks made *Spartembau* in the accusative case; the two others are undubitably Sanscrit, though much distorted; but I suspect them to be titles, rather than proper names.

III. This would be a proper place to mention the posterity of *Noah* or *Satyavrata*, under the names of *Sharma* or *Shama* (for both are used), *Charma* and *Jyapti*. They are mentioned in five or six *Puranas*, but no farther 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 Bráhmens 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-purana*, the 371st name is *Shama-Jaya*, 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 *Sharma-putradaya*, 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 *Puranas*, that *Sharma*, having no children, applied to *Siva*, and made *Tapasya*, to his honour. *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 *Baleswara*, or *Iswara* the infant. *Baleswara*, 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 *Puránas*) we read, as one of his names, BALESÁ ISA or ISWÁRA, the *infant*. In the same list SIVA is said to be VARÁHI-PALACA, or he who *fostered* and *cherished* VARÁHI, 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 *Puránas*. 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 *Puránas*. The field is immense, and the powers of a single individual too limited.

V. The ancient statues of the gods having been destroyed by the Mussulmans, 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-Rama* at a place called *Baladeva*, or *Baldeo* 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-Rama* or *Bala-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 tyger. The village of Baldeo is thirteen miles E. by S. from Muttra.”

Here

Here I shall observe, that the ploughshare is always represented very small, and 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-Rama* is sometimes represented with his shoulders covered with the skin of a lion.

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 *Adhuta-cosa* we find the following legends, which have an obvious relation to the Deities worshipped in the Mysteries of *Samothrace*.

In *Patala* (or the infernal regions) resides the sovereign queen of the *Nagas* (large snakes or dragons:) she is beautiful, and her name is *ASYORUCA*. 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 *Patala*. These fires, forcing their way through the earth, waters, and mountains, formed various openings or mouths, called from thence the *flaming mouths*, or *juála-muc'hi*. By *SAMUDR* (*OCEANUS*) a daughter was born unto her called *RAMA'-DE'VI'*. She is most beautiful; she is *LACSHMI*; and her name is *A'SY-O'TCERSHA'* or *A'SYO'TCRISHTA*. Like a jewel she remains concealed in the ocean.

The *DHARMA-RAJA*, or King of Justice, has two countenances; one is mild and full of benevolence; those alone who abound with virtue see it. He holds a court of justice, where are many assistants, among whom are many just and pious kings: *CHITRAGUPTA* acts as chief secretary. These holy men determine what is *dharma* and *adharmā*, just and unjust. His (*Dharma rajas*) servant is

called CARMALA: 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-RAJA, 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 Patala; there he orders some to be beaten, some to be cut to pieces, some to be devoured by monsters, &c. His servant is called CASHMALA, 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 *Appollonius 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 CASHMILLUS, the same with the infernal MERCURY.

AXIEROS is obviously derived from *Afyoruca*, or rather from *Afyoru*, or *Afyorus*; for such is the primitive form; which signifies literally, *she whose face is most beautiful*.

AXIOCERSA is derived from *Afyotcersa*, a word of the same import with the former, and which was the sacred name of PROSERPINE. This is obviously derived from the Sanscrit *Prasarparni*, 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 *Pausanius*, insisted that she was the daughter of *Ceres* and *Neptune*; with whom the ancient mythologists often confound *Oceanus*.

As

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 *A'di* or *A'din*, one of the names of *Vishnu*. When *Cicero* says*, *Terrena autem vis omnes 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*.

AXIOCERSOS, or in Sanscrit *A'syotcersa*, or *A'syotcersas*, was *Pluto* or *Dis*, and was meant for *Vishnu*. *Vishnu* is always represented as extremely beautiful; but I never found *A'syotcersa* among any of his titles: he is sometimes called *Atcersa*, a word of the same import.

CASHMALA' or *CASHMALA'S* is obviously the *Casmillus* of the western mythologists. The appellation of *Cabiri*, as a title of these deities, is unknown to the Hindus; and, I believe, by the Cabirian gods, we are to understand the gods worshipped by a nation, a tribe, or a society of men called *Cabires*. The *Cuveras* or *Cuberas*, as it is generally pronounced, are a tribe of inferior deities, possessed of immense riches, and who are acquainted with all places under, or above ground, abounding with precious metals and gems. Their history, in the *Puranas*, begins with the first *Menu*, and no mention is made in it of floods; at least my learned friends tell me so. They are represented with *yellow eyes*, like the *Pingacshas* (of whom

* *Cic. De Natura Deorum.*

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, were 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: Κοῦξ, Ὀμ, Παξ; *Conx, Om, Pax*. These mysterious words have been considered hitherto as inexplicable: but they are pure Sanscrit, 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, *Canscha, Om, Pacsha*.

CANSCHA 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 honour 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 of pebbles of different colours into a box, the noise made by each pebble was

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 *Clepsydras*, 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 *Vaēt* 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 Latins in particular does, which is acknowledged to have been an ancient dialect of the Greek.

ACCOUNT OF THE
PAGODA AT PERWUTTUM.

EXTRACT OF A JOURNAL BY CAPTAIN COLIN
MACKENZIE,

COMMUNICATED BY MAJOR KIRKPATRICK.

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

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

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 *Malleearjee*, 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 to the spire or pyramid, which is not above thirty feet from the ground; the plates are

T 4

plain,

plain, excepting a few embossed figures of women, some small ornaments, and 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 ancient temple of MAL-LECARJEE, 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 inscriptions on two of the brass-plates: they professed not to know exactly the
meaning

meaning of them, being, they said, *Sanscrittum 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 surprize 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

that the digging for them has been long discontinued: the following places were mentioned as producing them, viz.

1. *Saringamutta*, near *Fatta Reow*, on the other side the *Kistna*, where the ferry and road to *Amirabad* crosses. N. B. A Pagoda here.
2. *Routa Pungala*, two parous distant, near *Pateloh Gunga*.
3. *Goffah Reow*, twelve parous down the river. N. B. A ferry or ford there. After the heavy rains, when the rivers fall, they are found sometimes in the beds. This place is near the ruins of *Chundra-goompty-putnam*, formerly a great town on its north bank, and now belonging to *Amararity*.

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 at 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 shiness that I had not experienced in any other parts of the journey,) came to request, that, as I was the first European, who had ever come so far to visit *Mallecarjee*, 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 unskillfulness 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,

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 sun beams; 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 favour 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 door-way, 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 farther, but my curiosity was now sufficiently satisfied. It appears, that this god *Mallicarjee* is no other than the *Lingam*, to which such reverence is paid by certain 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

were of a whitish metal, probably a mixture of tin and brass.

These arts, designed to impose on the credulity of the ignorant superstitious crowd, seem to have been cultivated successfully here, and the difficulties attending the journey, with the wild gloomy appearance of the country, no doubt, add to the awful impression made on their minds.

The Bráhmens having given me the following account of the origin of the Pagoda, I insert it here, as it may lead to farther 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 Rája
 “ 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 im-
 “ piety of his passion: proceeding to force, his daugh-
 “ ter fled to these deserts of Perwuttum, first utter-
 “ ing curses and imprecations against her father; in
 “ consequence of which, his power and wealth de-
 “ clined; his city, now a deserted ruin, remains a mo-
 “ nument 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 Monserrat, in Catalonia, men-
 tioned in *Baretti's* travels.

“ The princess was called *Mallica-davi*, and lived
 “ in this wilderness. Among her cattle was a remark-
 “ ably fine black cow, which she complained to her
 “ herdsman,

" herdsman, never gave her milk. He watched be-
 " hind the trees, and saw the cow daily milked by an
 " unknown person. *Malica-Divi* informed of this,
 " placed herself in a convenient situation, and be-
 " holding the same unknown person milking the cow,
 " ran to strike him with an 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 ap-
 " peared to her in a dream, and informed her, he was
 " the person that milked the cow; she, therefore, on
 " this spot, built the first temple that was consecrated
 " to the worship of this deity represented by a rude
 " stone." This is the second temple that was shewn
 yesterday, where he is exhibited in the rude state
 of the first discovery, and is called *Mudi-Mulla-Car-
 jee* or *Mallecarjee*; the other temples were afterwards
 built in later times, by Rajas and other opulent per-
 sons. The Lingam, shewn by reflected light in the
 gilded temple, has also its history and stories, still more
 absurd and wonderful, attached to it. It was brought
 from the (now deserted) city of Chundra-goompty-
 putnam. The princess, now worshipped as a goddess,
 is also called *Brama-Rumbo*, or *Strichillum-Rumbo*,
 from whence this Pagoda is called *Strichillum*. She
 delights peculiarly in Perwuttum, but is called by
 eighteen other names.

It may be proper here, to take notice of the carv-
 ings on the outer walls, as they are remarkable for
 their number, and contain less of those monstrous
 figures than other buildings of this kind. It would
 appear that the stories represented on several divisions,
 or compartments, are designed to impress on the
 mind some moral lesson, or to heighten the reverence
 inculcated for the object of adoration here. The
 customs and manners of the Gentoos; their arms,
 dress, amusements, and the parade and state attendant
 on their sovereigns, in former times, might be elu-
 cidated by a minute inspection of the figures repre-
 sented

sented 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 enclosed by a wall 660 feet long and 510 feet broad. In the centre of this inclosure are the more ancient buildings already described. Below the level of the principal gate, a road or avenue, twenty-four feet broad, goes parallel without to this wall, from whence is a descent by steps to gardens on the north side; from the east gate a double colonade runs, 120 yards, forming a street; an oblong tank is on the west side, from which water was conducted to reservoirs in the gardens, but these are now entirely neglected; the town or pettah covered the south side, and the S. E. angle; the form of the inclosure is an oblong square, with one square projection to the west. The great gate-ways are, as usual, supported by stone pillars, leaving apartments for the guard on each side the entrance: they are covered with spires of brick work; and this, with the pillar between, being retired some feet within the line of walls, shews that they are of more modern construction, though the spires are rather ruinous: and it may be proper to remark, that these brick spires, formed of several stories with small pilasters, of no regular order, and the niches ornamented with figures in 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 ancient, 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

pavement, leave its height varied from twenty-four 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.—2nd. 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 tygers, and running them through with long spears. The riders are represented very small in proportion to the horses, 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; some 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 row.—3d. On the third row, a variety of figures are represented, many of them hunting pieces; tygers (and in one place a lion) attacked by several persons; crowds

crowds of people appear on foot, many armed with bows and arrows, like the Chinsuars; many figures of Byrraggies or Jogies are seen distinguished by large turbans, carrying their sticks, pots, and bundles, as if coming from a journey; some leaning on a stick as if tired, or decrepit from age; others approaching with a mien of respect and adoration.—The fourth, fifth, sixth, and seventh rows, are filled (as it would appear from the scanty information I was able to obtain) with representations of several events regarding the deities of the place, or expressive allegories of the moral and religious dogmas of the Bráhmens; 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 Bráhmens, this was meant for BRAHMA weighing *Vishnu* and *Siva*, or *Subramica*; 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.

Second. Several people are represented pulling at the head and tail of a great snake, which is

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 (*Ingamvalu*:) 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 hand third row, two camels are represented, with a person on each beating the *nagra*, or great drum.

7th. In one compartment the figure of an alligator, or crocodile, with its scales 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 tyger 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 gunpowder 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 inquiring of the *Bráhmens* the meaning of these carvings, one of them replied, "it was to shew 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, until the gordian knot, made fast by the hand of modern times, be untied, much will remain in obscurity.

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*, viz. 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 yug</i>	-	728000
<i>Treta yug</i>	-	1296000
<i>Dwapar yug</i>	-	864000
<i>Cali yug</i>	-	432000
		<hr/>
One divine age or <i>Maha yug</i>		4320000
		<hr/>
71 <i>Maha yugs</i>	-	306720000
Add a <i>Sandhi</i>	-	1728000
		<hr/>
A <i>Manwantara</i>	-	308448000
14 <i>Manwantaras</i>	-	4318272000
		<hr/>
A <i>Calpa</i> , or a grand period	-	4320000000
		<hr/>

The *Calpa* is an anomalistic period, at the end of which the *Hindu* astronomers say, that the places of the planets' nodes and apsides will be precisely the

the same as at the beginning of it; and 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 19558,84,897 years ago: therefore six *Manwantaras*, 23 *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 above mentioned *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,

	Years	Real Years
A Poetic <i>Satya yug</i> of	1728000	is only 1728
<i>Treta yug</i> of	1296000	1296
<i>Dwapar yug</i> of	864000	864
<i>Cali yug</i> 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. continued

	Poetical Æras.	Year of the World.	Astronomic Æra.
<i>Dwapar Yug, or Brazen Age.</i>	CUSHA 1	3025	2120
	74	3098	BALIN 2193
	530	3554	CHANDRABIJA
	576	3600	2649
	676	3700	2695
	776	3800	2795
	864	3888	2895
<i>Cali Yug, or Iron Age.</i>		3889	2983
	1	3950	2984
	62	3983	VICRAMADITYA
	95	CHRIST 4007	3045
	119	4073	DEVAPALA 3078
	185	4085	3102
	197	4088	NARAYANPALA
	200	4188	3168
	300	4320	SACA 3180
	432	4321	3183
<i>Saiya Yug, or the Ild Divine Age.</i>		4505	3283
	1	4520	3415
	185	4624	3416
	200	4720	VARAHA 3600
	300	4920	3615
	400	5120	3715
	600	5320	3815
	800	5520	4015
	1000		4215
	1200		4415
			4615
	Curr.y.1483	Curr.year5803	Current year4898

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 notion 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 *BUDEA*, or *MERCURY* who married *ILA*, a daughter of *NOAH*, about the beginning of the *Treta yug*; contemporary with *JISC'HWACU* 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 *Mosaick* 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

time of NOAH; and he is said to have married ILLA, the daughter of NOAH: hence we may safely infer, that the BUDHA, who appeared in 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 events, as well as the time, perfectly coincide; 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 *piaboita*, or family priest, to RAMA, king of *Audhya* or *Oud*, who reigned,

reigned, according to the Hindu accounts, near the close of the Treta yug of the Poets. PARASARA, the father of VYASA, was therefore 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 CHRISHNA, ARJUN, ABHIMARIYIR, 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

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 entertained 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 appears 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, HABIMANYU, and VYASA, at the close of the *Dwapar yug* also; by which means they separate 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 year 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 *Bahar* into confusion. For having discovered that SAHADEVA, the son of JARASANDHA, was contemporary with YUDHISHTHIR, they concluded that

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 of 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 those I have

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 probability of doubt, that they have no connexion whatever with the astronomical yugs of the same name, belonging to the system of MEVA explained at the beginning of this essay; for in the latter all the yugs, Manwantaras, &c. belonging to the system begin invariably, on the first day of *Byfakh*, the moment the sun enters Aries in the *Hindu* sphere.

<i>Poetic Æras.</i>	<i>Days of the Week.</i>	<i>Moon's Age and Month.</i>
<i>Satya yug</i>	<i>Sunday</i>	3d tithee of the moon of <i>Byfakh</i> .
<i>Treta do.</i>	<i>Monday</i>	9th do. of do. <i>Cartic</i> .
<i>Dwapar do.</i>	<i>Thursday</i>	28th do. of do. <i>Bhadro</i> .
<i>Cali do.</i>	<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 tithees make a lunation.

With respect to the day of the week mentioned in 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 incarnation of the deity, which took place in the above-mentioned yugs, is extracted from an *augum* or *tontor*

tonior called "*Guhjateeguhja*," 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>Foistho</i>	<i>Rohini</i>
3 BORAHO	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>Rohini</i>
7 RAMO	Monday	9 <i>Chitro</i>	<i>Punaryobafec</i>
8 KREESNO	Wednesday	23 <i>Bhadro</i>	<i>Rohini</i>
9 BOODHO	Sunday	10 <i>Asaro</i>	<i>Byfakha</i>
10 KOLKEE	Saturday	2 <i>Agrahain</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 then 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 Capt. FRANCIS WILFORD was so obliging as to favour me with an extract.

TABLE OF THE PURANIC MANWANTARAS.

<i>Manw.</i>	<i>Days of the Week.</i>	<i>Moon's Age & Month</i>	<i>Nakshatra.</i>
1	Began on <i>Sunday.</i>	9th titthee of <i>Aswin.</i>	<i>Sravana.</i>
2	— <i>Thursday.</i>	12 — <i>Cartic.</i>	<i>Utto Bha-</i> <i>dropada.</i>
3	— <i>Monday.</i>	3 — <i>Chitr.</i>	<i>Critica.</i>
4	— <i>Friday.</i>	3 — <i>Bahar.</i>	<i>Hosta.</i>
5	— <i>Tuesday.</i>	30 — <i>Phalgun.</i>	<i>Solobhisa.</i>
6	— <i>Saturday.</i>	11 — <i>Pous.</i>	<i>Rhoini.</i>
7	— <i>Friday.</i>	10 — <i>Asar.</i>	<i>Swati.</i>
8	— <i>Tuesday.</i>	7 — <i>Magh.</i>	* <i>Onurcda.</i>
9	— <i>Sunday.</i>	23 — <i>Srabon.</i>	<i>Rhonini.</i>
10	— <i>Friday.</i>	15 — <i>Asar.</i>	<i>Uttora Sara</i>
11	— <i>Monday.</i>	15 — <i>Cartic.</i>	<i>Critica.</i>
12	— <i>Thursday.</i>	15 — <i>Phalgun.</i>	<i>Uttora-</i> <i>Pholguni.</i>
13	— <i>Wednesday</i>	15 — <i>Chitr.</i>	<i>Chitra.</i>
14	— <i>Wednesday</i>	15 — <i>Yoisht.</i>	<i>Jeysta.</i>

* Onurada appears incorrect, as the moon of Magh must be 20 or 21 days old before it enters Onurada Naksharat.

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 *stoke* or verse. However, as the first Manwantara commenced just when fifty years of BRA'HMA'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 notions 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 for 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 a day of BRA'HMA, and his night was of the same length; 360 of such days and nights form 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 BRA'HMA's life above mentioned appears to have been absolutely necessary in this system, to render it applicable to the purpose of astronomy.

nomy. But in the system of MEYA *now in use*, that cycle is now 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 *Surya Sidhanta*, lived in the Satya yug of the 28th Maha yug, of the 7th Manwantara of the fifty-first year of *Bráhma'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 *Byfakh*, 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 OSOTHAMO,

the son of DRON mentioned in the *Mahabharat*; and since the time of VYASA the remaining six Manwantaras have expired, as will appear from the following table of all the Patriarchs or *Munoos*, &c. from the time of SWOYOMBHOBO 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 seventh Manwantara, and which was the same when he wrote long before the time of VYASA.

TABLE of the PATRIARCHS OF MUNOOS, and others,
during the fourteen *Puranic Manwantaras*.

1st MANWANTARA.

SWOYOMBHOBO, or ADAM. <i>Munoo</i> .	ROOCHEE, the husband of AKOOTE
SOTOROOPA, his wife	KORDOM, ditto of DE- BOOTE
PREEYOBROTO, his son	DOKSOPROJAPOOTE, ditto of PROSOOTE
UTTANPADO, his second son	TOOREETO MOREECHEE
AKOOTE SWOYOMBHOOS, 1st daughter	MEESRO
DEBOOTE ditto, 2nd ditto	YOGO
PROSOOTE ditto, 3d ditto	

2d MANWANTARA.

SWAROCHESO. <i>Munoo</i> .	TOOREETO
RAJA DYUMOT, his son	URJOSTOMBHO
RAJA SUSENO, ditto	ROCHONO, & others.
RAJA ROCHEESMOT, ditto	

3d MANWANTARA.

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

4th MANWANTARA.

TAMOSO. <i>Munoo</i>	BEERSO
BREESOKHYATEE, his son	BEDHREETOYO
NOROHKETU, ditto	JOTEERDMA
SOTYOKHOROYO	TREESECKHOISWORO, and
	many others.

5th MANWANTARA.

RIBOTO. <i>Munoo</i>	HERONYOROMA
BOTEE, his son	BEDOSEERA
BEENDHO, ditto	URDHOBAAHOO
BHOOTOROYO	BEEBHOO, & many others.

6th MANWANTARA.

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

7th MANWANTARA.

VAVIOSWATA, or NOAH. <i>Munoo</i>	PREESODHRO, his 6th son
ICSHWAKU, his 1st son	NOBHOGO, 7th ditto
NREEGO, 2nd 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 & many others

8th MANWANTARA.

SUBORNI. <i>Munoo.</i>	POROŠU RAM
NEERMOKO, his son	DIPLIMAN
BEEROJOSKA, ditto	OSOTTHAMO, son of DRON
SUTOPIA	KREEPO
BEEROJA	REESYOSRINGO
OMREETOPROBHO	VYASA OR BYASA.
GABOLO	

9th MANWANTARA.

DOKSOSABORNI. <i>Munoo</i>	GHORBO
BOOTOKETU, his son	PARO
DIPTIKETU, ditto	DYUTIMOT
DREESTOKETU, ditto	STRUTHO, & many others.
MORICHI	

10th MANWANTARA.

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

11th MANWANTARA.

DHOMORSABORNEE.	<i>Munoo</i>	NEERBANO
SOTYO DHORMO, his son		ROOCHEE
BIHONGGONO		ORUNO
KAMOGOMO		BIDRETTO, and many others.

12th MANWANTARA.

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

13th MANWANTARA.

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

14th MANWANTARA.

EENDROSABORNI.	<i>Munoo</i>	OGNEE
URUNGGO, his son		BAHOO
BHURU, ditto		SOOCHEE
BODHNO, ditto		SUDHO
POBETROO		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, TOMOSO, and RIBOTO, the third, fourth, and fifth *Munoo*s, were the grandsons of SWOYOM-BHOOBO OF ADAM; DOKSOSABORNI, the ninth *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 *Pratishthana* or *Vitora*, otherwise *Hastinapur* (now *Delhi*) respectively, from about the beginning of the *Treta yug* of the Poets, or 1002nd 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 Era.	Solar Line.	Year of the Wo.	Lunar Line.	Astr. Era C. Yug
179	ICSWACHU	1907	BUDHA	1002
	VICUCSHI		PURURAVAS	
	CUCUSTA		AYUSH	
	ANENAS		NAHUSHA	
	PRITHU 5		YAYATI 5	
	VISWAGANDHI		PURU	
	CHANDRA		JANAMEJAYA	
	YUVANASWA		_____	
	SRAVA		_____	10
	VRIHADHASWA 10		_____	
	DHUNDHUMABA		_____	
	DRIDHASWA		_____	

Treta Yug, or Silver Age.

Poetic

<i>Poetic Æra.</i>	<i>Solar Line.</i>	<i>Year of the Wo.</i>	<i>Lunar Line.</i>	<i>Astr. Æra. C. Yug.</i>	
<i>Treta Yug, or Silver Age.</i>	HERYASWA		—		
	NICUMBHA		—		
	CRISAWA 15		—		
	SENAJIT		—		
	YUVANASWA		—		
	MANDHATRI		—		
	PURUCUTSA			PRACHINWAT	
	TRASADASYU			PRAVIRA	
		20			
	ANARANYA			MENASYU	
	HERYASWA			CHARUPADA	
	PRARUNA			SUDYU	
	TRIVENDHA- NA			BAHUGAVA	
	SATYAVRATA			SANYATI	
		25			
	TRISANCU			AHANYATI	
	HARISCHAN- DRA			RAUDRASWA	
	RHOITA			RITEYUSH	
	HARITA			RAUTINAVA	
	CHAMPA 30			SUMATI	
	SUDEVA			AITI	
	VIJAYA			DUSHMANTA	
	BHARUCA			BHARATA	
	VRICA			VITATHA	
	BAHUCA 35			MANYU	
	SAGARA			VRIHATESHE- TRA	
	ASMANJAS			HASLIN	
	ANSUMAT			AJAMEDHA	
	BHAGHIRA- THA			RICSHA	
	SRUTA 40			SAMWARANA	
	NABHA			CURU	

<i>Poetic Era.</i>	<i>Solar Line.</i>	<i>Year of the Wo.</i>	<i>Lunar Line.</i>	<i>Astr. Era C.Yug</i>
	SINDHADWIPA AYUTAYUSH RITAPERNA SAUDASA 45		JAHNU SURATHA VIDURATHA SARVABHAUMA 45	
	ASMACA MULACA DASARATHA AIDABIDI VISWASAHA 50 CHATAWANGA DERGHABAHU RAGU AJA DASARATHA 55 RAMA		JAYASINHA RADHICA AYUTAYUSH ACRODHANA DEVATITHI 50 RUSHA DILLIPA PRATIPA SANTANU VACHYTRAVIR- YA 55 PANDU	
<i>Treta Yug, or Silver Age.</i>	1097 VRIHADBALA	2825	YUDHISHTHI- RA	1920
	1107 VRIHADRANA *URUCRYA *VATSAVRID- HA 60 *PRATOYOMA *BHANU *DEVACA *SAHADEVA *VIRA 65 1296 *VRIDHASWA	2835	PARICSHIT *JANAMAJAYA *SATANICA 60 *SAHASRINA- CA *ASWAMEDHA- JA *ASIMACHRISH- NA *NEMICHAC- RA *UPTA 65 *CHITRARATA	1930 60 2119
		3024		

Poetic Era.	Solar Line.	Year of the Wo.	Lunar Line.	Astr. Era C. Yug
1	CUSHA	3025	*SUCHIRATHA	2120
	ATTITHI		*DHRITIMAT	
	NISHADHA		*SUSHINA'	
	NABAS 70		*SUNITHA 70	
	PUNDARICA		*NRICHAESHUH	
	CSHEMADHANWAS		*SUCHINALA	
	DEVANICA		*PARIPLAVA	
	AHSNIAGU		*SUNAGAR	
	PARIPATRA 75		*MEDHAVIN	
	RANACHALA			75
	VAJHRANABHA		*NRIPANJAVA	
	ARCA		*DERVA	
	SUGANA		*TRINI	
	VIDHRITI 80		*VRIHADRA-	
	HIRANYANA-		THA	
	BHA		*SUDHASA 80	
	PUSHYA		*SATANICA	
	DRUVASAND-		*DURMADA-	
	HI		NA	
	SUDERSANA		*RAHINARA	
	AGNIVERNA 85		*DANDAPANI	
	SIGHIRA		*NIMI 85	
	MARU		*CSHIMACA	
	PRASUSRUTA		_____	
	SANDHI		_____	
	AMERSANA 90		_____	
	MAHASWAT		_____	90
	VIŠWABHAHU		_____	
	PRASENHAJIT		_____	
	TACSHACA		_____	
	*BANNUMAT		_____	
		95	_____	95

Dwapar Yug, or Brazen Age.

<i>Poetic Era.</i>	<i>Solar Line.</i>	<i>Year of the Wo.</i>	<i>Lunar Line.</i>	<i>Astr. Era C.Yug</i>	
<i>Dwapar Yug, or Brazen Age.</i>	*PRACTICAS- WA		_____		
	*SUPRATICA		_____		
	*MARUDEVA		_____		
	*SUNASCHA- TRA		_____	100	
	*PUSHCARA		_____		
		100		_____	
	*ANTARICSHA		_____		
	*SUTAPAS		_____	105	
	*AMITRAJIT		_____		
	*VRIHADRAJA		_____		
	*BARHI	105		_____	
	*CRITANJAYA		_____		
	*RANANJAYA		_____	110	
	*SLOCYA		_____		
	*SUDHODA	110		_____	
	*LANGALADA		_____		
	*PRASENAJIT		_____		
	*CSUDRACA		_____	115	
*SUMITRA		_____			
	_____			115	

864	_____	3888	_____	117 2983	

In the preceding table I have placed YUDHISH-
THIR in the year 2825 of the world, corresponding to
the 1097th of the Treta yug of the Poets, and to the
1920th of the astronomic 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

of VYASA, but also on account of the exact coincidence of that period with the chasm in the chronology of the kings of *Maghada*, 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 a half, or seventeen years at the utmost, to each reign, in a long succession of princes. Therefore, as ICESHWACU, 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 ICESHWACU'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-seventh 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 Dwa-par yug, or 864 years, would be fifty-one: which, with the former number, make altogether 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'S in the lunar line, and with VRIHADBALA and VRIHADRANA'S, their contemporaries, in the solar line, were removed (with others) by the

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 96th 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 the 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 prob-

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 chafms.

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 fifty years before the year 3888 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 3788 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 king 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.

<i>Anno Mundi</i>		<i>Cali Yug</i>	<i>Anno Mundi</i>		<i>Cali Yug</i>
1905	PRADYOTA PALACA VISACHAYUPA RAJACA NANDIVIRDA- NA	1000		SUJYESHTHA VASUMITRA ABHADRACA PULINDA GHOSHA VAJRAMITRA	
2044	SISUNGA CACAVERNA CSHEMADHER- MAN CSHETRAJIR- YA VIDISARA AJATASATRU DARBACA AJAYA NANDEVERD- HANA MAHANANDI	1139		BHAGAVATA DEVABUTI 2753 VASUDEVA BHUMITRA NARAYANA SUSARMAN	1848
2404	NANDA	1499	2825	*SAHADEVA *MARJARI *SRUTASRAVA *AYUTAYUSH *NIRAMITRA *SUNACSHA- TRA *VRISHETSE- NA	1920
2504	CHANDRA- GUPTA VARISARA ASOCAVERD- HANA SUYASAS DESARATHA SANGATHA SALISCUCA SOMASARMAN SATADHAN- WAS VRIADRATHA	1599		*CARMAJIT *SRUTANJAYA *VIPRA *SUCHI *CSHEMA *SUVRATA *DHERMASU- TRA *SRAMA *DRIDHASE- NA	
2641	PUSHPAMITHA AGNAMITRA	1736			

Anno Mundi		Cali Yug	Anno Mundi		Cali Yug
	*SUMATI			SIVASWATI	
	*SUBALA			PURISHABHE- RU	
	*SUNITA			SUMANDANA	
	*SAYTAJIT			CHACORACA	
3098	BALIN	2193		BATACA	
	CRISHNA			GOMALIN	
	SRISANTA- CARNA			PURIMAT	
	PAURNAMA- SA			MEDASIRAS	
	LAMBODARA			SERASCANDA	
	VIVILACA			YAJNYASRI	
	MEGHASWATA			VIJAYA	
	VATAMANA			CHANDRABI- JA	2649
	TALACA		3554		

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, 2nd October, 1796.

ON THE RELIGIOUS CEREMONIES
OF THE HINDUS,
AND OF THE BRAHMENS 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 to 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 *Bráhmána* 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; SOMA, king of herbs and plants, has approached
VOL. V. Y “thee:

“ thee: mayest thou and he cleanse my mouth with
 “ glory and good auspices, that I may eat abun-
 “ dant 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 wa-
 ter. 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 devotion, is
 inculcated by pronouncing the strict observance of
 it as no less efficacious, than a rigid penance, in ex-
 piating sins, especially the early bath in the months
 of *Magha*, *Phalgima*, and *Cartica*: and the bath
 being particularly enjoined as a salutary ablu-
 tion, he is permitted to bathe in his own house, but
 without prayers, if the weather, or his own infirmi-
 ties 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
 regular bath consists of ablutions followed by worship,
 and by the inaudible recitation of the *Gáyatri* with
 the names of the worlds. First sipping water,
 and sprinkling some before him, the priest recites
 the three subjoined prayers, while he performs an
 ablu- tion 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 rap-
 “ turous sight of the supreme God. 2d. Like tender
 “ Mothers make us here partakers of your most aus-
 “ picious essence. 3d. We became contented with
 “ your

“ your essence, with which ye satisfy the universe.
 “ Waters! grant it unto us.” For, as otherwise
 expounded, the third text may signify, “ Eagerly do
 “ we approach your essence, which supports the uni-
 “ versal 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 *Gáyatri*, holding much *cusa* 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 naval; or his breast,
 naval, and both shoulders, only (according to another
 rule) he should again sip water three times, pro-
 nouncing 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 PARASARA, "water," the *védas*, "the sun, moon, and air, all reside in the right ears of *Bráhmanas*. *Ganga* 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 above mentioned, and passed his hand filled with water briskly round his neck, while he recites this prayer: "May the waters pre-serve me!" The priest closes his eyes, and meditates in silence, figuring to himself that BRÁHMA, with fair 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 *Gáyatri* with the mysterious names of the worlds, the triliteral monosyllable, and the sacred text of BRÁHME. A suppression of breath so explained by the ancient legislator, YA'JNYAWALCYA, consequently implies the following meditation: "Om! earth! sky! heaven! middle region! place of births! mansion of the blessed! abode of truth!"

"We

“ We meditate on the adorable light of the resplendent Generator which governs our intellects; which is water, lustre, favour, immortal faculty of thought, BRAHME, earth, sky, and heaven.” According to the commentary, of which a copious extract shall be subjoined, the text thus recited signifies, “ That effulgent power which governs our intellects is the primitive element of water, the lustre of gems and other glittering substances, the favour of trees and herbs, the thinking soul of living beings; it is the creator, preserver, and destroyer, the sun and every other deity, and all which moves or which is fixed in the three worlds, named, earth, sky, and heaven. The supreme BRAHME, so manifested, 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, showing the efficacy of these prayers, in expiating

piating sin. As the foregoing explanations of the text are founded chiefly on the gloss of an ancient philosopher and legislator, *Yájnyawalkya*, 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 im-
 “ plies, that he colours all creatures; the last sylla-
 “ ble signifies, that he moves without ceasing. From
 “ his cherishing all, he is called the irradiating Pre-
 “ server.”

Although it appears, from the terms of the text, (“ Light of the Generator or Sun,”) that the sun and the light spoken of are distant, 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

“ 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 pains.”

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 BRA'HMANA', 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 *paláśá*," says YA'JNYAWALCYA, "is supported by a single pedicle, so is this universe upheld by the syllable *óm*, a symbol of the supreme BRA'HME." 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 BRA'HME, the supreme soul. The sun, says *Yájnyawalcya*, is BRA'HME; this is a certain truth revealed in the sacred *upaniśhats*, and in various *śáchás* 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
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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 BRA'HME, is manifested in all moving beings (gods, demons, men, serpents, beasts, birds, insects, and the rest,) by their locomotion; and in some fixed substances, such as stones, gems, and metals, by their lustre; in others, such as trees, plants, and herbs, by their favour. Every thing, which moves, or which is fixed, is pervaded by that light, which, in all moving things, exists as the supreme soul, and as the immortal thinking faculty of beings, which have the power of motion. Thus, the venerable commentator says, "In the midst of the sun stands the moon, in the midst of the moon is fire, in the midst of light is truth, in the midst of truth is the unperishable being." And again, "God is the unperishable being, residing in the sacred abode; the thinking soul is light alone; it shines with unborrowed splendour." This thinking soul, called the immortal "principle," is a manifestation of that irradiating power, who is the supreme soul.

This universe, consisting of three worlds, was produced from water. "He first, with a thought, created the waters, and placed in them a productive seed." (*Menu*, chap. 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 destination, manifested with these powers, in the form of BRA'HMA, 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 BRA'HMA, VISHNU, and RUDRA, who are respectively endued with the qualities of truth, passion, and darkness. The meaning is, that this irradiating being, who is the
 supreme

supreme BRAHME, manifested in three forms or powers, is the efficient cause of the creation of the universe, of its duration and destruction. So in the *Bhawishya purána*, CRISHNA 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 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

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 north-east quarter. This is considered as an internal ablution, which washes away sins. He concludes by sipping water with the following prayer: “Water! thou dost penetrate all beings; thou dost reach the deep recesses of the mountains; thou art the mouth of the universe; thou art sacrifice; thou art the mystic word *vashā*; 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.” 2nd. “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,

ent, 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 *Gáyatri* must be next invoked, in these words: "Thou art light; thou art seed; thou art immortal life; thou art 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 trisyllable, whose import is the power of the Supreme Being; come, thou mother of the *védas*, who didst spring from *BRAHME*, be constant here." The *Gáyatri* is then pronounced inaudibly with the trilateral monosyllable, and the names of the three lower worlds, a hundred or a thousand times, or as often as may be practicable, counting the repetitions on a rosary of gems set in gold, or of wild grains. For this purpose, the seeds of the *putrajiva*, vulgarly named *pitonhia*, are declared preferable. The following prayers from the *Vishnu Purána*, conclude these repetitions*: "Salutation to

* "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 *Gáyatri* 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 *Udgatri* or chanter of the *Sama-deva*; the *Hotri* or reader of the *Rigveda*, who performs the essential part of a religious ceremony; and *Adhwarin*, who sits in the sacred close and chants the *Yajurveda*. His three feet are the three *vedas*. Oblations and sacrifice are his two heads, roaring stupendously. His seven hands are the *Hotri*, *Mastravaruma*, *Bramanach handasi*, *Gravastata*, *Adchhavac*, *Nishtri*, and *Potri*; names by which officiating priests are designed at certain solemn rites. The threefold ligature by which he is bound, is worshipped in the morning, at noon, and in the evening."

“ the sun; to that luminary, O BRÁHME, who is the
 “ light of the pervader, the “ true generator of the
 “ universe, the cause of efficacious rites.” 2nd. “ I
 “ bow to the great cause of day (whose emblem is a
 “ full blown flower of the *yava* tree) the mighty lumi-
 “ nary sprung from CASYAPA, the foe of darkness, the
 “ destroyer of every sin:” or the priest walks a turn
 through the south, rehearsing a short text, “ I follow
 “ the course of the sun;” which is thus explained, “As
 “ the sun, in his course, moves round the world by
 “ the way of the south, so do I, following that lumi-
 “ nary, obtain the benefit arising from a journey
 “ round the earth, by the way of the south.”

The oblation above mentioned, and which is called *Arg'há*, 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
 “ region, he is the sacrificer at religious rites, and he
 “ sits in the sacred clove, 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 man-
 “ sion, in the subtle ether, produced in water, in
 “ earth, in the abode of truth, and in the stony moun-
 “ tains; he is that, which is both minute and vast.”
 This text is explained as signifying, that the sun is a manifestation of the supreme being, present 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 performed in the form prescribed for the mid-day bath; the practice of bathing at noon is likewise

wife 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 a basin of a cataract; but he should prefer water which lies 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 to 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 river; "O Ganga, Yamuna, Saraswati, Satadru, Marudviha, and Jyotirya! hear my prayers; for my sake be included in this small quantity of water with the holy streams of Parushti Asieni, and Vitasta." He should also utter the radical prayer, consisting of the words "Salutation to Náráyana." 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 concluded by taking up the earth
and

and pronouncing the subjoined prayers: " Earth,
 " supporter of all things, trampled by horses, tra-
 " versed by cars, trodden by VISHNU! whatever sin
 " has been committed by me, do thou, who art up-
 " held by the hundred armed CRISHNA, incarnate in
 " the shape of a boar, ascend my limbs, and remove
 " every such sin."

The text extracted from the *padma purána* follows:
 " thou didst spring from the foot of VISHNU, daughter
 " of VISHNU, honoured by him; therefore preserve
 " us from sin, protecting us from the day of our
 " birth, even unto 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 the daughter JAHNU. Thou art called
 " she, who promotes growth, among the gods: thou
 " art named the lotos; able, wife of PRITHU, bird,
 " body of the universe, wife of SIVA, nectar, female
 " cherisher of science, cheerful, favouring worlds;
 " merciful, daughter of JAHNU, consoler, giver of
 " consolation. *Ganga*, who flows through the three
 " worlds, will be near unto him, who pronounces these
 " pure titles during his ablution."

When the ceremony is preferred in its full detail,
 the regular prayer is a text of the *véda*. " Thrice did
 " VISHNU step, and at three strides traversed the uni-
 " verse: happily was his foot placed on this dusty
 " earth. Be this oblation efficacious!" By this
 prayer is meant, " May the earth, thus taken up, pu-
 " rify 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 ele-
 " ments, 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:

pronounced: "Because VARUNA, 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, "VARUNA, king of waters, who curbs the wicked, made an expanded road in the other real 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 VARUNA." This is explained as importing that the displeasure of VARUNA, 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 consumption of solemn rites! who dost purify when per- formed 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 officiate

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“ ate at sacraments. Therefore defend me from the
 “ pernicious sin of offending the gods.”

Water must be next sipped with the prayer, “ Lord
 “ of sacrifice, thy heart is in the midst of the waters
 “ of the ocean, &c.” and the invocation of holy rivers
 is again recited. The priest must thrice throw up wa-
 ter 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 purity, may I obtain that
 “ coveted innocence, which is the wish of thee, who
 “ is satisfied with this oblation of water and of me,
 “ who am purified by this holy grass.” 2nd. “ May
 “ the Lord of speech purify me, &c.” 3d. “ May
 “ the resplendent sun purify me, &c.” Thrice plung-
 ing into water, the priest should as often repeat the
 grand expiatory text, of which YA’JNYWALCYA says,
 “ it comprises the principles of things, and the ele-
 “ ments, the existence of the (chaotic) mass, the
 “ production and destruction of worlds.” This serves
 as a key to explain the meaning of the text, which,
 being considered as the essence of the *Védas*, is most
 mysterious. The author before me, seems to under-
 take the explanation of it with great awe, and inti-
 mates, 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 suc-
 “ cessively 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 BRA’HME,

“BRAHME is truth, the one immutable being. He
 “is truth and everlasting knowledge.” “During the
 ‘period of general annihilation, says the commen-
 ‘tator, the Supreme Being alone existed. Afterwards,
 ‘during that period, night was produced; in other
 ‘words, there was universal darknes.’ “This uni-
 “verse existed only in darknes, imperceptible, unde-
 “finable, undiscoverable by reason, and undiscov-
 “ered by revelation, as if it were wholly immerfed in
 “sleep.” (MENU, ch. I. v. 5.) Next, when the crea-
 tion began, the ocean was produced by an unseen
 power univerfally diffused; that is, the element of
 water was first reproduced, as the means of the crea-
 tion: “He first, with a thought, created the waters,
 “&c.” (MENU, ch. I. v. 8.) Then did the Creator,
 when lord of the universe, rise out of the waters.
 ‘The lord of the universe, annihilated by the gene-
 ‘ral 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 quota-
 tions on the sublimity and efficacy of this text, which
 MENU compares with the sacrifice of a horse, in respect
 of its power to obliterate sins.

After bathing, while he repeats this prayer, the
 priest should again plunge into water, thrice re-
 peating 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
Gáyatri, &c. during three suppressions of breath.
 He must also recite it measure by measure, hemi-
 stich 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 recit-
 ing a prayer, which will be quoted on another occa-
 sion. One who has drunk spirituous liquors should
 traverse

traverse water up to his throat, and drink as much expressed juice of the moon plant, as he can take up in the hollow of both hands, while he meditates the triliteral monosyllable, and then plunge into water, reciting the subjoined prayer: "O RUDRA! hunt
 " not our offspring and descendants; abridge not the
 " period of our lives; destroy not our cows; kill not
 " our horses; slay not our proud and irritable folks;
 " because, holding oblations, we always pray to
 " thee."

Having finished his ablutions, and coming out of the water, putting on his apparel after cleansing it, having washed his hands and feet, and having 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 wa-
 " ters free me from every defilement, whatever be my
 " uncleanness, whether I have eaten prohibited food,
 " done forbidden acts, or accepted the gifts of dis-
 " honest men." Another difference between worship at noon and in the morning, consists in standing before the sun with uplifted arms, instead of joining the hands in a hollow form. In all other respects the form of adoration is similar.

Having concluded this ceremony, and walked in a round beginning through the south, and saluted the sun, the priest may proceed to study a portion of the *Veda*. Turning his face towards the east, with his right hand towards the south, and his left hand towards the north, sitting down with the *vusa* 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 *Gâyatri*, the priest should recite the proper text on commencing the lecture, and read

as much of the *Védas* as may be practicable for him, continuing the practice daily, until he have read the whole of the *Védas*; and then re-commencing the course.

Prayer on beginning a lecture of the *Rigveda*:
 “ 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 *Véda*, 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 the beginning a lecture of the *Samaveda*: “ Regent of fire, who dost effect all religious ceremonies, approach to taste my offering; thou who art praised for the sake of oblations, sit down on this grass.”

The text which is repeated on commencing a lecture of the *At'harva véda* has been already quoted on another occasion: “ May divine waters be auspicious to us, &c.”

In this manner should a lecture of the *Védas*, or of the *Védangas*, of the sacred poems and mythological history of law, and other branches of sound 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 *eusa* grass before him, with the tips pointing towards the

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 grass;" 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 grass, and be cheerfull." Spreading the *cusa* grass, 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 grass, 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 quisters, 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 *cusa* grass, the middle of which must rest on the palm of his hand: this oblation he presents on grass, the tips of which are pointed towards the north; and with it he pronounces these words: "May SANACA be satisfied; may SAMANDANA, SANATANA, CAPILA, ASURI, BODHU, and PARCHASICHA, be satisfied herewith." Placing the thread, &c. on his right shoulder, and turning towards the south, he must offer *tila* and water

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

from the root of his thumb (which 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 forefather, be satisfied herewith; may the moon, the judge of departed souls, the sun, the progenitors who are purified by fire, those who are named from their drinking the juice of the moon-plant, and those who are denominated from sitting on holy grass, be satisfied herewith!" He must then make a similar oblation, saying, "May NÁRÁ'SÁRYA, PÁRÁ'SÁRYA, S'UCA, SA'CALYA, YÁJNYA-WALCYA, JÁTUCARN'A, CÁTYA'YANA, APASTAMBA, BAUD'HÁ'YANA, VA'CHACUT'I, VACJÁVA'PI', HU'HU', LO'CÁ'CSHI', MAITRÁ'YAN'I', and AINDRÁ'YAN'I', be satisfied herewith." He afterwards offers three oblations of water mixed with *tila*, from the hollow of both hands joined, and this he repeats fourteen times with the different titles of YAMA, which are considered as fourteen distinct forms of the same deity. "Salutation to YAMA, salutation to DHER-MARAJA or the king of deities, to death, to ANTACA or the destroyer, to VAIIVASWATA or the child of the sun, to time, to the slayer of all beings, to AUDHUMBARA 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

“ purified by fire, approach us through the paths
 “ which are travelled by gods; and pleased with the
 “ food presented at the sacrament, may they ask for
 “ more, and preserve us from evil.” He should then
 offer a triple oblation of water with both hands,
 reciting the following text, and saying, “ I offer this
 “ *tila* and water to my father, such a one sprung from
 “ such a family.” He must offer similar oblations
 to his paternal grandfather, great-grandfather; and
 another set of similar oblations to his maternal grand-
 father, and to the father and grandfather of that an-
 cestor; a similar oblation must be presented to his
 mother, and single oblations to his paternal grandmo-
 ther and great grandmother: three more oblations are
 presented, each to three persons, paternal uncle, bro-
 ther, son, grandsons, daughter’s son, son-in-law,
 maternal uncles, sister’s son, father’s sister’s son, mo-
 ther’s sister, and other relations. The text alluded to
 bears this meaning: “ Waters, be the food of our pro-
 “ genitors; satisfy my parents, ye who convey nou-
 “ rishment, 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 vo-
 luntary oblations; the first presented like the obla-
 tions 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 of-
 ferings are subjoined: 1st. “ May the gods, demons,
 “ benevolent genii, huge serpents, heavenly quiristers,
 “ fierce giants, blood-thirsty savages, unmelodious
 “ guardians of the celestial treasure, successful genii,
 “ spirits called *Cushmanda*, trees, and all animals,
 “ which move in air or in water, which live on earth,
 “ and feed abroad; may all these quickly obtain con-
 “ tentment, through the water presented by me.”

2nd. "To satisfy them who are detained in all the
 "hells and places of torment, this water is presented
 "by me." 3d. "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 de-
 "fire oblations of water from me obtain perfect con-
 "tentment." The first text, which is taken from the
Samaveda, 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 wa-
 "ter 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 purana*, which has
 been already cited, "Salutation to the sun, &c." He
 then concludes the whole ceremony by worshipping
 the sun with a prayer above quoted: "Thou art
 "self-existent, &c." by making a circuit through the
 south, while he pronounces, "I follow the course of
 "the sun;" and by offering water from the hollow of
 his hand, while he salutes the regents of space and
 other Deities. "Salutation to space; to the regents
 "of space, to BRAHMA, to the earth, to salutary
 "herbs, to fire, to speech, to the lord of speech, to
 "the pervader, and to the mighty Deity."

C. E. CARRINGTON, ESQ.

Secretary to the Asiatick Society.

SIR,

THE sacrifice of human and other victims, and the sacrificial rites celebrated by the *Hindus*, having been represented to me as a subject of curious investigation, which, from a comparison with the ceremonies used on similar occasions, by other ancient nations, might perhaps be interesting, as well to the Society, as to the learned in *Europe*, I procured the *Calica Puran*, in which I was given to understand, I should meet with full information on the subject. To effect this purpose, I translated the *Rudhirādhyāyā* 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 Goddess *CALI*, to whom these sacrifices are made, and of the *Bhairāvās*, sons of *SIVA*, to two of whom the chapter is addressed by *SIVA*.

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

W. C. BLAQUIERE,

Calcutta, August 15th, 1796.

XXIII.

THE RUDHIRADHYAYĀ,

OR SANGUINARY CHAPTER;

TRANSLATED FROM THE CALICA PURAN.

BY W. C. BLAQUIERE, ESQ.

SALUTATION TO CALICA.

[*Shivā addresses Betāl, Bhairāva, and Bhairāvā.*]

I Will relate 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 *vaiṣṇāvi 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, buffaloes, bulls, he goats, ichneumons, wild boars, rhinoceroses, antelopes, guanias, rein-deer, lions, tygers, men, and blood drawn from the offerer's own body, are looked upon as proper oblations to the Goddess *Chandica*, the *Bhairāvās*, &c.

It is through sacrifices that princes obtain bliss, heaven, and victory over their enemies.

The pleasure which the Goddess receives from an oblation of the blood of fish and tortoises is of one month's

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 *Sārābhās** 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, rein-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 *rohita*.

The flesh of the antelope and rhinoceros pleases the Goddess five hundred years, and the *rohita* fish and *Bardhrinasa* 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 *Bardhrinasa*, and is reckoned as the best of *Hāvyaś*, (i. e. offerings to the Deities); and *Cāvyaś*, (i. e. offerings to deceased progenitors.)

The bird whose throat is blue, and head red, and legs black with white feathers, is called also *Bardhrinasa*, and is king of the birds, and the favourite of me and VISHNU.

By a human sacrifice attended by the forms laid down, DEVI is pleased one thousand years, and by a

* Sarabhas, an animal of a very fierce nature, said to have eight feet.

sacrifice of three men, one hundred thousand years. By human flesh *Cámác'hyá*, *Chāndicá*, and *Bhairāvā*, who assume 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 *Chāndicá*. 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, sugar-cane, 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 *Chāndra-hásá*, or *cātri* (two weapons of the ax kind) is reckoned the best mode; and with a hatchet or knife, or saw, or a sangul, the second best; and the beheading with a hoe, or a *Bhāllāc* (an instrument of the spade kind), the inferior mode.

Exclusive of these weapons, no others of the spear or arrow kind ought ever to be used in performing a sacrifice, as the offering is not accepted by the 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 *Bráhmen*, 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;

fion; 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 *Durgá* and *Cámác'hyá*.

Let the sacrificer repeat the word *CA'LI* twice, then the words *Devi Bajreswari*, then *Lawhá Dándáyai*, *Namah!* which words may be rendered *Hail! Cali, Cali! Hail! Devi! Goddess of thunder; Hail, iron sceptered Goddess!* Let him then take the ax in his hand, and again invoke the same by the *Cálratriyá* text as follows.

Let the sacrificer say *Hrang Hring. Cali, Cali!* O horrid toothed Goddess; eat, cut, destroy all the malignant, cut with this ax; bind, bind; seize, seize; drink blood; spheng, spheng; secure, secure. Salutations to *Cali*. Thus ends the *Cálratriyá Mántrá*.

The *Charga* (the ax) being invoked by this text, called the *Cálratriyá Mántrá*, *Cálrátri* (the Goddess of darkness) herself presides over the ax uplifted for the destruction of the sacrificer's enemies.

The sacrificers 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

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 represented in the holy vessel named *frub* and *fruch*, nor on the ground. Let it not be presented in the *Ghātā* (i. e. an earthen jar always used in other religious ceremonies). Let it not be presented by pouring it 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 *Afwamedha* sacrifice, is wrong, as also offering an elephant, except at the *Gājā Medha*: let therefore the ruler of men observe never to offer them except on those occasions. And on no account whatsoever let him offer them to the Goddess *Devi*, using the wild bull called *Chán-rārū* as a substitute for the horse, when the occasion requires one.

Let

Let not a *Bráhmén* ever offer a lion or a tyger, or his own blood, or spirituous liquors to the Goddess *Devi*. If a *Bráhmén* 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 *Bráhmén* offers his own blood, his guilt is equal to that of the slayer of a *Bráhmén*; and if he offers spirituous liquors, he is no longer a *Bráhmén*.

Let not a *Cshétree* offer an antelope: if he does, he incurs the guilt of a *Bráhmén* 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, *Nómō*, &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 serve as a consecration of the whole. I have now related to you, O *Bhairāvā*, in general terms, the ceremonies and forms of sacrifices: attend now to the different texts to be used on the several different occasions.

When a buffalo is presented to *Devi*, *Bhairavaree*, or *Bhairāvi*, let the sacrificer use the following *Māntrā* in invoking the victim.

“ In the manner that thou destroyest horses, in the
 “ manner that thou carriest *Chāndicá*, destroy my
 “ enemies, and bear prosperity to me, O buffalo!”

“ On

“ O steed of death, of exquisite and unperishable
 “ form, produce me long life and fame. Salutation
 “ to the, O buffalo!”

Let him then address the *Charga* (ax) calling it *Guhá Játā*, 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 *Mān-
 trā* 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 *Mān-
 trā* be used: “ O eight-footed animal! O sportful
 “ native of the *Chāndrā Bhāgā* mountains! thou
 “ eight-formed long-armed animal*; thou who art
 “ called *Bhairāvā*: salutation to thee again and again!
 “ assume the terrific form, under which thou de-
 “ stroyest the wild boar, and in the same manner de-
 “ stroy 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 Cāsiṣu* was destroyed.” I have now

* A mark of eminence.

related to thee, O *Bhairāvā*, who art void of sin, the mode of paying adoration to the lion.

Now attend to the particulars relative to the offering of human blood.

Let a human victim be sacrificed at a place of holy worship, or at a cemetery where dead bodies are buried. Let the oblation be performed in the part of the cemetery called *Herucā*, which has been already described, or at a temple of *Cámáç'hjá*, or on a mountain. Now attend to the mode.

The cemetery represents me, and is called *Bhairāvā*; it has also a part called *Tāntrāngā*: 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 *Bhairāvā*; the head is to be presented in the south division, which is looked upon as the place of skulls sacred to *Bhairāvī*; 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,

fore, 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 *Bráhma* in the victim's *Bráhma Rhandra*, (i. e. cave of *Bráhma*, cavity in the skull, under the spot where the *futura coronalis* and *sagittalis* meet*.) Let him worship the earth in his nose, saying, *Medinyaih nãmäh*, and casting a flower; in his ears, *ácásã*, the subtile ether, saying, *ácásáyã nãmäh*; in his tongue, *sarvata muc'ha*, (i. e. *Bráhma Agni*, &c. the regents of speech, &c.) saying, *sarvata muc'hãya nãmäh*; the different species of light in his eyes, and *Vishnu* in his mouth. Let him worship the moon on his forehead, and *Indra* on his right cheek, fire on his left cheek, death on his throat, at the tips of his hair the regent of the south-west quarter, and *Varuna* between the eye-brows; on the bridge of the nose let him pay adoration to wind, and on the shoulders to *Dhãneswãrã*, (i. e. god of riches,) then worshipping the *sãrpã rájá*, (i. e. king of serpents,) on the stomach of the victim, let him pronounce the following *Mãntrã*:

“ O best of men! O most auspicious! O thou who
 “ art an assemblage of all the deities, and most exqui-
 “ site! 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 bene-
 “ volence. Bestow upon me, O most auspicious!

* This is done by casting a flower there, saying, *Brahmaye namah*: salutation to *Brahma*.

“ the bliss which is obtained by the most austere devo-
 “ tion, by acts of charity and performance of reli-
 “ gious ceremonies: and at the same time, O most
 “ excellent! attain supreme bliss thyself. May thy
 “ auspices, O most auspicious! keep me secure from
 “ *Ráshasas*, *Pisachos*, terrors, serpents, bad princes,
 “ enemies, and other evils; and death being inevi-
 “ table, charm *Bhágavati* in thy last moments by co-
 “ pious 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 *Bráhma* 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 *Méhadévi*, the Goddess of the *Yog Niddrá*. (i. e. the tranquil repose of the mind from an abstraction of ideas;) who is the Goddess of the whole universe, the very universe itself. He does not return for a considerable length of time in the human form, but becomes a ruler of the *Gānā Devātās*, and is much respected by me myself. The victim who is impure from sin or ordure and urine, *Cámác'hya* will not even hear named.

By the repetitions of the texts, and forms laid down for the sacrifice of buffaloes, and other animals, their bodies become pure and their blood acceptable to the Goddess *Shívá*.

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 *méhá pataka*, (heinous offences, such as slaying a *Bráhmén*, 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 *méhá 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 beasts or birds 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 which is under three *pacsha* (forty-five days). Let not a beast or bird which is blind, deficient in a limb, or ill formed, be offered to *Dévi*, nor one which is in any respect unfit, from the reasons that 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 *Bráhmén*, or a *Chandala* be sacrificed; nor a prince; nor that which has been already presented to a *Bráhmén*, or a deity; nor the offspring

of a prince, nor one who has conquered in battle; nor the offspring of a *Bráhmén*, 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 these named are not forthcoming, let their place be supplied by a male afs or camel. If other animals are forthcoming, the sacrifice of a tyger, camel, or afs must be avoided.

Having first worshipped the victim, whether human, beast, or bird, as directed, let the sacrificer immolate him uttering the *Mántrá* 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 aquatic 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 *Mādirā* (spirituous liquors) 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 cocoa-nut 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 liquors, except those 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 imminent 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 Gandhā Suctāhs*, and the texts *wādrāng*; 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 victim's neck therewith.

Then let the text *Ambé A'mbicé*, &c. and the *Row-drā* and *Bhairāvā* texts be used, and *Dévi* 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 north-east, or south-west, 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 south-west, power; if in the south, terror; if in the west, profit; if in the north-west, 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 north-east, loss; in the east, dominion; south-east, wealth; the south, victory over enemies; if in the south-west, fear; if in the west, attainment of kingdom; if in the north-east, prosperity; this rule, O *Bhirāvā*! holds good for all animals, but not for aquatic or oviparous creatures.

If the heads of birds, or fishes, fall in the south, or south-east, quarter, it indicates fear; and if any of the other quarters, prosperity.

If a noise, proceeding from the chattering of the teeth of the victim's severed head, or snapping of the beak is perceptible, it indicates alarm. If tears proceed from the eyes of a human victim's severed head, it indicates destruction to the prince.

If tears proceed from the severed head of a buffalo at the time of presenting it, it indicates that some foreign inimical prince will die. If tears proceed from the eyes of other animals, they indicate alarm, or loss of health.

If the severed head of a human victim smiles, it indicates increase of prosperity, and long life to the sacrificer, without doubt; and if it speak, whatever it says will come to pass.

If the sound *Hoonh* proceeds from the human victim's severed head, it indicates that the prince will die; if phelgm, 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 discharges fæces or urine, or turns about, it indicates certain death to the sacrificer: if the victim kicks 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 *Mehā Cawfici Māntrā*.

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

Let the *Cawfici** *Māntră* be uttered, and the sacrificer say *Eṣhā bāli Sevāhā*, “Mysterious praise to
“this victim.”

A prince *may sacrifice his enemy*, having first invoked the ax with 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 increase 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, deprive the foe of life also.

Let him first say, “O Goddess of horrid form, O
“*Chāndicā*! 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 *Mahamari*! Spheng!
“Spheng! eat, devour.” Let him then place flowers upon the victim’s head. The victim’s blood must be presented with the *Māntră* of two syllables.

If a sacrifice is performed in this manner on the *Mehanawani* (the ninth of the moon in the month of *Aṣṣim*,) let the *Homa*, (i. e. oblation to fire,) be performed with the flesh of the victim.

* The *Cawfici Mantra*: “Hail *Cawfici*! three-eyed Goddess; of most terrifying appearance, around whose neck a string of human skulls is pendant, who art the destroyer of evil spirits, who art armed with an ax, the foot of a bed and a spear, *Rhing Cawfici*. 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 eye brows, 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 *sangcul*, 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

more than is necessary. He who willingly offers the blood of his body and his own flesh, the size of a grain of linseed, *mas̄ha*, *tila*, or *mudya*, 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 the body of *Dēvi* herself; after which he becomes a ruler of the universe.

He who, for a whole night, stands before the Goddess *Sivā*, 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 in the *Ganadevatas*.

He who, for a single *śhana*, (a short space of time,) holds the blood which proceeds from a victim's head in his hands, standing before the Goddess in meditation, obtains all that he desires in this world, and supremacy in the *Dēvi Loe*.

Let the learned, when he presents his own blood, use the following text followed by the *Mula Māntrā*, or principal text used in the worship of the Goddess *Dēvi*, under the form which she is at that time addressed:

“ Hail! supreme delusion! hail! Goddess of the
 “ universe! Hail! thou who fulfillest the desires of
 “ all. May I presume to offer thee, the blood of
 my

“ 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. Salu-
 “ tation 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
 “ ſyllables, *hōng hōng*. To thee I preſent this au-
 “ ſpicious 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 terrific, be terrific:
 “ ſeize, deſtroy, for the love of *Ambicá*, the head of
 “ this enemy.”

Having ſtruck off the head, let him preſent it, uſing the texts laid down hereafter for the
 3 occasion,

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 *Rāṣṭa drāibaiḥ*, (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'hā Māntrā* is to be used on the night the *Viśāc'hā* mansion. Let the sacrificer contemplate two attendants on the Goddess, as having fiery eyes, with yellow bodies, red faces, long ears, armed with tridents and axes in their two right hands, and holding human 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 straggling 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 *Chāndicā*, the victim's head having been cut off, must be sprinkled with water, and afterwards presented with the texts laid down.

The sacrificer may draw an augury from the motions of the slain victim when near expiring; and for so doing he must first address the Goddess, considering the soul of the victim as taking its departure in a car, and his body as a holy spot: "O Goddess! make known unto me, whether the omens are favourable or not."

If the head of the slain victim does not move sometime 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 sacrifices laid down and communicated by me to you. I will now inform you what other oblations may be made.

Thus ends the *Rudhirādhyāyā*.

XXIV.

AN ACCOUNT OF THE PEARL FISHERY
IN THE GULPH OF MANAR,

IN MARCH AND APRIL, 1797.

BY HENRY J. LE BECK, ESQ.

COMMUNICATED BY DOCTOR ROXBURG.

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 *Porto-novo* 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 of *April*, as, after that time, the boats would not be able to reach the pearl banks, and the water being then so 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 fishing 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 opinions, 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 *Jafnas*, of all the fisheries that have been undertaken at *Ceylon* since 1722; a translation of which is to be found in *Wolfe'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 adviseable, 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 which use

* *Manara*, properly *Manar*, is a *Tamul* word, and signifies a sandy river, from the shallowness of the sea at that place,

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 *Seevel* 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 part 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, pangolines, 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 inquiries. 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*, Linn.‡, *astrea hyotis*§, *ostr.*

* Scallops.

† Alpha cockle.

‡ Radiated razor shell.

§ Double cocks-comb.

Forskolii, ostr. *Malleus**, *mytilus hirundo*, Linn.†, *spondilus crocius*, *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 others of inferior kinds. Amongst the zoophytes, many valuable species of *spongiæ*, *corallinæ*, *satulariæ*, &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 farther investigation, as we are 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 number 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 an *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 *Bráhmen* to err.

* Hammer oyster; these were pretty large, but many broken and some covered by a calcareous crust. It is very probable that, among these, there may be some precious white ones.

† Swallow muscle.

§ Diving snail, (Grew, Mus.)

‡ The wood piercer.

|| 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, futtlers 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 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 cocoa nut 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

little finger of the same hand into the water of the cocoa 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 *Hindu* 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 me to mention, 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, moschetoes, and other vermin; all together 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 pearl shells; 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 came 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 *Con-datchey* 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 sunrise, 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 use of ten divers, who are called

* 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.

in *Tamul*, *kooly 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 pyramidal shape, rounded at the top and bottom. A large hair rope is put through a hole in the top. Some of the divers use another kind of stone shaped like a half moon, to bind round their belly, so that their feet may be free. At present these are articles of trade at *Condatchey*. The most common, or pyramidal stone, generally weighs about thirty pounds. If a boat has more than five of them, the crew are either corporally punished or fined.

The diving, both at *Ceylon* and at *Tutucorin*, is not attended with so many difficulties as authors imagine. The divers, consisting of different 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 salt water. They are ignorant of the utility of diving bells, bladders, and double flexible pipes. According to the injunctions of the shark conjurer 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 fathoms, 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 hair 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 reaching the bot-

* Fishermen of the Catholic religion.

tom, he hangs the net round his neck, and collect's 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, he 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 *Collish*, 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 Dr. 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 surpris'd 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 whirlpool, 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 conjurer has performed his ceremonies. This prejudice is so deeply rooted in their minds, that the government was obliged to keep two such conjurers always in their pay, to remove the fears of their 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*, *Pilläl Kadär*, 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 conjurer himself, understands, which he, standing on the shore, continues muttering and grumbling from sun rise until the boats return; during this period, they are obliged to abstain from food and sleep, otherwise their prayers would have 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 conjurers 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 conjurer 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

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 dexterous. 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 happens 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 these the boat owners and pur-

* These are the individuals who 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. 3350 This induces me to believe that it has never yet been accurately described: it does not resemble the *ascidia* of LINNÆUS, 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 the 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 bronchiæ 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. Nat. 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 carved 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

* 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 member 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.

round the muscular column above-mentioned, 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 *pedoo-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 servants 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 curries, 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 nudati* (vide CHEMNITZ'S New System, 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 these 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 above-mentioned. We find them in general near the earth, and on both sides of the mouth. The natives entertain the
same

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 *Bráhmén* informed me that it was recorded in one of his *Sanfcrít* 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 mistakes; for although these animals often penetrate the lower 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 then 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 these worms take up their habitations in the nodes, in order to protect themselves from the attacks 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 decess. 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

* The Rev. Mr. CHEMNITZ at *Copenhagen*.

extravasations may be caused by heterogeneous 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 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 increase may have separated and fallen into the cavity of the shell. Those compact ones, fixed to the shells seem to be produced by 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 bright red lustre; others are grey or blackish, without any shining appearance, and 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 by turns; and in an impure pearl I met with one of a clear water, though in the centre 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 have 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-shells, whether they contain pearls or not. Those that have a thick calcareous crust upon them, to which *serpulæ* (sea tubes) *Tubuli marini irregulariter intorti*, *Crista-gali Chamar lazuras*, *Lepas tintinabulum*, *Madreporee*, *Millipore*, *Cellipore*, *Gorgonæ*, *Spongiæ*, and other Zoophytes are fastened, have arrived at their full growth, and commonly contain the best pearls; but these that appear smooth, contain either none, or small ones only.

Were a naturalist to make an excursion for a few months to *Mánar*, the small island 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 foliaca*, LINN*, *Tell. Spenglerii*, *Arca culculata*†, *Arca Noæ*, *solen anatinus*, LINN. *Ostrea Isognomum*, *Terebellum*, *albidum*, *striatum*, *Turbo scalaris*‡, *Bula volva*, LINN||, *Vexillum ingritarum*, &c. Amongst the beautiful conc shells: *Conus thalassiarachus Anglicanus* cullatus§, *amadis thalassiarachus*, *con. generalcis*, LINN. *c. capitaneus*** , *c. miles*††, *c. stercus muscarum*, *c. rete aureum*, *c. glaucus*|||, *c. cereola*, *regia corona murus lapidius*, *canda erminea societas cordium*. There are many others besides those already mentioned, equally valuable and curious.

The great success of the Rev. Doctor JOHN in conchology, when at *Tutucorin*, assisted by G. AN-

* The golden tong.

† Royal faircase.

‡ Red *English* admiral.

†† Great sand flamber.

† Mounkscape.

|| Weaver's shuttle.

** Green flamber.

||| Capt. Gouw.

GELBECK, with a boat and divers: and the capital collections made by his agents, whom he afterwards sent there with the necessary instructions and apparatus, may be seen in CHEMNITZ's elegant cabinet of shells, in 4to (with illuminated plates); and how many new species of Zoophytes he discovered, we learn from another German work by ESPER, at *Erlangen*, the third volume of which is nearly finished.

ASTRONOMICAL OBSERVATIONS MADE IN THE UPPER PROVINCES OF HINDUSTAN.
BY WILLIAM HUNTER, ESQ.

LATITUDES OBSERVED.

1795.	Place.	Sun or Star.	Latitude.			Remarks.	Mean Latitude.
Feb. 23	Nawabgunge; Chubbooterah E.	☉ M. A.	27	26	46	clear, moderate.	° ' " "
24	Alygunge; Mofque S. 66 E.	☉ M. A.	27	30	18	ditto. ditto.	[413]
25	Doomree; Fort. S. 11 E. dist. 2. 7. Fs.	☉ M. A.	27	33	13	ditto. ditto.	
26	Erjunpoor; N. 61.—89 W. 1. 75. Fs.	☉ M. A.	27	41	12	ditto. ditto.	
27	Manhera; tents close to the town.	☉ M. A.	27	44	45	cloudy, ditto.	
28	Secundra; (named Raw.) N. 30. 72. E. 3. 25. Fs.	☉ M. A.	27	41	29	ditto. ditto.	
March 2	Mindoo; Mr. Orr's house. S. 34. E. 4. Fs.	☉ M. A.	27	37	56	clear, ditto.	} 27 38 8 °
3	Ditto	☉ M. A.	27	38	17	cloudy, ditto.	
4	Ditto	☉ M. A.	27	38	11	thin slit clouds. do.	
5	Coel; General Deboigne's house	☉ M. A.	27	54	4	clear, windy.	} 27 54 6 °
6	Ditto	☉ M. A.	27	54	8	ditto. moderate.	
15	Jooar; dist. 2. 25. Fs.	☉ M. A.	27	36	42	ditto. windy.	} 27 31 33
16	Hunseeah Gunge; dist. 3 Fs. mosque of Abdul-nubbee Khan, at Matra. S. 26. W.	☉ M. A.	27	31	33	ditto. moderate.	
17	Matra; Litcha Bagh	☉ M. A.	27	29	46	ditto. ditto.	
18	Areeng; Ft. N. 71. E. 1. 5. Fs.	☉ M. A.	27	29	50	ditto. ditto.	

1795.	Place.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.
March 19	Deeg; gate. N. 72. E. 3. 25. Fs.	☉ M. A.	27 29 6	clear, windy.	0 " " "
20	Nugur; S. 83. E. 3. 7. Fs.	☉ M. A.	27 26 13	ditto. moderate.	
21	Alinagur; S. 30. 40. E. 1. M. 7. 3. Fs. Cohery Pahang. N. 2. W. 4. M. 2. 3. Fs.	☉ M. A.	27 31 58	ditto. ditto.	
30	Jablee, or Bijouly; Ft. S. 46. 67. W. 2. Fs.	β Urf. Maj.	27 22 1	ditto. ditto.	
31	Ditto	α Hydrae.	27 24 8	ditto. ditto.	
				brightness of the moon observed the star.	27 23 4 5
April 7	Maat; S. 47. E. N. 49. E. 75. Fs.	β Urf. Maj.	27 37 16	clear, moderate.	
8	Nop; Fort. N. 20. W.—N. 17. E. 2. Fs. Ditto	α Hydrae.	27 51 24	ditto. ditto.	
9	Tappel; Ft. N. 12.—62. W. 1. 4. Fs. Ditto	β Urf. Maj.	27 50 16	ditto. ditto.	27 50 50 0
10	Ditto	α Hydrae.	28 3 9	clear, windy.	
11	Ditto	β Urf. Maj.	28 3 17	ditto. moderate.	28 3 9 0
11	Raghoopoor; N. 8. E.—N. 85. W. 0. 5. Fs.	α Hydrae.	28 3 1	ditto. ditto.	
12	Duncour; gate. S. 5. E.—3. 5. Fs.	α Hydrae.	28 14 46	ditto. ditto.	
13	Soorejpoore; S. 5. W.—S. 50. E. 1. 6. Fs.	α Hydrae.	28 21 31	ditto. ditto.	
14	Putpurgunge; S. 46.—81. E. 2. 3. Fs.	α Hydrae.	28 31 10	ditto. ditto.	
15	DEHLY; garden of Shah Nizam-ud-deen.	α Hydrae.	28 36 47	ditto. ditto.	
		α μ	28 38 55	ditto. ditto.	
		α μ	28 38 32	ditto. ditto.	28 38 36 0
16	Ditto Ditto	α Draconis.	28 39 37		

1795	Place.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.	
April 20	Ditto, palace of Sufder Jung.	α Hydrae.	28 40 47	clear, moderate.	28 40 12 5	
		Aliath.	28 10 24			
		α η	28 40 2			
June 15	Secundra; N. W. by N. 2. 3. Fs.	α Draconis.	28 39 37	thin clouds, moder.		
	19 Anoopshober; Lieut. Christie's bungalow.	α η	28 26 5	clear, calm.		
	20 Ditto	α η	28 23 5	ditto. ditto.		
July 9	Camp, on bank of Neem-ca-nullah Biswah. S. 40. W. 1. M. 2. 2. Fs.	α Pisc. Aust.	27 49 59	ditto. moderate.		
		Ditto.	27 48 37			ditto. ditto.
1796	Amelia (village 1 mile from Choobeepoor). N. 12. W. 1. 8. Fs.	\odot M. A.	26 36 6	ditto. ditto.	[415]	
Feb. 13	Daipoor; camp close to an old garden.	\odot M. A.	26 58 25	ditto. ditto.		
		\odot M. A.	27 5 10	thin sitting cl. do.		
19	Amirtgunge; gate. N. 60. W. 4. Fs.	\odot M. A.	27 21 48	clear, moderate.		27 21 51 0
27	Dehliah; tent near the artillery ground, Cungalalah. S. 66. E. one mile.	\odot M. A.	27 21 48			
March 3	Ditto	Sirius.	27 21 54	thin clouds, calm.		
4	Neemkarouly; gate. E. o. 8. F.	\odot M. A.	27 19 2			
	Ditto	β Can. Maj.	27 18 58	clear, ditto.	27 18 58 5	
	Ditto	Sirius.	27 18 54	clear, ditto.	27 18 58 5	
	Ditto	δ Can. Maj.	27 19 00			

1796	Place.	Sup or Star.	Latitude.	Remarks.	Mean Latitude.	
March 5	Agut-ke feray; N. 23.—60. E. 2. Fs.	☉ M. A.	27 20 53	thin clouds, moder.	0 ' " "	
	Ditto	β Can. Maj.	27 21 5	} clear, calm.	} 27 21 12 57	
	Ditto	Sirius.	27 21 1			
	Ditto	δ Can. Maj.	27 21 52			
6	Aleepoor-R,hera; S. 25.—62. E. 1. F.	☉ M. A.	27 19 31	clear, windy.	} 27 19 39 0	
	Ditto	α ♃	27 20 2	} ditto. moderate.		
	Ditto	β Urf. Min.	27 19 35			
	Ditto	β ♃	27 19 27			
7	Beechmar; N. 37.—77. E. 1. F.	α Draconis.	27 20 31	} ditto. ditto.	} 27 20 18 0	
		α ♃	27 20 39			
		β Urf. Min.	27 20 5			
		β ♃	27 19 57			
8	Jumlapoor; N. 20.—39. E. 1. 6. F.	☉ M. A.	27 25 31	} ditto. ditto.	} 27 25 11 0	
	Ditto	β Can. Maj.	27 25 5			
	Ditto	Sirius.	27 24 54			
	Ditto	δ Can. Maj.	27 25 15			
9	Sukeet; Fort S.—S. 51. E. 1. F.	α Draconis.	27 26 39	ditto. ditto.	} alt. suspect- edtoogreat	
	Ditto	α ♃	27 25 24	do.do.		
	Ditto	β Urf. Min.	27 27 5	} ditto. ditto.		} 27 26 20 0
	Ditto	β ♃	27 25 50			
10	Ditto	☉ M. A.	27 26 42	ditto. windy.	} 27 26 20 0	
	Ditto	β Urf. Min.	27 26 42	} ditto. calm.		
	Ditto	β ♃	27 25 57			

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1796	Place.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.
11	Etap; S. 33. E.—S. 12. W. South gate, S. 7. E. 2. 1. F.	☉ M. A.	27 34 18	clear, windy.	0 ' " "
	Ditto	β Can. Maj.	27 33 29		
	Ditto	Sirius.	27 34 1		
	Ditto	δ Can. Maj.	27 35 4		
	Ditto	β Urf. Min.	27 34 12		
12	Nadowly; Ft. S. 76. E.—N. 88. E. 3. 5. Fs.	☉ M. A.	27 34 55	clear, windy.	27 34 15 0
	Ditto	Sirius.	27 34 16		
	Ditto	δ Can. Maj.	27 34 45		
	Ditto	β Urf. Min.	27 35 5		
	Ditto	β ♄	27 34 27		
13	Secundra (Raw); S. 74. E. N. 35. W. close.	☉ M. A.	27 41 33	ditto.	[417]
14	Mulloy, Mr. Stewart's house.	☉ M. A.	27 42 45	ditto.	
Ditto	α Draconis.	27 42 34	ditto.	calm.	
Ditto	α ♄	27 42 18			
Ditto	β Urf. Min.	27 42 12			
Ditto	α ♄	27 42 28			
15	Jelaly, Mr. Longcroft's house; N. E. 3. 5. Fs.	α ♄	27 51 56	ditto.	27 52 10 0
	Ditto	β Urf. Min.	27 52 6		
	Ditto	β ♄	27 52 28		

1796	Place.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.
March 16	Bellah, Mr. Lenham's house; S. 85. E. 4. 7. Fs.	α Draconis.	27 55 2	ditto. ditto.	27 54 53 0
	Ditto	α \sphericalangle	27 54 48		
	Ditto	β Urf. Min.	27 55 13		
	Ditto	β \sphericalangle	27 54 28		
17	Atrawloy, North gate; S. 16. W. 2. 7. Fs.	δ Can. Maj.	28 3 16	thin clouds, moder.	28 2 14 0
	Ditto	α Draconis.	28 2 2		
	Ditto	α \sphericalangle	28 1 27		
	Ditto	β Urf. Min.	28 2 5		
	Ditto	β \sphericalangle	21 2 21		
18	Debay; S. 2. E. --- S. 13. W. North gate; S. 6. W. 7. 2. Fs.	\odot M. A.	28 14 1	clear, moderate.	[418]
20	Anoopsheher; Col. Ware's bungalow.	\odot M. A.	28 23 6	clear, windy.	
21	Ditto	\odot M. A.	28 23 21	ditto, ditto.	
22	Ditto	α \sphericalangle	28 22 49	clear, calm, stars rather obscured by the brightness of the moon.	
	Ditto	β \sphericalangle	28 23 14		
24	Atrawley; South gate, dist. 4. 6. F.	δ Can. Maj.	28 1 31	clear, calm.	28 1 54 0
	Ditto	η Can. Maj.	28 1 43		
	Ditto	γ Navis.	28 2 36		
	Ditto	α Hydrae.	28 1 48		

1796	Place.	Sun or Star.	Latitude.	Remarks.	Mean Latitude.
March 29	Aly gunge; E. gate, dist. 1. 3. Fs.	♂ Navis.	27 30 27	clear, windy.	27 29 38 0
	Ditto	α Hydrae.	27 29 54		
	Ditto	β Urf. Maj.	27 29 9		
	Ditto	γ Urf. Maj.	27 29 3		
May 30	Betourah; N. 62. E. 1 mile, right hand bank of Ganges.	α ♀	26 2 52	ditto. ditto.	26 1 54 0
		α Draconis.	26 1 23		
		α ♀	26 1 29		
		β Urf. Min.	26 1 51		
3 ^d	Yacoot gunge; (small village left hand bank of Ganges); Sharadpoor; S. 22. W. about 2 miles.	α ♀	25 40 2	clear, moderate.	[419]
June 1	Aliahabad; Ft. S. E. angle	Aliath.	25 24 54	hazy, calm.	
		α ♀	25 25 54		
		α ♀	25 25 14		
2	Mudura, near Litchageer.	Aliath.	25 17 47	}	
		♀	25 17 31		
		α Draconis.	25 16 6		
		α ♀	25 16 42		
3	Mirzapoor; E. 1 mile.	α Draconis	25 9 6	clear, moderate.	
		α ♀	25 10 20		
		β Urf. Min.	25 9 43		

Eclipses of JUPITER'S SATELLITES observed with DOLLOND'S *Achromatic Telescope magnifying 80 Times.*

Apparent Time	S	In or Em.	Place of Observation.	Longit.	Weather.	Remarks.
1794 D. H. M. S.				° ' "		
Jan. 24 17 28 44	1	Im	Gandah.	82 11 0	a little hazy, mod	
March 4 15 54 8	1	Im	Lucknou (Mr. Orr's house).	80 39 15	clear, calm	
31 14 59 15	2	Im	Meinpoory.	78 30 15	ditto, windy	The brightness of Jupiter made the satellite indistinct.
April 29 12 41 39	1	Im	Truttegurgh.	79 18 0	ditto, moderate.	
May 2 14 44 37	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	Kankpoor (Mr. Yeld's bungalow).	79 55 0	ditto, moderate	
1795						
March 23 17 9 31	1	Im	Camp near Alinagar	76 51 15	ditto, ditto.	
May 1 15 41 42	1	Im	DEHLY, Sufden Jung's house.	76 42 0	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.	
17 13 58 6	1	Im	Ditto.	76 48 15	ditto, ditto.	The satellite is certainly visible till this time; as the sky was not very clear, the immersion may have been
27 14 29 15	3	Em	Ditto.	78 2 45	clear, windy.	
28 13 18 41	2	Im	Ditto.	76 43 15	ditto, ditto.	some seconds later. As the telescope was shaken by the wind, the emersion was probably a little earlier.
June 4 15 55 00	2	Im	Ditto.	77 8 45	ditto, ditto.	
22 10 22 51	2	Im	Anoopsheer	77 48 45	ditto, ditto.	
July 11 10 38 40	1	Im	Erjunpoor.	78 34 45	ditto, moderate.	The observation very distinct; but there is some uncertainty in the time, from an irregularity in the watch this
Nov. 15 6 42 30	2	Em	Futte-Gur.	79 49 15	ditto, calm.	
21 7 23 22	1	Em	Ditto.	80 2 45	ditto, ditto.	
Dec. 14 7 29 12	1	Em	Ditto.	79 49 15	ditto, ditto.	

day. It had been losing at the rate of 58 seconds a day, mean time; but between the 4th, and 7 minutes and a quarter, and the 5th, at the same hour, lost 2 minutes 59 seconds, from being wound up five hours later than usual, i. e. at 5 P. M. on the 4th instead of noon. I observed again at a quarter after four P. M. and found the loss, in 9 hours apparent time, to be 40 seconds. Allowing this rate from 4 A. M. to 7 and a quarter, and the loss in that time will be 16 seconds, giving watch slow for apparent time, 2 hours, 18 minutes, 30 seconds, at the time of observation, and this is the quantity here allowed. Planet rather near the horizon.

[420]

The Variation of the Compass, observed by the Sun's Azimuth. N. B. Both the Altitude and Azimuth were taken with the Theodolite.

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

1796, April 15, at Futte-Gur; observed the following Distances of the Moon from Aldebaran and Spica.

Time by Watch.			Distant Moon and Aldebaran, nearest Limb.			Time by Watch.			Distant Moon and Spica, farthest Limb.		
H.	M.	S.	°	'	"	H.	M.	S.	°	'	"
6	43	22	61	10	51	8	1	58	72	54	30
	50	20		13	0		5	10		52	15
	57	5		15	15		8	46		51	15
7	3	45		18	0		12	2		49	45
	9	5		19	45		15	49		47	30
6	56	43	61	15	15	8	8	45	72	51	3

Also the following Altitudes for rectifying the Watch.

Time by Watch.	Altitude Aldebaran.	Time by Watch	Altitude Spica.
7 36 58	24 39 45 double angle	7 46 4	64 40 0 double angle
		48 33	64 36 30
		51 9	65 34 15

Error of the Sextant 2' 15" subtractive.

Results

Watch flow by Aldebaran
by Spica

H. M. S.

46 49
42
46
47

Mean flow for Apparent Time

46 46

	Apparent Time.	Apparent. Moon.	Altitude. Star.	True distance : centre Moon and Star.	Longitude.
	H. M. S				
1st set Alde.	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 Futte-Gur, by mean of both sets, 79 54 45.

N O T E

Respecting the Insect described in Page 213.

THIS insect is the *Meloë Cichorri* of LINNÆUS. The following extract from a late publication will shew 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 *Meloë*
 “ *Cichorii*, Lin. towards which Doctor MANNI has
 “ endeavoured to direct the attention of his country-
 “ men. It remains from *May* to *August*, and especi-
 “ ally during *June* and *July*, in astonishing quanti-
 “ ties, not only upon the *cichoreum*, but also upon
 “ the *cerealis carduus* and *cynora cardunculus*. The
 “ common people have long used the liquor that dis-
 “ tils from the insect, when the head is torn off, for
 “ the purpose of extirpating warts; and Mr. CASIMIR
 “ SANSO has often employed it in lieu of the common
 “ blistering drug: but to render it more generally
 “ useful, Doctor MANNI has made a variety of expe-
 “ riments, and found that forty-five grains of the
 “ MELOE, and fifteen grains of *Euphorbium*, fer-
 “ mented with flour and common vinegar, and well
 “ mixed up, made a most excellent blistering plaister.
 “ The proportions must be increased, or diminished,
 “ according to the age, sex, and constitution of the
 “ person; but the above mentioned quantity usually
 “ produces a proper effect in thirteen or fourteen
 “ hours. These insects are collected morning and
 “ evening, and put into a covered vessel, where they
 “ are kept until they are dead, when they are sprink-
 “ led with strong vinegar, and exposed to the hot sun,
 “ until they become perfectly dry; after which they
 “ are

“ are put into glass bottles and carefully kept from
 “ humidity.”

Travels to Naples by CHARLES ULYSSES, of SALIS
 MORSCHLINS.—*Translated from the GERMAN*, by
 ANTHONY AUFRERE, Esq. London, 1795, p.
 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.

Sept 28, 1797.

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