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SOME REMARKS ON THE SOIL AND CULTIVATION ON THE WESTERN SIDE
OF THE RIVER EOGHLY: AD 1791

39.1

NOTES

Manufactures:

(a) These distinctions (of which they are not only tenacious but conceited to excess, in the supposed superiority over the rest of mankind) are diminishing within the Company's provinces. That from their unprincipled conduct when engaged in the service of Europeans, as from the evils entailed by the sacerdotal influence in corrupting the morals of the other orders of the community, unveiled principally in our courts of justice from the general litigious disposition prevailing pervading all orders of the native community.

The natives comprized in this tract principally composed of cultivators of the soil, fishermen, or mechanics such as smiths, carpenters, boat-builders, potters and weavers; of the last about 25 families residing in Scibpoar, and about thrice this number in the extent of the margin of this district bathed by the river Houghley. (ff 75v)

The species of cloth manufactured principally confined to that in use amongst the lower orders, known under the following names scarie and jore. But in the village of Balleah Adampore between 3 and 400 looms are said to be employed in the manufacture of the following species of cloth viz: Burreah-than, Rosaul, Dinnies, Cassaberie, Keinsce and Ghullabund.

Their process in spinning, weaving and finally dressing their cotton manufactures, with the implements in use would require to be detailed (in the best manner) by an adept in the branch.

The striking simplicity characteristic of all their mechanic processes to a common observer appears to run through the whole, united to an uncommon degree of passive apathy patient and unremitting industry in the native.

Cements and Plaister: They have long been in possession of a glue formed with the gummy part of wheat mixed with lime, a preparation more impervious to moisture than the glues in common use. Nor is the preparation in use in Barbary (mentioned by Dr Shaw) composed of the curd of milk united with lime unknown.

They further possess two kinds of mortar probably peculiar to themselves, if not from time immemorial - viz: a cement composed of pounded bricks and lime mixed with water containing a considerable quantity of coarse (ff 76r) sugar: this last ingredient producing nearly the effect attributed to Rosalnai or Terrace, causing the mortar to set quickly; and in a short time acquiring a great degree of hardness. The proportion of ingredients composing this mortar differs in relation to the degree of causticity of the lime employed. If long elacked two measures of brick-dust to one of lime and more sugar being added to mortar.

Another ingredient used in the composition employed in forming the flat terraced roofs of houses, obtained from steeping a species of grain (of the vetch kind termed netter-angue (?) by the aborigines) in water. The period for obtaining the proper state of the decomposition of this ingredient and drawing off the water, on its attaining a viscus quality joined to a very offensive smell; but the particular effect of this last ingredient not so obvious as that apparently produced from the acid of sugar used in the other process. An extract by fire of the fruit of the Hurrutukah (understood to be the Mirabolans ?) applied to the same purpose.

YORK: MS. Mur F 95/I: by Col Robert Ryd (sent to W. Jones)

A plaister is likewise made from calcined shells which in its whiteness, gloss and durability may be said to rival Persian marble. This it in some degree owes to the labour employed in polishing it with a steel oragate burnisher and careful removal of the moisture, as it exudes, with fine muslin rags; equal care being taken in preparing the lime from the purest calcareous substances. The Cowrie shells said to afford the best. (ff 76v)

(b) A line some hundred yards long furnished with floats, as used for suspending nets, is swept in shallow water towards the tail of a bank. In the bite of this suspended cord a small boat is drawn along covered with a horizontal matting projecting considerably over the boat and but a few inches above the surface of the water with its edges turned up about 5 or 6 inches. The fish driven towards the bank endeavour to escape by leaping over the bite, when they fall upon the matting. This process mostly used for catching small and flat fish.

In inland deep creeks the fish are driven into wiers (?) and nets extended across, by disturbing their auditory nerves. The fishermen in boats extended from side to side of the creeks proceed leisurely abreast, each boat being provided with a noisy clattering instrument, made of split bamboo which is plied whilst they approach the nets.

In the same situation a great quantity of brush and faggot (?) (ff 77r) wood is thrown promiscuously into the creek but in a circular form reaching nearly from the bottom to the surface: this operation takes place about sunset. In the morning before sunrise this mass of brushwood is surrounded by a net extending from the bottom and supported with bamboo several feet above the surface. The fishermen enter this enclosure after sunrise and by diving and other means remove the whole of the brushwood throwing it on the outside of the net, which enables them to draw with the net all the fish collected there during the night.

The explanation given respecting the congregation of fish drawn together by this expedient they attribute to the shelter afforded by the brushwood to the small fish against being preyed upon by the larger species, and the presence of the first attracting the latter laying in wait for their prey.

The otter is also tamed by the Indians and rendered subservient to the catching of fish. This I have seen practiced by individuals but is not in general use by the fishermen.

They are also in possession of several ingredients for intoxicating fish and robbing ponds. They also catch with their hands fish frequently muddy (ff 77v) bottoms by diving.

The configuration of their fishing boats appears well adapted to the limited sphere of their action; the experienced rapidity of the tides - the degraded and precarious circumstances of the natives employed in the fisheries, their construction conformable to the ideas first probably called forth by the inexperienced primitive adventurers on the liquid element; a cone with the apex foremost. The form undergoes some approximation to the models obtained from contending with the more boisterous element, as the situation of the natives approach the mouth of the river.

But in the exertion of the mechanic powers of the human body they have called in aid resources unpracticed I believe in the western world, namely the action of the feet in plying the paddle or oar, exhibited by the left hand supporting the oar or paddle as a fulcrum in the place of the row-locks while it is plied with the opposite leg, grafting the extremity or handle of the oar or paddle with the toes. On such occasions the

fisherman is sometimes seen smoking the hookah held by the right hand, the boat continuing its course by this temporary substitute. In other situations the oar is grasped by both hands performing the office of a fulcrum whilst the extremity is plied by the opposite foot. On common occasions the oar or paddle is only plied with both hands. (ff 78r)

(c)

That they possess elementary treatises in chemistry, medicine, grammar, logic, ethics and theology, and in the latter sciences perhaps as deep as any of our ancient and modern writers, may be inferred from the enumeration in the following extract from the *AyteenAkbarry* Vol 3rd page 95:

The Sciences of the Hindoos:

"The Hindoos have upwards of three hundred arts and sciences. The author of this work have associated himself intimately with the learned men among them, has heard and comprehended the various doctrines of each sect and profession. It is impossible in a single volume to give a particular relation of such a variety of subjects but for the satisfaction of those who are uninformed I shall sketch out the rudiments of each art and science, without offering any argument for or against them. This may be in useful to some future ingenious investigator who wishes to compare their doctrines with those of Plato and the and commentators in the sacred text.

(page 167):

"In the extensive empire of Hindostan there are so many arts that they cannot be described. Something however should be said of them which may be an acceptable present to the curious enquirer and perhaps excite his further curiosity."

(d)

Music:

Flute: something approaching melody, but an insipid, languid, monotonous taste is attempted on a flutaback made in a rude and artless manner from the joint of a bamboo pierced with holes by a hot iron. This instrument in use amongst only a few of the lowest orders.

Hautboy: used in the marriage and religious processions. Something like a wild kind of recitation, in a very harsh tone (doubtful if subjected to regular measure)

Of their vocal music; such songs as appear to approach to our melody, it may be doubted whether they are not borrowed from the upper country, of which the two following will convey some idea. The first an invocation of the Deity:

(Hurry Kistna! Hurry Kistna! Kistna Kistna Hurry Hurry:
Hurry Ram Hurry Ram Ram Ram Hurry Hurry)

The second some verses comprising a dialogue between a monkey and a bear:

(ff 78b.r)

An air performed on the Binoy (a species of the Hautboy) in their wedding processions: of this only an imperfect idea can be formed requiring a more minute examination than will repay the trouble in the opinion of most modern musicians.

Extract Communicated by Mr G L :

In recurring to the Indian musician I only found what indeed I expected, that without a very laborious and minute examination of their keys, measure, execution and cadences it would be very difficult to convey by our mode of notation to the European musician a distinct idea of their Airs with the expression suited to direct the execution; their melody differing so wildly from ours that probably only a savage ear can relish it, or a sense of it duly conveyed by an aborigine musician after being instructed and accustomed to the performance of our melodies. (ff 78c.r)

But the justness of these strictures may probably be called in question. The same person on a more minute attention found this Air resolvable into the underwritten not inelegant if not original melody as performed by the Hautboys accompanied by the drums:

(ff 78v)

The chords of the Indian Violin, stopt by introducing the fingers between the strings touching them with the flat of the nails of the finger.

Trumpets constructed in the Europe form, only gives utterance to harsh jarring unconnected sounds utterly devoid of Air.

Drums of different sizes in an octave progression. These drums are beat in a kind cadenced alternate or more varied succession of strokes, but not embracing the extent of an octave, something like what is heard from smiths' shop when the anvil is beaten with hammers of different sizes. Some of the smaller sort, altho a perfect cylinder and struck at both ends, one is rendered an octave lower by smearing the middle part of the parchment with a plaister of resin.

Guitar and Violin: Their performance alike rude and unengaging; and are seldom seen but in the hands of the natives of the upper provinces.

(e)
Painting, Sculpture, Architecture:

From this remark must be excepted the temples of Gyah and frontier (?) of Bishempore adjoining to this tract constructed in a very different style and apparently from their massy solidity resembling Egyptian under a remoter period than the relation hereunto annexed refers to.

Sciences like these if not originating, fostered by taste and the enjoyment of liberty no traces can reasonably be looked for under the iron reign of despotic anarchy to (ff 79r) which they have been subjected. Of the remains exhibited in their temples a drawing has been given. Of perspective they possess no knowledge, altho under the tuition of European artists they become ready proficient in drawing colouring and carving.

Gunpowder, Cannon and Fireworks:

In use from an unknown period.

Arms: The bow and arrow, matchlock, pike, sword and buckler.

Printings

Unknown althe modern stamps inscribed with magical characters, or from their holy writings recurred to on the occasion of consecrating and impressing their bodies with different colours on the particular festivals already adverted to.

Cotton Manufacture:

The finest cotton thread spun with a spindle but by a different process than practiced with the distaff in Europe. 1st the finest cottons are plucked from the seed with the fingers only, afterwards passed under action of a slender bow string for the purpose of arranging the fibres; it is then spread out and by means of a cylindrical stick forced into a hollow cone from which the fibres wind off by the mere extension of the hand holding the cone, the thread being twisted by the motion of the spindle impressed with the other hand, the lower end resting on a shell (?); the size of the thread conforming to the quantity (ff 79v) primarily selected from the cone forming the specimen int the previous arrangement of the fibres and form of the allowing the cotton to wind off of itself conformably to the first impression given. The spindle a bit of iron a foot long the size of a knitting needle, to which momentum is given by a small compressed ball of clay surrounding the lower part.

Coarse cotton separated from the seed by two cylinders turning different ways and spun with the wheel as practiced in Europe.

Price of Labour:

In the country from 2 to 2½ Rupees. At the Presidency 3 Rupees per month. The rupee two shillings sterling, which makes about 2d to 2½d per day.

Cookery:

In their cookery they possess a process for rendering fresh meat tender, apparently unknown to the professors of this art in the western world, however renowned, namely by steeping or stewing it in sour milk for some hours or macerating it in the juice of ginger; this without imparting any of the flavour of the articles produces the same effect in a more complete manner, than probably the slower and more insalubrious process of spontaneous putrefaction recurred to in Europe.

The bones of fish softened in the same manner so as to be eaten without any ill effect. (ff 80r)

Wax:

Obtained in considerable quantities from the mountainous east and west frontiers, as well as from the overflowed intermediate tract termed Runderlands.

In Calcutta it is manufactured into candles and sold at from 45 to 60 Rupees per maund.

The bee furnishing this wax is of a far more diminutive size and more inoffensive in its sting than that in Europe; the honey of an insipid quality.

Soap:

Of a coarse quality, prepared from a mixture of oil tallow and Sojenutty (supposed to be Natrum).

The fine cotton muslin purified and cleaned by steam. Coarser cloths and body linen with a lixivium obtained from the ashes of the plantain, and other vegetable matters.

Paper:

Formed from the Indian flax of various degrees of fineness. One species of paper used for records (independent of inscribed copper tablets) tinged yellow with argiment to preserve it from insects.

Sugar:

The juice of the sugar cane obtained by a simple machine worked by hand on the principle of the cylinder used in the West Indian islands. The juice granulated into coarse sugar, chrystallised into sugar candy, or refined into loaf sugar. This last process not in common use.

Leather:

The preparation of this article however necessary and in universal use, held in abhorrence by the aborigines and only practiced by the unfortunate lower orders reprobated by their (ff 80v) singular dogma whose hopeless and degraded state has apparently entailed an equivalent dissolution of manners from being subjected to the performance of the vilest offices incident to humanity and being excluded from society of reduced to the necessity of feeding on carrion to support their wretched existence.

Lime, Hurtooka (?) and Allum or a decoction of the tamarind are the principal ingredients employed in preparing the leather for use and dying.

An infusion of the fruit of Hurtooka (?) (supposed the Miraboluna) employed in staining it black.

Red dyes: An infusion of redwood or of a species of stick lac deposited on the branches of the Popul and Behr trees by a particular insect.

Yellow: From a decoction of the Iujsoeah (?) (this tree not ascertained) and Burril bark.

Green: From a solution of the Lajsoerah bark united with filings of copper and borax.

Various other substitutes are resorted to according to the means and abilities possessed such as the common Lac and Quel root, the particulars of which the natives do not readily communicate.

Ink:

For common Bengal writing is formed of rice blackness. One Chuttuck in weight infused in 6 Chuttucks of water for 8 or 10 hours. This is also sometimes ground with lamp-black obtained by burning, common oil under an earthen pot until it attains the requisite consistence. For Persian writing a solution of shell lac and borax is mixt with lamp-black. (ff 81r)

(f)Medicine, Surgery, Chymistry:

Inoculation long in use. All Chirurgical operations held generally in abhorrence and only practiced amongst the aborigines by the inferior orders; inoculation excepted by the Brahmins. Its origin probably lucrative in the practice.

Chirurgery (in which they are considered by us the least advanced) they often succeed, in removing ulcers and cutaneous irruptions of the worst kind, which have baffled the skill of our surgeons, by the process of inducing inflammation and by means directly opposite to ours, and which they have probably long been in possession of.

In the preparation of Cinnabar, Minium, Corrosive Sublimate, Vitriol, Sul Ammoniac, Saltpetre, refining the precious metals; smelting and refining iron, lead, copper, tin and Tutenage (?) (with the various combinations of the last three) preparation of steel of a very high temper, well versed. The manufacture of steel fallen into disuse from the introduction of European steel sold at a cheaper rate. Polishing and engraving precious stones. In the process of dyeing, extracting the precious essential oils for perfumes. Extracting sugar from the cane. Rearing the silk-worm probably from the remotest antiquity. On the process of refining gold and silver, see the appendix.

Alchemy in its application to the transmutation of metals still in vogue amongst the aborigines, and attended with the same impositions practiced in the western world amongst its deluded votaries and by no means by the innocent and harmless process remarked by W.D. Pauw (?). ©

Glass not used in their windows and in the upper provinces where the difference of climate it might sooner call for its advantages - the first more natural substitutes Talc (?) and transparent shells little if at all resorted to, altho strong convex coloured glasses are found in the construction of the hot baths, in use only amongst the Mahomedans throughout Hindostan.

Oil:

Independent of the articles specified in the preceding remarks, oil is extracted from the following vegetables, principally used in medicine and for burning.

1st: From the seed of the Phall Grinchah used in medicine but not cultivated (from 1 to 2 seers per Rupee).

2nd: Opium seed. One maund affording at the rate of 12 seers, price 7 seers per Rupee. (ff 6lv)

3rd: Tobacco seed. One maund affording 6seers at 7 seers per Ru.

4th: Maddish seed: One maund affording 7 seers at 8 seers per Ru.

The preceding articles already adverted to afford oil in the following quantities:

Essence	1 Maund affords	11 Seers
Teel	1 " "	11 "
Ghab (?)	1 " "	10 "
Sursoony	1 " "	12 "
Rye	1 " "	14 "
Coco Nut	1 " "	10 "

The oil expressed in a mill of a peculiar construction worked by a bullock, capable of expressing about one maund of seed or 10 seers of oil per day of 12 hours and the relief of two additional bullocks.

The seed undergoes no previous preparation by heating or pounding, being only moistened with a little cold water, the machine uniting the powers of pounding and pressing.

Eighteen mills employed in Seebpore by eight families. (see annexed drawing of the mill)

Glass:

The composition of glass not practiced, whether known ascertained, altho they cannot convert our glass into weak and ill-proportioned phials.

Altho at the period of the completion of the Aysen Akbary, gilded glasses are noted as the manufacture of the Behar province the same record asserts that the mountains of Berai (?) produce all the requisites for making glass and soap.

© A few lines of quotation in French from author mentioned.

Tobacco: *

Probably cultivated from a far more remote period than the introduction of the use of it into Europe; if not known in the western world before the discovery of America; inferible from its very general cultivation and use throughout India, altho it is to be observed that it is still rejected by the rigid aborigines as reprobated by their dogma or ancient prescription. My enquiries respecting its first introduction and use have proved altogether unsatisfactory. ** (ff 82r)

Corn Mills:

Their corn ground by hand mills of the simplest construction; the cheapness of labour and horizontal surface of the country probably accounting for their not recurring to more complicated machinery; water mills being used in the north east (?) mountainous frontier of Serinagar, and the windmill, altho lately introduced by Europeans at the Presidency not likely to be resorted to by the natives from the expense of the machinery.

(in margin) (The corn either trodden out with oxen, by beating of the ears of the sheaf, against the edge of an inclined board; and freed from the husk in a wooden cylindrical mortar under a heavy stamper (?) moved by the foot.)

Purification of Water:

The impurities contained in the river and pond water are precipitated by the opulent natives by a solution of allum or rubbing the interior surface of the containing vessel with the nut termed Neermoney (?) (the plant producing this nut not ascertained) obtained from the western frontier.

The water is cooled in an unbaked earthen vessel composed of black clay and coarse sand of a texture sufficiently porous to allow the water to exude and moisten the exterior surface, which exciting a constant evaporation, particularly when exposed to a draught of air in the shade, cool the water sufficiently for common use; the luxurious recur to the use of saltpetre (the discovery of this process attributed to the Emperor Akbar: vide Ayeen Akharry); Sal-Ammoniac altho manufactured in the upper provinces and capable of producing the same effect in a greater degree not having been resorted to by the natives probably from their abhorrence of the excremental ingredients from which it is formed.

/enclosed

Their sherbets congealed from a mixture of ice (collected in the cold season) sea-salt and sulphur. The liquid to be congealed/ in very thin earthen vessels: these last put into a cast iron pot lined with a coarse woolen blanket; the ice, saltpetre and sea-salt shewed on them and the whole covered up with coarse blanket. The solution takes place in about half an hour and congeals the contents of the pot.

The ice preserved in ice houses wrapped up in coarse blankets until the setting in of the rains in the middle of June.

Idine:

Principally obtained from the Sylhet frontier made from a mineral of a very hard texture and bluish colour.

Glue:

A very strong kind made from the sinews of the buffaloes. (ff 82v)

* This para under Tobacco should at "3rd" under "Oil" on preceding page. ** In the original there is a short (rather illegible) marginal note against "Tobacco" regarding its introduction into England from some contemporary "History of England".

Pottery Ware:

Of the composition of porcelain and lacquered ware they appear to possess no knowledge, altho the materials are afforded in the and most frontiers. The Chittagong frontier producing a very fine Gum known to Europeans under the title of wood (?) oil. The Patchett and Rangur the Petumu and Kaolien. In the manufacture of China some progress was made by the late of Gyah sufficient to ascertain its practicability.

Their pottery ware of the coarse unglazed kind made from brick clay turned on a wheel suspended horizontally on a pivot. In this article they are excelled by the bordering nations of Pegu and Siam who practice glazing their earthen ware.

In some of the antient building (such as have come under my notice) of Mahomedan architecture small bricks glazed green and white are seen.

Wood turned in a turner's loom (?) is lacquered by the application of gum lac tinged with the different colours. Wood painted in colour is also varnished with a solution of gum Copal (?) termed by the natives Karpah - this ingredient obtained from the ports of the Red Sea (?).

In the manufacture of gold thread - Enamel and Filligree, long practiced.

Indigo:

By the fermentive and boiling process - the facula (?) precipitated with lime water or the gum of the Gual (?) apple. (ff 83r)

(g) Brickworks:

These bricks (prepared from a soil impregnated with salt) generally become friable (?) if exposed to the effects of the atmosphere without a covering of plaister to prevent their decomposition.

The apparent insensibility to such objects (exposure of the dying and dead on the banks of the rivers, heightened by the contrast of the men of a country diversified with the richest culture and vegetation under the canopy of heaven, considered in the western hemisphere as only attainable and connected with civilized and humane manners) greatly indispose and prejudice, on a first view, the lower order of Europeans so as to induce them to consider the natives as beings of a (ff 83v) different nature from themselves, unanimated by the same feelings or (?) motives of action and from being insensible, undeserving of humane treatment.

This stealed inattention to the social duties often or tending even to the clamorous voice of the distressed objects of humanity, because they are not immediately within the erge (?) of their charge, or connected by the tie of affinity, convey impressions wildly differing from those imbibed under a free government, where every member of the community conceived himself interested in the protection of his fellow creatures however distant the relation.

This apparent insensibility (one of the dreadful evils accruing from despotism) to every participation in the public feeling commonly in disposing, on a first view, against the general Indian character, as conceiving them divested of all humanity, whereas by their configuration, they certainly possess it in an exquisite degree and ought rather to excite compassion from their being divested of its exercise by the influence of the government they have grovelled under - nor, independent of of other observations, are instances wanting to confirm it.

These observations drew from my manuscript the following anecdote: "That during the severe captivity which some of the British troops suffered in the fortress of Darwar in the war of 1782 (ff 84v) in which he participated - a native traveller passing by and looking into the wretched place of their sufferings, where they lay linked in irons under the additional pressure of famine and sickness, from the bad quality of the scanty pittance of food allowed them - this traveller burst into tears and exclaimed aloud: what! is this treatment deserved by men, who bind up and the wounds of their prisoners and dismiss them on being restored to life with money and provisions"? the guards not less struck with remorse than astonishment at the audacity and danger to which the stranger exposed himself by the utterance of such sentiments after looking at one another for some time in silent wonder replied, ' what can (ff 85r) we do! We are helpless and should expose ourselves to worse treatment, if not death from disobedience of our orders by attempting to mitigate their sufferings!

Truly concerned am I to remark for the sake of the national character that the appearance of an European in the internal parts of this tract besides proving a bugbear to women and children puts the labourers in the adjoining fields to flight until assured of the intentions of the visitor. This owing in some degree to the prejudices pervading the lower orders of Europeans in general against the native character but chiefly it has been represented to me to the violences committed by the numerous depraved race of native Portugese, who under the garb of a European, possess nothing of his humanity, but all his defects, aggravated with the vices and imperfect part of the character of the natives of India unalloyed by the virtues of either. Let others determine whether it is not this depraved miscreant race which have discredited the European character so much throughout India. I offer this remark under the exceptions inseparable from all general characteristics, there being several characters among them who would do honour to the most enlightened society and whose names I should mention could my feeble testimony add any thing to their general acknowledged merit. (end 85r and this section)