IV.—*Notes on the State of the Arts of Cotton Spinning, Weaving, Printing, and Dyeing in Nepál. By Dr.* A. CAMPBELL, *attached to the Residency.*

[Read at the Meeting of the 2nd December.]

It may safely be asserted, that the arts generally in Nepál have not hitherto arrived at any degree of advancement, beyond that attained in the plains of India. In regard of those which have attained to considerable perfection below, Nepál is extremely backward in the progress made by her people, nor do I know of any in which the Nipálese can be said to excel their Hindu brethren of India, except the useful one of agriculture, to which may be added, perhaps, brick and tile making; and, in more recent days, the manufacture of flint-lock fire arms.

In the art of weaving, it is universally admitted, that neither the Egyptians of the olden, nor the nations of Europe in the modern, time have equalled, or do excel, the Hindus of Dacca and Benares; while this art in Nipál, is still at the very lowest possible grade of advancement. It is matter of curiosity, as well as of astonishment, that although the Newárs claim, and not improbably hold, a title to considerable antiquity as a united people*, and have made great advances in husbandry, some progress in literature and architecture, they have not got up to this day, beyond the threshold of civilization in that art, which, among the rudest nations, has been found in a state of much efficiency†.

Some one of the Roman philosophers, I have read, gave credit to SEMIRAMIS, for the invention of weaving cotton; and MINERVA herself, was, I believe, an enthusiast, and proficient in the labour of the loom. Our Nipálese queens of the present day are too proud of their Rajput, or "Moon-born lineage‡," to indulge in the practice of the useful arts. And the goddesses, although abundant as the grains of sand on the sea shore, are now but images of the olden personifications; consequently, the weaving art has not descended to the modern representatives of the above-named ladies; but still cleaving to the sex, as a pastime, or profession, we find it confined solely to the women, among the Newárs. The men toil at other labours, but they weave not, "neither do they spin." Weaving is scarcely a trade in the valley of

* See Mr. HODSON's Legends of the Origin of this Tribe in the Asiatic Journal.

† The Mexicans, at the time of the conquest of their country by the Spaniards, had manufactures of cotton cloth in considerable perfection—"of cotton they made large webs, and as delicate and fine as those of Holland."

‡ Chandra Vansa.

Nepál, for all the Newár women, of the poorer classes, (and there are scarcely any others now,) weave the cotton cloths required for the consumption of themselves and families.

These fabrics of domestic manufacture are all of cotton, and of the coarsest and most inelegant description. The cotton is grown in abundance throughout the hottest valleys of the Nipálese hills, and in the Taraï skirting their plainward face. It is brought on men's shoulders*, as picked, with the seeds in it, to the different towns of the valley, where it is exchanged to shop-keepers, for money, or other produce, as the case may be; and thus each family, as its means will admit of, purchases, from time to time, so many pounds of the raw material as suffices for the employment at the cleaning machine and spinning wheel of the mother and her daughters.

The cotton is separated from the seeds by the women, either with the fingers, or by the help of a most primitive contrivance, of the following description, and called *Keko*. Two rollers of wood, the thickness of a walking stick, and close together, are placed in an upright frame, and made to revolve on one another by means of a handle attached (through one side of the frame) to the lower of them. The operator, sitting on the ground, places the frame between her feet, steadying it with her toes, and applies small portions of cotton to the spaces between the rollers with her left hand, while she plies the revolving handle with the right: in this manner the cotton is drawn between the rollers; the seeds, being too large for the interspace, are separated and left behind.

The spinning is equally primitive, but its mode not easily described. The machine† is small, and easily portable, even by a child of six years old; it is not raised from the ground by means of legs, as is the domestic one of the Scottish Highlanders, and Northern Irish, (the ones I am best acquainted with;) nor is the wheel set in motion by the pressure of the foot on a board connected by a thong of leather, with a lever or cramp fixed to its axle, as is common in turning grind-stones, or turning lathe-wheels; but, the spinner, as in the cotton-cleaning process, sits on the ground, with one hand turning

* Man is the only animal of burden employed in the valley of Nepál, as well as the interior of her hills—a circumstance of itself strongly pointing out, how short a way the inhabitants have advanced beyond sheer barbarism. The uneven surface of their country is scarcely sufficient to save them from this imputation. The rulers of the land drive English carriages, while the transport of every article in their dominions is made on men and women's backs—a good specimen of eastern pomp, associated with its common accompaniment, hard-worked poverty.

† Called *Yedá* by the Newárs.

the wheel by means of a handle, and with the other, drawing out the cotton into thread.

An iron rod is attached by means of a string to the wheel, and revolves in company with it, on which the thread, as spun, is collected, and in this manner, women and girls of all ages employ themselves, when not assisting at sowing or reaping, either in front of their dwellings, in the towns, or at the road-side, as may best suit their convenience*. The spinning wheel may be best described by saying, that it is but the ancient distaff, improved by the addition of a wheel for keeping it in motion; for the sharp-pointed iron rod, to the extremity of which the cotton is applied, and by which it is spun into thread, is precisely the spike of the distaff, and like its prototype, serves the double purpose of a bobbin on which the thread is accumulated as spun. The spinner turns the wheel from left to right while forming the thread, and to allow the portion spun to be accumulated on the iron rod, gives the wheel a small turn in the opposite direction, at the same time, lowering her left hand, so as to permit the winding-up of the thread. This necessary interruption in the spinning process, is a great drawback on the time of the spinner, and renders the distaff wheel very inferior, when compared to the common one of Europe. When tending cattle, or watching their ripe crops, the females generally wile away the time, and assist in replenishing the family wardrobe by spinning or weaving in the open air.

Having thus imperfectly spun the yarn, we proceed naturally to the warping and weaving of it, both of which processes are performed exclusively by women, with the very simplest and rudest machinery, equalled by the coarsest and most ungainly produce. The ordinary breadth of the Nipál cotton cloths is about half a yard, and rarely exceeds two feet. The average length of the webs is from 6 to 12 and 14 yards, and the texture of the finest is not superior to the *dosúti* cloth of Hindustán, used for house canopies *(chhats)* and floor cloths.

When a *Newár* woman has spun a sufficient quantity of thread for the warp of a web, she winds it off the iron rod, on which it has been spun, into (or, on) large bobbins of about nine inches long, and fit to hold three or four pounds of thread.

With these large bobbins, and a few reeds, about three feet long, she repairs to the nearest grassy spot without her village, or to the side of the causeway, if unpaved, and there, sticking the reeds in the ground,

* The universality of the spinning wheel may be readily credited, on the announcement of a custom which enjoins every Newár parent to present his newly married daughter with a *Yedú* and *Keko* in addition to her dowry.

(a few feet asunder,) to the length of her purposed web, she has prepared the only warping frame known throughout these regions.

Tying the thread to the reed on her extreme right, she moves rapidly up and down along the line, passing the thread (as it comes off the bobbin, revolving on a shaft passed through its axle, and held in her right hand), on alternate sides of each reed, until the "warp is laid."

The dexterity acquired by the women, in warping, is considerable, and the quickness with which they entwine the thread, with the warping reeds, is remarkable; and apparently, it is executed with little trouble. I have often seen those women moving up and down, and laying the warp regularly on the frame, at a fast walk, and all the while talking and laughing with the persons present, and assisting them in the performance of their task.

Having "laid the warp," the reeds (or rods of wood, as the case may be), are pulled out of the ground, and the warp, frame and all, is rolled up and carried home. All the cloths made in the valley are of uncoloured thread, which renders the warping a much easier affair than when striped webs are to be laid down.

When leisure offers for weaving the web, the women on a sunshining day spread out the warp (the warping sticks still in it) and apply with a brush, made of a suitable kind of grass, the paste necessary for smoothing the thread preparatory to putting the web in the loom.

The mode of weaving does not essentially differ from that practised in the uncivilized portions of our own country with which I am acquainted. The weaver sitting on a bench, with the loom in front of her, plies the shuttle alternately with either hand, pulling forward the swinging apparatus for laying the woof thread, close to its predecessor, and plies the treddles with her feet*. The weaving is carried on under a shed, within a small verandah, or in the house; and as the roofs are generally low, the treddles are made to play in a hollow dug in the earthen floor under the loom. The loom is made of the commonest materials, and very clumsily put together, and is altogether of a piece with the poor state of the weaving art. Lest it should be thought that it is intended to connect the wretched produce of the Nepál looms, with the rudeness of the machinery, as inevitable cause and

* This portion of the loom is extremely rude and primitive; instead of footboards moving on a fixed point, to be depressed alternately, so as to make one layer of the warp threads cross the other, and thus incorporate the woof with it, we find two small buttons suspended from the lower margin of the netting, which the weaver seizes between her great and first toe, alternately depressing each foot as the woof thread is delivered by the shuttle.

effect, I may mention that the Nepál loom, and the arrangements of the weaver, are superior in some respects to those of the unrivalled manufactures of the Dacca muslin. MILL's account of the Hindu loom corroborates this; he says, "It consists of little else than a few sticks or pieces of wood, nearly in the state in which nature produced them, connected together by the rudest contrivances. There is not so much as an expedient for rolling up the warp." The weaver is therefore obliged to work in the open air, as his house could not contain him and his web at full length; "and every return of inclement weather interrupts him." The Nepál weaver rolls up the warp on its original frame, and ties it to a peg driven in the ground close to her feet, while a cross beam in front of her receives the web as it is woven*.

The Thibet woollen cloths are of infinitely superior workmanship to the cotton ones of Nepál, and indeed, are of very fine make and material, although deficient in width. It is therefore evident that in the earliest of the arts, one which must have been practised by all human societies, so soon as leaves and skins were deemed unfitting clothing, the Nipálese have been left far behind, by the Hindus of India on one hand, and by the Tartars of Bhote on the other.

Dyeing and printing come naturally enough to notice, after spinning and weaving; and the advancement made in these arts has kept an even pace with that in the former. As dyesters the Newárs are miserable artists; they cannot at this day dye a decent blue, although furnished with indigo for the purpose.

A dirty red (from madder) and a light fading green, are the colours most commonly dyed by them; but they are not *fast* and durable, nor elegant when fresh. The only tolerably good dyeing done in Nepál, is by some Cashmíris, and people from the plains.

The coarse cloths of the country are printed, in imitation of the chintzes of India and Europe, and are much worn by all classes of females, who cannot afford to purchase better stuffs; but the imitations are very badly executed, and the colours not durable. The best Nipálese chintz is printed and dyed at Bhatgaon, in the valley; and in the hills east of the valley, at a place called Dunkutuah. In the small valley of Punouti too, about 24 miles east of Kathmandu, this trade is carried to some extent, and with nearly similar success.

* The different parts of the loom are not connected so as to form one complete machine. For instance, the swinging beam and netting are generally suspended from the roof of the house.

In the commonest European loom, the bench on which the weaver sits, the beam on which the cloth is received, as well as that on which the warp is rolled, together with the swinging beam and netting, are all joined together.

A piece of best Parbattiah chintz 5½ yards long, sufficient to make an entire dress for a woman, costs at Kathmandu 1-8-0 Nipálese rupees*.

The subjoined list of the cotton piece goods manufactured in the valley and neighbouring hills, of which specimens are now presented, may not be useless to the public, while it will tend in some degree to give practical illustration to the above remarks. As a mode of attempting to estimate the real value of these products, and to assist in throwing light on the condition of the people who make and use them, the value of money, in regard to the staff of life, may be conveniently recorded†, especially as in Nepál, as well as India, the craftsman does not, generally speaking, earn any thing in addition to the common wages of agricultural labour, or in other words, little more than suffices to fill his belly, and that of a wife and children, with plain rice, and a few spices, and to buy the raw cotton, for the manufacture of his, and their coarse clothing. Models of the spinning wheel, and cotton cleaning machine, accompany the specimens of cloth.

List of the principal cotton piece goods Manufactured in Nepál proper, and throughout the Hills; to which is added a notice of the Bhungara, or Canvas made from the inner bark of trees, and the few coarse woollens of the neighbouring hills‡.

Names by which known in the Bazar. *Remarks.*

1. *Changa.*—Manufactured in almost every Newár's house throughout the valley, and generally in the hills. Is coarse, hard and thin in texture. Is for the most part in webs of 10, 12, to 14 yards long, and 18 inches broad, and ranges in the Kathmandu bazar, from one rupee to 1-4-0 and 1-8-0 per piece.

* A Nipálese rupee equivalent to 12½ annas of Company's currency.

† A full grown labouring man requires for a day's good food, 1½ mannas of rice, and his wife, with (say as an average) three children, 1½ mannas more, or in all three mannas.

The present price (November 1835) is 26 mannas, or nearly nine days' food per current rupee; to this, add salt, spices, and other condiments, worth one rupee more, and it will be seen that the wages of labour such as a man can live on in tolerable comfort, must be about four current rupees per month, and this without any allowance for clothing, house or luxuries.

The lowest class of laborers, and artizans, in some parts of the valley, and throughout a great portion of the hills, cannot come at rice, as their ordinary food; but must be content with the coarser grains, such as murwa, bajra, kodu and Indian corn. Two current rupees per month suffice for their subsistence, and is about the price of their labour.

‡ The specimens here described are deposited in the Society's museum.

2. ***Kadi.***—Thick, coarse and strong; manufactured in considerable quantity in the valley of Noakot, as well as in the great valley and throughout the hills: is much worn by the cultivators of all tribes, Parbattiahs, and Newárs. Comes to market generally in pieces of 6½ yards long, 16 or 18 inches broad, and averages at Kathmandu 12 annas to one rupee per piece. Wears long and well; like the above, is sold unbleached.

3. ***Purabi Chint.***—Is an imitation of Indian Ghintz, manufactured at Dunkutuah and other places in the eastern hills, generally coloured, black and red, in a small striped pattern; coarse and heavy. Is much worn by the poorer Parbattiahs, and Newárs (women). Comes to Kathmandu in pieces of five yards long, and less than two feet broad, and may be generally bought for 14 annas or one rupee per piece.

4. ***Mámi Chint.***—Also manufactured at Dunkutuah and to the eastward; is very like the above; worn by the Parbattiah and Newár women, made into chális (boddice) and sáris. A piece of six yards long and 18 inches broad, costs in Kathmandu about one rupee.

5. ***Banárasi Chint.***—Manufactured at Bhatgaon in the valley, and named from its being an imitation of the Indian Chintzes; is of different colours and patterns, not so coarse and heavy as the other kinds, but thin and flimsy. Is used as lining for jackets, and for women's dresses. A piece six yards long and half a yard broad, costs in Kathmandu about one rupee or up to 1-8-0.

6. ***Kalé Chint.***—Manufactured chiefly in the hills west of Kathmandu; is coarse, heavy, very rudely dyed and printed, but the broadest of the Nipálese fabrics. A piece eight yards long by 2½ feet wide, costs about one rupee eight annas.

7. ***Durkeah Chint.***—Manufactured principally at Pokra and Bútwal; very coarse and heavy, but has a better width than the Chintzes of the valley: used for jacket linings, and women's dresses; six yards long and two feet broad; costs in Kathmandu about one rupee eight annas.

8. ***Bátedár Chint.***—From its spotted pattern it takes its name; is a favorite one of the Bhatgaon Chintzes. A piece of 5½ yards long and half a yard wide, costs about one rupee eight annas.

9. ***Hara Chint.***—Comes almost exclusively from the small valley of Bunapa, 20 miles east of Kathmandu; coarse and hard like the rest.

10. ***Párabi Kadi.***—Manufactured in the eastern hills, is broader, and somewhat finer than the Noakote article (No. 2.); a good deal of this article is exported from Nepál to Bhote. A piece of 14 yards long and 2½ feet wide, costs at present in Kathmandu three rupees.

11. ***Kasa.***—Nipálese imitation of the Indian mulmul or common gauze, a wretched manufacture. Is made in large quantities at Bhatgaon, and generally by the Newárs throughout the valley. Is used for making turbans; a piece of eight yards long and six inches wide is sufficient for a pagrí, and costs generally four annas. Worn by the poorer Parbattiahs, and some Newárs, for the Asiatic turban is not general among this latter race, a small conical skull cap being the most common head-dress among them.

12. ***Bhangára.***—A very coarse and strong sackcloth or canvas, manufactured from the inner bark of trees, by the people of the hills, and much used in

the valley of Nepál for making grain-bags and sacks, for the transport of merchandize. The poorer people of the hills, who subsist chiefly by wood-cutting and carrying, make this cloth in their houses and wear it. I cannot at present ascertain the description of trees whose bark is converted into this clothing, nor the detailed process employed in making it into thread. The hill people say that several different trees furnish the appropriate bark, and that it is necessary to beat and pound it, as for paper making*, previous to spinning it into thread. The cloth is exceedingly strong and durable, and is said to stand wet for a long time without being rotted, or injured in texture. It is brought to Kathmandu, in webs of about five yards long, and 12 inches broad, which costs on an average eight annas.

13. *Rhari.*—A coarse kind of woollen blanket manufactured by the Bhoteahs of the Nepál hills, and worn by them almost exclusively: is brought to Kathmandu in pieces of 7½ yards long, and 14 inches wide, and costs about three rupees. Its texture is very thick and heavy, but it is admirably suited for the rainy season, to the inclemency of which the burden-bearing, and wood-cutting Bhoteahs, are much exposed. The Newárs do not wear this, nor indeed (as a general practice) any woollen garments. This is also for the most part of domestic manufacture, as every Bhoteah who possesses a few sheep, has a web or two of it made up annually by his family. To add to the warmth and thickness of the Rhari, it is frequently improved by beating wool into it, which gives it the appearance of felt.

14. *Bhote.*—Has its name from that of the people making and wearing it. The hill countries north of Nyakote and the valley of Nepál, up to the snows, produce this article. It is a thick and soft woollen stuff, half blanket half felt, much warmer and lighter than the rhari, but inferior to it as a protection against rain. A piece seven or eight yards long, by 18 inches wide, costs in Kathmandu about two rupees eight annas.

P. S. On submitting the above to Mr. HODGSON's perusal, he informed me of the existence among the Newárs, of some coloured cotton manufactures, overlooked by me in this list. I have procured specimens of them and of an unnoticed plain manufacture, both of which are added; they are as follows:

15. *Putassi.*—So called by the Newárs. It is a strong coarse sort of check, generally blue and white, sometimes red and white; is entirely a domestic manufacture, and very rarely procurable for purchase in the bazar, the women not weaving more of it than suffices for their own wear. Is woven exclusively by the Newár women: a piece 5½ yards long, and 2½ feet wide, costs about 2½ current rupees. There are several varieties of this stuff, as to colour and pattern (some of them being striped instead of checked), but all are coarse and heavy.

16. *Puniká.*—An imitation of the table cloth manufacture of Dinapur, and the variety technically called "Bird's eye." Three or four sorts are manufactured by the Newárs, but all save one are coarse and heavy. It is worn by the better class of Newárs, male and female, and by the Parbattiah sol-

* See the Nepál paper-making process, as described by Mr. HODGSON in the Journal of the Asiatic Society.

Nisaëtus Nipalensis
type of the new Genus Nisaëtus.

T. Black Asiatic Lith. Press.

diery occasionally. A web of six yards long by two feet broad, costs three current rupees. The manufacture of this article is confined principally to the larger towns of the valley.

17. *Bátm Poga.*—(Newári.) An ancient manufacture and article of clothing of the Newárs, but not worn by them in the present day. Is wore only by a class of outcasts, and is with difficulty procurable; its only use at present is, to roll the corpse of religious persons in previous to being burned. The warp, is of coarse cotton thread, the woof of soft spun woollen yarn, in addition to which some fine wool is amalgamated with the web in weaving it. Its texture is very soft, and is well calculated for a warm in-door wear; it is too fleecy to be kept out wet. A piece of four feet long by two feet wide, costs two current rupees.

V.—*Summary Description of some New Species of Falconidæ.* By B. H. Hodgson, *Esq.*

Genus *Aquila.* Species new. *Aquila Pernigra. Jetty* Eagle, (mihi.) *Habitat,* the central and northern regions of *Nepál.*

This species is throughout of a black colour, but less pure below than above, and the tail is transversely marked with four or five broad bands of a paler and brownish hue. The cere and toes are bright yellow. The bill blue, with a black tip; the talons black, and the iris brown. It is a bird of somewhat slender form, and very graceful and powerful flight, possessing all the influential characters of the genus, as now restricted; but distinguished from its type, or *chrysaetos,* by a slenderer bill, rather longer toes, and longer and more acute talons. It is two feet five inches from tip of the bill to the end of the tail, and five feet and a half between the wings; and is chiefly remarkable for the extreme inequality of size and acuteness of the talons. The orbits are downy; the sides of the cere clad in short, soft hairs; and the feathers of the hind head and neck are prolonged into a vague crest of narrow composed plumes. The cere is rather large, but not heavy; the bill longer than the head, but slight rather in form. The wings are equal to the tail, with the fourth quill longest, and all the great ones strongly emarginated, remotely from their tips; the tips being inclined a little inwards: tail even, or subrounded.

The tarsi moderate and plumed; toes nude and reticulate, with three or four scales next the talons, which, as already noticed, are very acute, and the inner fore and hind ones of extreme length and curve. The inner fore talon is the largest, then the hind one, next the central, and the outer fore, least.

The nares are obliquely cleft in the cere, and of an irregular oval shape, with the upper margin arched and tumid.