

IX.

NARRATIVE

OF

A JOURNEY TO SIRINAGUR.

By CAPTAIN THOMAS HARDWICKE.

HAVING sometime ago visited the mountainous country of *Sirinagur*; I hope a succinct detail of some of the most remarkable circumstances, which occurred in that journey, will not be unacceptable to the *Asiatick Society*.

On the 3d of *March*, 1796, I commenced the journey, from *Futteghur*, in company with Mr. HUNTER; and we arrived, on the 19th of the same month, at *Anoopsheher*: our route was circuitous, for the purpose of visiting the several indigo plantations, established by *European gentlemen*, in this part of *Dooab*. Here were conspicuously displayed, the effects of skill, of industry, and of a spirit of commercial enterprize, in beautifying and enriching a country, which in other parts exhibiting only waste and forest, supplies, indeed, matter to gratify the curiosity of a naturalist, but suggests to the philanthropic mind the most gloomy reflections.

At *Anoopsheher* I recruited the necessary supplies for the prosecution of my journey, and on the 23d, continued my march alone; for my fellow-traveller was under the necessity of returning, from this place, to attend the residency with DOWLAT ROW SINDEAN, on a visit to the *Marhatta* camp.

On the 30th of *March*, I arrived at *Nejeebabad*: the town is about six furlongs in length; with some regular streets, broad, and enclosed by barriers at different

distances, forming distinct bazars. In the neighbourhood, are the remains of many considerable buildings. Near the south-west end of the town is a large garden, called *Sultan Bagh*; containing in the center a spacious square building, erected by one of the sons of NEJEEB-UD-DOWLAH.

On the north-east side of this garden, and at the distance of 300 yards, is another, in which lies buried NEJEEB-UD-DOWLAH: his grave is without ornament, raised on a terrace, a few feet from the ground, in an area of about eighty yards, surrounded by a square building, formed into apartments and offices, for the accommodation of the servants, appointed to perform the usual ceremonies, for the benefit of departed souls.

A considerable traffic is carried on here, in wood, bamboos, iron, copper, and tincal, brought from the hills. It is also the center of an extensive trade from *Lahore, Cabul, and Cashmir*, to the east and south-east part of *Hindustan*.

At the distance of ten miles and six and a half furlongs, from *Nejeebabad*, on the road to *Hurdwar*, is *Subbul-gurh*, a very extensive line of fortification, enclosing the town; both of which exhibit little more than naked walls falling to decay. Much of the ground, within the fort, is in cultivation. In the south-east curtain, or face of the fort, is a lofty brick-built gateway. The high road leads close past the north-east bastion, and continues along the north face, the whole length, within thirty or forty yards of the ditch.

On the 1st of *April*, I arrived at *Unjennee Ghat*, about three miles below *Hurdwar*, on the eastern side of the river. The town of *Hurdwar* occupies a very small spot, consisting of a few buildings of brick, the
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property of eminent *Goosseys*. It is situated on the point of land at the base of the hills, on the western side of the river.

The stream here divides itself into three channels, the principal of which is on the eastern side, and running along a pleasant bank, called *Chandee Ghat*, meets the base of the hill, which gives this name to the *Ghat* below. The deepest channel at present is in some places about fifteen feet, a depth not long continued; and near the termination of each reach of the river, the stream breaks, with rapidity, over beds of large loose stones, sometimes with no more water than sufficient to give passage to large unloaded boats. The points of the islands, several of which are formed in the bed of the river, are principally of loose pebbles and sand; but, the rest of the land, between the different channels is covered with the *Mimosa Catechu*.

The ascent of the hill, called *Chandee*, commences at a little distance from *Unjennee*, from which, to the top of the hill, I consider about two miles and a quarter. Some part of this distance, however, is a long and elevated level bank. The ascent to the high part of the hill, is very steep; the path narrow, and requiring much attention and exertion, to prevent accidents in stepping, from the looseness of the stones and earth.

On the top of this hill is a *Tersool* or trident, about fourteen feet high, of stone, supported by a small square base of mason-work; the base of the forks is ornamented, on the east side, with figures of the sun and moon, between which, upon the shaft, is the figure of **GANESA**,

Near the base of the shaft, are the figures of **KAAL-
KA DEVI**, and **HANUMAN**, the former on the east, the latter west. The space on the summit of this hill, is not twice larger than the square of the pedestal.

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destal of the trident: from this, a narrow ridge leads to another hill, something higher: and in this manner the hills here are mostly connected; the highest being generally of a conical form. They are very thinly clad with vegetable productions: the trees are few, and small; and the grass, at this season of the year, parched up. In some parts of the hills, however, where the aspect is more northerly, the grass is more abundant, finer, and seemingly much liked by the cattle.

On the top of *Chundnee*, a *Bramen* is stationed to receive contributions from visitors during the continuance of the *Mela*: the produce, he says, upon an average, is for that time, about ten rupees per day.

This *Mela*, or fair, is an annual assemblage of *Hindus*, to bathe, for a certain number of days, in the waters of the *Ganges*, at this consecrated spot. The period of ablution is that of the Sun's entering Aries; which, according to the *Hindu* computation, being reckoned from a fixed point, now happens about twenty days later than the vernal equinox. It accordingly fell on the evening of the 8th of *April*. But every twelfth year, when Jupiter is in Aquarius, at the time of the Sun's entering Aries, the concourse of people is greatly augmented. The present is one of those periods, and the multitude collected here, on this occasion, may, I think, with moderation, be computed at two and a half millions of souls*. Although the performance of a religious duty is their primary object, yet, many avail them-

* This estimation may appear enormous; and it therefore becomes necessary to give some account of the grounds on which it was formed. Small sums are paid by all, at the different watering places; and the collectors at each of these, in rendering their accounts to the *Mehunts*, who regulate the police, are obliged to form as exact a register, as a place of so much bustle will admit of. From the principal of these offices, the number of the multitude is found out, probably within a few thousands. The *Goasteyn*, on whose information the calculation was formed, had access to these records; and the result, as delivered above, was thought more likely to be under, than over the truth.

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selves of the occasion, to transact business, and carry on an extensive annual commerce. In this concourse of nations, it is a matter of no small amusement to a curious observer, to trace the dress, features, manners, &c. which characterize the people of the different countries of *Cabal, Cashmir, Lahore, Butaan, Sirinagur, Cummow*, and the plains of *Hindustan*. From some of these very distant countries, whole families, men, women, and children, undertake the journey, some travelling on foot, some on horseback, and many, particularly women and children, in long heavy carts, railed, and covered with sloping matted roofs, to defend them against the sun and wet weather : and during the continuance of the fair, these serve also as habitations.

Among the natives of countries so distant from all intercourse with people of our colour, it is natural to suppose that the faces, dress, and equipage of the gentlemen who were then at *Hurdwar*, were looked upon by many as objects of great curiosity : indeed it exceeded all my ideas before on the subject, and as often as we passed through the crowd in our palanquins, we were followed by numbers, of both women and men, eager to keep pace, and admiring, with evident astonishment, every thing which met their eyes. Elderly women, in particular, salaamed with the greatest reverence ; many shewed an eagerness to touch some part of our dress ; which being permitted, they generally retired with a salaam, and apparently much satisfied.

At our tents, parties succeeded parties throughout the day, where they would take their stand for hours together, silently surveying every thing they saw.

Sometimes more inquisitive visitors approached even to the doors of the tent, and finding they were not repelled, though venturing within, they generally retired, with additional gratification ; and frequently

quently returned, as introductors to new visitors, whose expectations they had raised, by the relation of what themselves had seen.

The most troublesome guests were the *Goosseyns*, who being the first here in point of numbers and power, thought it warrantable to take more freedoms than others did : and it was no easy matter to be, at any time, free from their company : it was, however, politically prudent, to tolerate them ; for, by being allowed to take possession of every spot round the tents, even within the ropes, they might be considered as a kind of safe-guard, against visitors of worse descriptions ; in fact, they made a shew of being our protectors.

In the early part of the *Mela*, or fair, this sect of *Fakeers* erected the standard of superiority, and proclaimed themselves regulators of the police,

Apprehending opposition, in assuming this authority, they published an edict, prohibiting all other tribes from entering the place with their swords, or arms of any other description. This was ill received at first, and for some days it was expected force must have decided the matter ; however, the *Byraagees*, who were the next powerful sect, gave up the point, and the rest followed their example. Thus the *Goosseyns* paraded with their swords and shields, while every other tribe carried only bamboos through the fair.

The ruling power was consequently held by the priests of the *Goosseyns*, distinguished by the appellation of *Mehunts*, and during the continuance of the *Mela*, the police was under their authority, and all duties levied and collected by them. For *Hurdwar*, though immediately connected with the *Mah-*
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ratta government, and, at all other seasons, under the rule and controul of that state, is, on these occasions, usurped, by that party of the *Fakeers*, who prove themselves most powerful; and though the collections made upon pilgrims, cattle, and all species of merchandize, amount to a very considerable sum; yet no part is remitted to the treasury of the *Mahratta* state.

These *Mehunts* meet in council daily: hear and decide upon all complaints brought before them, either against individuals, or of a nature tending to disturb the public tranquillity, and the well management of this immense multitude.

As one of these assemblies was on the high road near our tents, we had frequent opportunities of noticing their meetings; and one of our sepoys, having occasion to appear before it, in a cause of some consequence, it gave us an opportunity of learning something of the nature of their proceeding.

The sepoy, it seems, on leaving the station, where his battalion was doing duty, was entrusted, by one of the native officers, with fifty rupees, and a commission to purchase a camel. With the intention of executing this trust, he mixed with a crowd, where some camels were exposed for sale; and while endeavouring to cheapen one to the limits of his purse; shewing the money, and tempting the camel merchant to accept, for his beast, the fifty rupees, he drew the attention of a party of *Marwar* men, who were meditating a plan to get it from him. Five or six of those men, separating from the crowd, got round him, said, they (or one of them) had lost his money, to the amount of fifty rupees; that he, the sepoy, was the man who had it; and, with much clamour and force, they got the money from him. Fortunately, the sepoy's comrades were near; he ran towards them and communicated the alarm, and got assistance,

assistance, before the fellows had time to make off, or secrete the money; they, however, assumed a great deal of effrontery, and demanded that the matter should be submitted to the decision of the *Mehunts*: before this tribunal the cause was consequently brought, and an accusation laid against the sepoy, by these men of *Marwar*: the money was produced, and lodged in court, and the cause on both sides, heard with deliberation. Unlucky for the *Marwarrees*, they had neither opportunity to examine or change the money; and knew not what species of coin made up this sum: which circumstance led to their conviction: for being enjoined by the *Mehunts*, to describe the money they had lost, they named coin very different from what the purse contained: but when the sepoy was called upon to answer the same question, he specified the money exactly. The judges immediately gave a decision, in favour of the sepoy, and restored him his money: the *Marwars* were fined each in the sum of five rupees, and sentenced to receive each fifty stripes, upon their bare backs with the *Korah*.

The *Goosceyns* maintained an uncontested authority, till the arrival of about 12 or 14,000 *Seek* horsemen, with their families, &c. who encamped on the plains about *Jualapore*: Their errand here was avowed to be bathing; and soon after their arrival they sent OODASSEE, their principal priest or *Gooroo*, to make choice of a situation on the river side, where he erected the distinguishing flag of their sect, for the guidance and direction of its followers, to the spot. It appeared, however, that no compliments or intimation of their intentions, had been made to the ruling power; and the *Goosceyns*, not willing to admit of any infringement of their authority, pulled down the flag, and drove out of the place those who accompanied it. Some slight resistance was shewn by the *Seeks*, in support of their priest, and the dignity of their flag, but was repelled with much violence, and the

Goosceyns,

Goosseyns, not content with driving them away, abused and plundered the whole party, to a considerable amount.

The old priest OODASSEE, on his return to the *Seek* camp, complained to Rajah SAHEB SING, their chief, in the name of the body collective, of the insult and violence they had met with from the *Goosseyns*.

A consultation was immediately held by the three chiefs of the *Seek* forces, viz. Rajah SAHEB SING of *Putealah*, and ROY SING and SHERE SING of *Boorrah*, who silenced the complainants by promising to demand redress and restitution for what they had been plundered of.

A VAKEEL was immediately dispatched, with a representation, from the *Seeks* to the *Mehunts*, or priests of the *Goosseyns*, pointing out the right, they conceived they possessed, in common with all other nations, to have access to the river; and complaining of the wanton insults they had met with, from their tribes, when in the peaceable execution of their duty: however, as they had no remedy, to make amends for some part of the ill treatment they met with, yet they demanded an immediate retribution of all they had been plundered of, and free access to the river or place of bathing.

The *Mehunts* heard their complaints, expressed concern at what had happened, and promised their assistance, in obtaining the redress sought for: and the matter, for the present, rested here; the *Goosseyns* giving back, to the *Seeks*, all the plunder they had taken, and admitting of their free ingress and egress to the river.

All was pretty quiet, during the few remaining days

days of bathing; but on the morning of the 10th of *April*, (which day concluded the *Mela*) a scene of much confusion and bloodshed ensued. About eight o'clock on that morning, the *Seeks* (having previously deposited their women, children, and property, in a village, at some distance from *Hurdwar*) assembled in force, and proceeded to the different watering-places, where they attacked, with swords, spears, and fire-arms, every tribe of *Fakeers* that came in their way. These people made some resistance, but being all on foot, and few, if any, having fire-arms, the contest was unequal: and the *Seeks*, who were all mounted, drove the poor *Sannyassees*, *Byraagees*, *Goosseyns*, *Naagees*, &c. before them, with irresistible fury. Having discharged their pieces within a few paces, they rushed upon those unfortunate pilgrims with their swords, and having slaughtered a great number, pursued the remainder, until, by flight to the hills, or by swimming the river, they escaped the revenge of their pursuers.

The confusion, spread among other descriptions of people, was inconceivable; and every one, thinking himself equally an object of their resentment, sought every means of safety that offered: many took to the river, and in the attempt to swim across, several were drowned: of those who endeavoured to escape to the heights, numbers were plundered, but none who had not the habit of a *Fakeer* was in the least hurt: many parties of straggling horsemen now ranged the island, between *Hurdwar* and *Unjimmee gaut*; plundering the people to the very water's-edge, immediately opposite to us; fortunately for thousands, who crowded to this *gaut*, the greatest part of one of the vizier's battalions, with two six-pounders were stationed here; two companies of which, with an addition of a few of our own sepoys, and a native officer, whom Captain MURRAY very judiciously sent across the river, kept the approach of the horse in check. Finding they could not attack the crowd on the water's-edge, without receiving a smart

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fire from the sepoy, as well as exposing themselves to the fire of their guns, they drew off, and by about three o'clock in the afternoon, all was again quiet.

At this time, the cause of such an attack, or the future intentions of this body of *Seeks*, was all a mystery to us; and popular report favoured the conjecture, that they intended to profit from the present occasion, and by crossing the river, at a few miles lower down, return, and plunder the myriads of travellers who crowded the roads through *Rohilcund*. However, the next morning discovered they had no such intentions; as, from the adjacent heights, we saw them take their departure, in three divisions, bending their march in a westerly course, or directly from us. The number which had crowded to the river side, opposite to our tents, was too great to be ferried over in the course of the night, and consequently remained in that situation: fearful of the approach of day, and in dreadful alarm from the expectation of another visit from the *Seeks*, but by eight o'clock, their minds were more at ease, and they offered up their prayers for the *English* gentlemen, whose presence, they universally believed, had been the means of dispersing the enemy.

From the various information we had now collected, we concluded this hostile conduct of the *Seeks* was purely in revenge against the tribes of *Fakeers*: many of the wounded came to our camp to solicit surgical assistance and they all seemed very sensible, that they only were the objects of the enemy's fury.

Accounts agree that the *Fakeers* lost about five hundred men killed, among whom was one of their *Mehunts*, or priests named MAUNPOOREE; and they had many wounded: of the *Seeks* about twenty were killed, but the number of wounded not known.

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The mountains in the neighbourhood of *Hurdwar* afford, but little amusement for the mineralogist ; nor is a fossil to be found in them, impregnated with any other metal than iron.

In some situations, where the fall of water has exposed their surface, for one or two hundred feet, nothing more is exhibited than an argillaceous marl, varying in hardness and colour, according to the metallic particles they contain : sometimes this variety is shewn very distinctly, *stratum super stratum*, the lowest consisting rather of siliceous particles, having loose quartzose sand, with very little earthy mixture ; and crumbling to pieces with the least application of force ; the next a fine smooth marl, of a dull cineritious grey, compact, and soapy to the touch : it is quickly diffusible in water, and does not effervesce in acids. The next is of a pale liver-coloured brown, possessing properties like those of the preceding one, but somewhat more indurated, and most likely containing more iron : the fourth, or superior stratum is still browner than the last ; and exhibits, in its fracture, small shining micaceous particles. In other places, the whole side of a mountain consists of siliceous sand, mixed with mica and some calcareous earth ; the whole very slightly connected, laminated, and tumbling in large quantities into the water-courses below ; sometimes found sufficiently indurated to bear the violence of the fall. From the place called *Neel Koond*, a winding nullah, of about a mile in length, falls into the *Ganges* a little above *Unjinnee* : in the bed of it, a greater variety of stones is found than might be expected from the nature of the hills, in which the source of it lies ; thus granite, and opaque quartz, of different colours, are found in pretty large rounded masses : yet no such stones, as far as observation can trace, form any part of the mountains, in this neighbourhood.

The high ground between the bank of the *Ganges*
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and the mountains, also contains many of these stones, in a loose unconnected state; some lying very deep in the earth, as may be seen on the side of the bank exposed to the river: these bear a perfect resemblance to those stones in the beds of the nullah, and *Ganges*, which owe their form to the attrition of rolling currents for ages: but the elevated situation in which these are bedded, leaves no room for supposition, when, if ever, they were subject to such action.

The riches of the vegetable kingdom, however, made ample amends for the want of variety in the mineral productions. As an enumeration of the plants I met with, during my stay at this place, would interrupt the thread of my narrative, I have subjoined them in the form of an appendix, together with all the others found in the course of my tour; adding such remarks on their history, or æconomical uses, as I judged might be interesting. I have only to observe, that the season just now is not very favourable for finding herbaceous plants in flower; the greatest abundance of this description is brought forward by the periodical rains, and a visit in the months of *September* and *October*, would, no doubt, be attended with a very successful investigation. On the other hand, to explore the loftier products of the extensive forests, with the deliberation the research requires, it should be begun in *January*, and continued to the end of *April*.

As a necessary measure, previous to my proceeding on my intended journey to *Sirinagur*, I dispatched a servant, with a letter, to the rajah of that place; signifying my intentions of visiting his capital, and forwarding, at the same time, a letter I had the honour to receive, from the vizier, ASOPH-UL-DOWLAH, through the kind influence of the resident, Mr. CHERRY. My servant returned on the day I was quitting *Hurdwar*, (12th *April*) with the rajah's acknowledgement of my letter, and a perwannah or pass

through his dominions written in the ancient *Hindu* character.

On the 12th of *April*, I took my departure from *Hurdwar*, or *Ujjuueeghat*; and on the 13th, making two marches of it, arrived at *Nejeebabad*. This was certainly a retrograde motion, but two or three reasons operated, to induce me to change the route I originally intended to take; first, *Hurdwar* was a place of less security for the cattle and baggage I must leave behind, and the difficulty of feeding them greater, than in a place where established bazars produced abundance of grain.

Secondly, some little conveniences necessary to my manner of travelling, I could not get made up here; and thirdly, the road direct from *Hurdwar* to *Sirina-gur*, was more difficult of access and worse supplied with provisions and water, than the one recommended from *Nejeebabad*; I therefore decided in favour of the latter.

Among other preparations while here, a substitute for a palankeen was requisite, and I made up what is called a *Chempan*, which is nothing more than a litter, of about five feet in length and three in breadth, supported between two bamboos, or poles, fixed to the sides a little above the bottom, and carried in the manner of what is called in *Bengal* a *Tanjaan*, by a short yoke fixed between the poles near the ends, and parallel to them.

On the 20th, I commenced my march from *Nejeebabad*, and encamped at the petty village of *Coakwara*, at the distance of eighteen miles. This village is situated at the distance of three furlongs, within the barrier of this *ghat*, where is the first ascent of the hills through a rugged road. The barrier is a large double gate of plank, flanked on the left by a precipice, and on the right by a wall of loose stones, connected with the neighbouring ridge of hills. This point of land, including the village, is nearly encircled by the *Koa-nullah*, a shallow, but clear and rapid stream; but being surrounded on the

the north, east, and south, by higher mountains, the situation, must be, at some seasons, intolerably hot, and probably unhealthy.

These ranges of hills rise, with a moderate, though unequal slope, from the plains below, and are skirted by deep forests, extending from *Hurdwar* through *Rohilkund*, *Oude*, and the countries to the eastward, and produced many kinds of valuable timber, and an abundant store of plants, never yet, perhaps, brought under the systematical examination of the botanist. They also abound with game of many descriptions. Elephants are found here, and sometimes range beyond the skirts of the woods, to the great injury of whatever cultivation they meet with: but their depredations are particularly directed to sugar plantations.

They are considered inferior, in size and value, to the elephants brought from the eastern countries; and are seldom caught, but for the purpose of taking their teeth.

The soil of these forests varies, from a black fat earth, where the trees or shrubs which it nourishes, acquire a large size; to a firm reddish clay, and mixtures of gravel and loose stones of various descriptions.

On the 21st, I marched to *Amsore*, a small village on a little cultivated spot. The first part of the road lay in the bed of the *Koa-nullah*, and the whole of it was so rugged, that although the distance is only computed four coss, and I judge it not to exceed seven miles, I employed three hours and a half in walking it, and my baggage did not arrive till six hours after I set off. The general direction of the road is about N. E. by E.

On the 22d, a walk of two hours and forty minutes
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carried me to *Ghinouly*, the distance of which from *Amsore*, I compute to be eight miles; the road being much less obstructed than yesterday. Towards the beginning of this day's march, the road passes between two stupendous rocks. The stones, in this part of the nullah, lying in very large masses, the stream passing between with very great rapidity, and the only path across being on spars laid from rock to rock, the passenger is exposed to imminent danger. Farther on, I met with one of the small water-mills, called *Punchuckee*, which was now working. The construction is very simple: the stones which are little larger than those turned by the hand, and called *chuckies*, are worked by means of an horizontal wheel; the spokes of which are cut like the valves of a venetian window, and set obliquely into the case of a perpendicular shaft; and, upon these valves, a stream of water, from a narrow spout, at about four feet elevation, falls, with force enough, to give brisk motion to the machine. The water is brought to it, by banking up the stream of the nullah, till it acquires the necessary elevation. The hopper is a conical basket, suspended with the narrow end of the cone over the hole in the stones; and being kept in a gentle motion, it supplies them constantly and regularly. In this manner, two men relieving each other, will grind from four to six maunds of grain in twenty-four hours.

The village at *Ghinouly* consists of three huts. Seldom more than five or six together are to be met with; and it is a large village that has so many as ten.

The hills in this situation, are not so close as those in the road behind me; the ground between, on each side the nullah, elevated and very pleasant; and the cultivation carried to the very summits of those mountains. The sides of all, look greener than those hitherto seen, but I was not yet sensible of any

any moderation in the heat of the day. The thermometer was up to ninety-five, and never lower than seventy-two within my tent.

On the 23d, after a walk of three hours and ten minutes, I arrived at *Dosah*, an inconsiderable village on the banks of the nullah, along which lay the greatest part of the road, from last encampment. This day's journey exhibited a considerable variety of scenery, being now a rugged path, between abrupt impending rocks, and now, little open spaces, surrounded with gently sloping hills, the sides of which are diversified with clumps of fir, oak, and saul, and with cultivated ground. In one of these latter situations, the water is conducted from one side of the nullah, to the fields on the other by an ingenious, though simple contrivance. A trough, formed by hollowing the body of a large fir-tree, is placed across, where the over-hanging rocks favour the communication, and conducts a stream, sufficient for the purpose of irrigation.

The *Koa-nullah* has its source about three miles above *Dosah* to the north, and its first small branch rises in a spring at *Dewara-Kual*, and receives increase from several small rills, issuing from the surrounding hills, between *Dewara-Kual*, and this place.

The bed of the nullah here contains great quantities of *Mica*, of various tints, according to its impregnation with iron or other metallic ores: the mountains exhibit it in very considerable masses; and, in many places, it falls crumbling down their sides, into the water-courses below. Thence it is carried away, by the currents, shining at the bottom, with a lustre little less brilliant than silver. None of it, however, is of so pure a transparency as to serve the purposes to which this substance is usually applied.

The thermometer, to-day, was at the highest ninety, and at four in the morning down to sixty-five; the wind variable and threatening change of weather.

The sportsman may here find ample source of amusement. Black partridge, hares, and quail, are found in plenty, without much labour; and the eager pursuer, who does not consider the ascending of heights, and creeping into jungles, material obstacles to his amusement, will find two species of fowls, and the deer called *parah*, by the natives (*Cervus Porcinus*, L.).

The fish of the nullah are small, but make a very tasted fry, and are an acceptable variety to the scanty supply of animal food procurable: they are mostly of the genus *Cyprinus*, four species of which I particularly remarked. The manner of taking fish in these shallow rapid nullahs may not be unworthy of notice. One method is by rod and line; about eight or ten yards of one end of the line is filled with nooses, or snares, formed of horse hair from one to three or four hairs strong, according to the size of the fish expected to be caught; and at intervals of about fifteen inches, oblong pieces of iron are fixed, to prevent its being carried away by the force of the current: the other end of the line, perhaps ten or twelve yards, is passed through a bow, at the end of a short rod, and kept in the hand below, and both are managed in the same manner as a trowling rod and line; thus prepared, the fisherman casts the end with the snare across the stream, where he lets it remain about half a minute, during which time, he pokes a light forked stick, carried in the right hand, into holes about the stones, thus driving the fish up the stream, against the snares of the line, and on taking it up, generally has secured from one to four fish. By these simple means, he seldom fails, in about half an hour, to get a tolerable fry.

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Another method, practised by the natives, is to stupify or kill them, with vegetable substances: for this purpose they make choice of a pool formed by the current, and turning the stream, by heaping up stones, stop up the supply of fresh water into it, in the same manner, closing every outlet, then bruising the fruit of a tree common here, they cast a quantity into the pool, and in about half an hour, its deleterious effect seldom fails to shew itself: the fish, unable to preserve their equilibrium, tumble about, rise to the surface of the water, and are easily taken with the hands.

On the 24th, in three hours thirty-five minutes, I reached *Belkate*. The scenery, on this day's march, was more beautifully diversified, than in any preceding one. The forests of oak, fir, and boorans*, are here more extensive, and the trees of greater magnitude than any I have yet seen. Unfortunately, neither the traveller's mind, nor his eye, can be enough disengaged, to admire, in security, the sublimity of this prospect: for after the ascent of a pretty high ridge of mountains, the road is continued along their side; winding, and so narrow, that without constant attention, you are in danger of being precipitated into an alarming depth of valley on the right.

The spot, on which I encamped, is a narrow valley, separating the villages of *Bedeyl* and *Belkate*, which are nearly opposite to each other; the river *Nayaar* running between, with a stream beautifully transparent, in the direction of W. N. W.

The principal source which forms this river, if I am to trust the authority of the natives, lies at a place called *Doobree*, about forty eight coss, or four days journey east (to a man on foot, without burthen;) and issues, in a considerable stream, from the root of a tree called *Beh-kul*. It falls into the *Ganges*, about

* See the catalogue annexed to this paper.

nine miles below *Daw-praag*, with which I find the natives have some communication in the rainy season; and through this channel carry on a small traffic in iron, grain, &c. in canoes formed from the trunk of large *Semel* trees.

I crossed the river, in knee-deep water, and pitched my tent under a large mango tree, where two or three trees more afford ample shade for servants of all descriptions.

The mountains in the neighbourhood of this valley lie in lamellated strata of various coloured fissile stones or slate, from a dull clay colour, to ash, bluish black, light brown, and ferruginous brown; in some places a vein of white quartz runs through, in an irregular direction.

The houses here are covered, with a kind, much resembling the common writing slate.

On the 25th I walked, in two hours and fifteen minutes, to *Nataana*, a village of five or six houses upon the brow of a sloping hill. It looks into an excessive deep valley, formed, by the surrounding hills, into a narrow bottom, resembling an inverted cone, and cultivated in ridges, down their sides, to the very base. The road from *Belkate* ascends gradually, and the elevation here is such as considerably to reduce the temperature of the air. From an accident to my thermometer, I could only estimate this by my sensations, which did not indicate a higher degree than eighty-five at noon. The natives say, it continues thus cool, all the month of *May*, and they seldom, at any time, experience excessive heat.

I pitched my tent, at the distance of three quarters of a mile from the village, near a little stream of water,

ter, which supplies the wants of the inhabitants. It issues from the mouth of a bull, rudely hewn out of the rock, and fall into a reservoir below. The stream is not larger than a musquet barrel, but the supply is always constant and clean. The wheat, in some parts, is now ripe, and the women employed in reaping it.

The mountains, for some miles round *Nataanee*, have a naked appearance. No trees to be seen, but upon distant hills; some bushes grow along the ridges, formed for banking up the earth; and the standing corn is almost the only vegetation besides, to be seen. The soil is scanty, and very stony; and the crops thin, except those near the village, which are improved by the little manure the inhabitants give the land; they seem too indolent, however, to extend this improvement beyond one or two ridges: indeed, as the carriage must be upon their own backs, the labour would be great. Their only cattle are bullocks, but those, as far as I could observe, are not used for the carriage of burthens. They draw the plough, trample out the corn: and the milk of the cows forms a principal part of the people's sustenance. Ever since I ascended the ghauts, I observed the same features mark the breed of oxen in those hills; they are low, not exceeding the height of the small *Bengal* cows; their bodies short and thick, legs very short; but slight appearance of that fleshy protuberance, common to the male of these animals in *Hindustan*; their horns are short, tapering, wide at their base, and gradually approximating towards their points, with a slight curve inwards: their heads short, and thick: the prevailing colour is from red to dark brown; with black noses, and black tips to their tails.

Curiosity led me into the village, but what chiefly excited my attention, was the appearance of uncleanness, indolence, and poverty; the only proof of their attention to some kind of comfort, is in the structure

ture of their houses, which are of stone, laid in common mortar, with a sloping roof, covered with fine slate, raised to a second floor, which is occupied by the family, while the lower, or ground one, gives cover to their cattle in bad weather.

Their cows are the only animals to be met with among them, they have neither dog, cat, goat, sheep, nor common fowls.

On the 26th, I marched to *Adwaanee*, along a range of mountains, covered with forest trees, of various species. The distance from *Nataana*, by computation of the natives, is six coss. I was three hours and five minutes in walking it, and considering the nature of the road, and time lost by the stopping, I conclude the true distance to be about eight and a half miles. The distance would be considerably less, on a line drawn from *Nataana* to this place, which regains the former direction, and places *Adwaanee* about N. E. from the point marched from,

This situation is a narrow, elevated ridge, exposed to the influence of a bleak and chilling wind. The only remnant of human industry is the scattered ruin of a house for the accommodation of travellers.

On the 27th. at half an hour past four in the morning, I proceeded on my journey. The road continuing with an ascent, for about half an hour, brought me to the summit of a ridge, from whence is seen the lofty chain of snowy mountains, in a very extended line, from east to west. Those mountains are seen from some parts of *Rohilkund*; but so remote and indistinct, as to give no idea of the magnificent scenery that now opened to my view; the grandeur of which was every moment increasing by the more powerful illumination of the rising sun.

One of the most conspicuous summits of this chain is distinguished by the name of *Hem*, near the base of which is the famous place of *Hindu* worship called *Buddec-nauth*. It is marked to travellers by the greater breadth of its top; and rising in four or five rugged, but rather conical points. Its bearing from where I made these notes was N. N. E.

The road, from this ridge, gradually descending, I arrived, at thirteen minutes past seven, at *Teyka-ca Maanda*. Here is only one indifferent building, for the accommodation of travellers, and a few scattered hamlets appear on the sides of distant mountains.

The air proved here as cold as at *Adwaanee*, and having no shelter from trees, was the more smartly felt. The rocks are of a course dull granite in some places; and in others, extensive beds of various kinds of schistus appear; most of them lying in a vertical position and near the upper surface, dividing into fine laminæ, exhibiting colours, inclining to purple, yellow and green. That most exposed to the air crumbles to dust under its influence.

On the 28th, I walked, in two hours fifty-five minutes, to *Chet-kote*, situated in a confined valley, where the heat was excessive. In the early part of the march, over a gentle ascent, the snowy mountains, which had been concealed by a hill in front, suddenly emerging, presented a spectacle truly magnificent.

29th April, 1796, *Sirinagur*.

I left *Chet-kote* this morning at twenty-five minutes past four, the descent still continuing; and twenty minutes walk brought me to a pretty large nullah which falls into the *Aluknundra*, a short distance below *Sirinagur*. By banking up the stream, it is raised to an height sufficient to work two or three

three of those little mills called *Pun Chukees*, which from their vicinity to the metropolis, are kept in constant employ. This nullah is called *Koonda Guad*. The road continued along it for twenty-two minutes through little fields of unripe corn: leaving the nullah, I ascended for thirteen minutes, which brought me to the summit of a ridge, from whence I had a distinct view of the town and valley of *Sirinagur*; and the winding course of the *Alukmudra* river through it, running in a direction from east to west along the north side of the town. On the top of this hill, a *Fakeer* has stationed himself, to contribute to the relief of the thirsty traveller, and deals out the waters of the holy *Ganges* for a pecuniary compensation.

About fifteen minutes before six o'clock, I reached the valley, and the banks of the river five minutes after. I was here met by a person of the rajah's household, who was sent to congratulate me, on having surmounted the obstacles of a difficult journey; and to know what he could do for me, or what contribute to my immediate accommodation; offering, if a house would be acceptable, to clear one for my reception. The compliment was pleasing, but I knew too well the structure of their habitations, to suppose they could furnish me with better accommodation than my tent. Therefore I declined the offer, and chose for my encampment, a pretty thick mangoe grove, on the south west end of the town, near the foot of the hills.

As I may now promise myself a little rest from daily fatigue, I will take a slight retrospect of the country I have travelled over, before my attention is called to the objects that may here be worth particular notice.

From the ghaut of *Coaxára* to *Sirinagur*, is an assemblage of hills, jumbled together in many forms and directions, sometimes in chains, lying parallel to each other, but of no great extent, and often connected

ected at their termination, by narrow ridges, running at right angles across the vallies between. The summits of all are very narrow, and of various shapes, and the distances between each range short, consequently the vallies much confined, and a late traveller justly observes, "Not a spot is to be seen that would afford room to accommodate one thousand men in tents."

Some of these ranges are covered with forests, and are always green, some are naked and stony, neither affording shelter to the birds of the air, nor the beasts of the field. The number in cultivation form the smallest part, but so few traces of either houses or inhabitants are to be seen, that to sum up the whole in one general conclusion, depopulation and poverty are striking features throughout, and a greater share of the country seems in the undisturbed possession of the birds and beasts of the forests, than appropriated to the residence of man.

In the evening of this day, the rajah paid me the compliment of a visit, accompanied by his two brothers, and some other officers of his suite, besides a considerable crowd; of which, however, many more were led to gratify curiosity than belonged to the train of the rajah. Himself and brothers were on horseback, and except one or two others, the rest followed on foot. They dismounted at the entrance into the grove, where I met the rajah, and after the usual salutation, he introduced me to his brothers PRA-KEREM-SAH and PRETEM-SAH.

This ceremony over, we proceeded to the tent, which was soon filled by this party of all descriptions: much order, however, was observed, and the rajah, after some few questions and complimentary remarks, staid about twenty minutes, when night approaching, he apologized for his hasty departure, and took leave.

He

He appears to be about twenty-seven years of age. in stature something under the middle size, of slender make, regular features, but effeminate. He speaks quick, and not remarkably distinct.

His elder brother is a stouter and more manly person; about twenty-four years, though he has the looks of riper age than his brother. They bear no resemblance to each other. The younger is a strong likeness of the rajah in make, features, and voice; a little under him in size, and, I believe, about nineteen years of age.

In their dresses, no signs of greatness or ostentation appear; they were in plain muslin jamahs with coloured turbans and kummerbunds, without jewels or other decorations, nor was the dress of the rajah in any respect more distinguishing, than those of his brothers.

I found the heat of this day very distressing; sometimes without a breath of air, and when any was evident, it came with an unpleasant warmth.

In the evening of the following day, I returned my visit to the rajah. He received me at the entrance of a court in front of the house, and conducted me by the hand to a square terrace in the center of it. I was here introduced to his vizier and dewan; and after being seated, and compliments over, he commenced a conversation, by asking several questions relative to my journey, manner of travelling, purpose for which I undertook such an expedition, repeating several he had asked the preceding day, on that subject.

He made some remarks relative to the extent of the *British* possessions in *India*, spoke of the late
Rohilla

Rohilla expedition, and noticed the knowledge the *English* possess in the art of war with admiration, and as unequalled by any other nation. He begged to be indulged with a sight of the exercise as practised by our troops; and the little party of sepoys with me performed it, much to his amusement and satisfaction.

After a stay of about an hour, the evening being far advanced, I took my leave.

The valley of *Sirinagur* extends about a mile and a half to the eastward, and as much to the westward of the town. The river *Alukmudra* enters the valley near a village called *Scerkote*, which bears E. , N. from the town. Its course is nearly from east to west; the breadth of the channel from bank to bank about 250 yards; but in the dry season it does not exceed eighty or 100 yards. At the western extremity of the valley, the current strikes with violence against the stony base of the mountain. Near this place, the river is crossed by means of a contrivance called here a *joolah*. Two scaffolds are erected in form of a gallows, one on each side of the stream: over these are stretched very thick ropes, to form, on each hand, a support for the rest of the bridge. To these, by means of pendant ropes, a ladder is fixed horizontally, and over this tottering frame the travellers pass. The main ropes are so slack that the middle of the bridge is within a foot of the water, its breadth will barely admit of two persons abreast. The current beneath runs with rapidity, and it would be dangerous even to a good swimmer, to fall from this bridge into the river. The breadth of the stream, at this part, is about eighty yards, and its depth from ten to twenty feet.

Its bed is composed of large rounded stones, pebbles, gravel, and sand. In two or three places, large fragments

fragments of rock remain ; but if no obstacles of greater consequence exist, to retard the navigation of this branch of the river, floats of timber, or canoes, might at all seasons find a passage through.

The town of *Sirinagur* occupies nearly the center of the valley ; it is in length about three quarters of a mile ; the breadth is much less ; its form somewhat elliptic. It is formed with little attention, either to order or convenience. The houses are of stone, rough and irregularly put together, with the common earth ; generally raised to a second floor ; and all are covered with slate. They are so crowded as to leave little more space for the street, than is sufficient for two persons to pass one another. The principal street, and indeed the only one deserving that name, runs east and west, through the middle of the town : this is pretty broad, and is the only bazar, or market of the place.

The rajah's house is about the middle of the town, and is the largest in it ; one part of it being raised to a fourth story. It is built of a coarse granite, has the appearance of being very old, is much out of repair, and exceeding shabby.

The town, viewed from an eminence, exhibits nothing striking or pleasing to the fancy.

The roads which lead into the town, excepting one, are very narrow, planted on each side with hedges of *Euphorbia Canariensis*, and backed with a wall of loose stones.

In a country, possessing such a variety of climate, it is natural to ask, what advantages induced the primitive settlers to prefer the burning valley
to

of *Sirinagur* for the seat of government, to the more temperate and healthy situations in other parts of this mountainous tract: The result of my enquiries was what I expected. No other parts of the mountains, in the vicinity of the holy waters of the *Ganges*, possess, at the same time, an equal extent of plain ground, and convenience of a sufficient and constant supply of running water, two indispensable requisites in the formation of an extensive settlement, and particularly to settlers whose religious tenets teach them (and justly so) to consider the former among the most valuable gifts of nature; and enjoin them to a very liberal use of that blessing in the performance of some of the sacred functions of their cast.

The foundation of this *raje*, by the records kept in the archives of the state, is placed at a very remote period, but they are so blended with fabulous description, that the account will hardly admit of being related, much more of receiving the sanction of authenticity.

It is stated that 3774 years before the accession of the present rajah, the country was divided into twenty-two purgunnahs, under the government of several chiefs, independant of each other, that they were united by the victorious exertions of a native of *Ahmedabad Gujerat*, named **BOHG DHUNT**, who with his brother **SEDJE DHUNT**, left their native country, to seek for better fortune: and entering the hilly tract, now called *Sirinagur*, took service with the rajah of the country. The former entertained in the service of the *Chaandpore* rajah, with whom, in a few years, he acquired considerable consequence, and was entrusted with high military authority. In this situation, at the advice of a *Jougee*, who appeared in a vision, he formed the ambitious design, not only of seizing the possessions of his master, but of aiming at the conquest of the whole country; and such was his success, that after deposing the rajah of *Chaandpore*, who was by far the most powerful in the country,

try, the rest became an easy conquest, and in the space of a few months, the whole twenty-two districts are said to have been subdued to his controul, and he continued to govern them under the title of rajah of *Geruaal* (the ancient name of the country) during the rest of his life. Dates are wanting to ascertain the length of his reign, as also to prove who were his successors, till the fifteenth generation of lineal descent, when ADJEY PAAL appears. He is said to have been the founder of *Sirinagur*, and there fixed the seat of government, where it has continued, under a succession of sixty rajahs, including the present reigning one PURDOO MAAN SAA.

At my particular request to the rajah, I was furnished with the following table of the princes who have governed this country.

NAMES.	Number of years reigned.	NAMES.	Number of years reigned.
Bogh-Dhunt, the first rajah, between whose reign and Adje Paal, 900 years passed, of which no records exist,	900	Mungul Sain,	32
Adje Paal,	50	15 Choor Mun,	29
His son, Beje Paal,	60	Chinta Mun,	33
Laak Paal,	55	Pooren Mun,	27
5 Dehrm Paal,	65	Birk-e-Baan,	79
Kerrem Paal,	70	Bir Baan,	81
Narrain Deo,	72	20 Soorey Baan,	79
Hurr Deo,	45	Kerreg Singh,	60
Govin Deo,	49	Sooret Singh,	72
10 Raam Deo,	51	Mahah Singh,	75
Runjeet Deo,	53	Anoop Singh,	59
Inder Sain,	35	25 Pertaur Singh,	29
Chunder Sain,	39	Hurree Singh,	39
		Jaggen Naat,	55
		Byjee Naat,	65
		Gookul Naat,	54
		30 Raam Naat,	75
		Goopee Naat,	82

Lechme

NAMES.		Number of years reigned.	NAMES.		Number of years reigned.
	Lechme Naat,	69		Renjeet Narrain,	31
	Preeim Naat,	71		Raamroo,	33
	Saada Nund,	65		Chirstnroo,	49
35	Perma Nund,	62		Jeggeroo,	42
	Maha Nund,	63	55	Herroo,	32
	Sooka Nund,	61		Futteh Sah,	39
	Suba Chund,	59		Dooleb Sah,	50
	Tarra Chund,	44		Purteet Sah,	35
40	Maha Chund,	52		Lallet Sah,	40
	Goolab Chund,	41		who died in 1781,	
	Ram Narrain,	59		and left four sons,	
	Gobind Narrain,	35		was succeeded by	
	Lechmen Narrain,	37		the eldest	
45	Jegget Narrain,	32	60	Jakert Sah,	2½
	Mataub Narrain,	25		and was succeed-	
	Sheetaub Narrain,	37		ed by his brother	
	Aunund Narrain,	42		the present Rajah,	
	Herry Narrain,	45	61	Purdoo Maan Sah.	
50	Mahah Narrain,	33			

Total of years 3,774½

The extent and limits of this *raje*, according to the information given by the rajah's dewan, are marked on the south by *Koadwara ghat* computed forty coss from *Sirinagur*. On the north by *Bud-dreenaut*, called ten days journey, and on the west by *Beshaw*, thirty days journey.

The annual revenue of this country, if the rajah's word is to be taken, does not exceed five lacks and six thousand rupees. This includes duties on exports and imports, the produce in grain, &c. working of mines, and washing of gold.

The collections on cultivation are in some places paid in kind, in others in specie, and generally in the proportion of one half of the produce of the soil.

The remittances in specie, to the capital, I believe, are very inconsiderable; for a great deal goes in the payment of the troops allowed to each district, one fifth of whom are never in employ. It is also a custom to pay, by *tunkhas* on different districts, the troops about the capital, some descriptions of servants, and even the dancing girls and musicians who are kept in monthly hire.

Of the latter description I met several, travelling, perhaps twenty or thirty cosses, with an order on some Zemindar for three or four months arrears of pay.

The produce on washing the sands for gold does not depend on the quantity found, but upon the number employed in this business, each man undertaking this research, pays to the rajah, for that privilege, the sum of one hundred rupees yearly, and the quantity obtained is the property of the worker, without deduction.

The different places, where it is sought for, are *Kerempraag*, *Paenkunda*, *Deapraag*, *Rickercase*, and *Laker-ghat*.

The position of these five places, from the best descriptions I could obtain, are as follows: *Kerempraag* lies three days journey to the eastward of *Kedárnaat*, and on a small river called the *Pinder*, which has its source in the district called *Budhaan*, farther east, but here joins the *Aluknundra*. *Paenkunda*

kanda is on the *Ganges*; *Dewpraag* at the confluence of its two branches, called *Aluknundra* and *Baghyretty*; *Rickercase* is on the *Ganges* about 120 cosses above *Hurdwar*; and *Laker-ghat* a few cosses lower, on the same river.

At *Naagpore* and *Dhunpore*, the former forty cosses N. E. and the latter fifty cosses N. of *Sirina-gur*, are two copper mines. These are worked eight months in the year, the richness of the ore varies much, but upon an average produces fifty per cent of pure metal; one half of which goes to the rajah, the other to defray the expence of extracting it from the mines, smelting, and paying overseers.

At *Dessouly* fifty or fifty-five cosses east of *Sirina-gur*, is a lead mine, the whole produce of this goes to the rajah, and the people, who work it, are kept in constant pay, though their labour is only required eight months out of twelve, and sometimes not so long; the quantity of ore extracted being in proportion to the demand the rajah has for it. As a greater encouragement to the people who undertake the working of this mine, and in consideration of the injury to which their health is exposed, they have small portions of land given to them, on the produce of which no tax is levied by the Zemindar.

Iron is produced in several parts of the country; but particularly at *Chaantpore*, *Belungh*, *Beechaan*, and *Cholah*, but the labour of extracting it is so great, that the rajah gives up the whole to those who will work it.

Other sources of revenue are the importation of rock-salt and borax from *Bootan*; musk in pods, chowries, hawks male and female, from the countries bordering on *Buddreenaat*.

From *Paenkunda* comes a species of blanket called *Punckee*. They are of sheep's wool, of a texture resembling those sold in the *Dooab* and called *Looees*, but stronger and finer.

From *Rohilcund* all kind of cotton cloths are imported, as also considerable quantities of salt, the kind brought from *Lahore*, known commonly by the name *Nemuk Lahooree*. This the *Bootan* people carry back in exchange for the merchandize they bring. A kind of rice is also imported from the southern countries, below the ghats, remarkable for the odour it diffuses, when boiled. It is produced in several parts of *Hindustan*, but particularly in the mountainous countries of *Ramghur*.

At the different ghats or passes into the mountains, duties on imports and some kinds of exports are levied; which, according to the best information I could obtain, is on an average about six per cent on their value, but on some particular articles, an additional duty is laid. The pass at *Coadwara* is rented by an officer called *Hakem*, who pays annually to the rajah twelve thousand rupees.

Upon the authority of the rajah's historian, this *raaje* was, for many years, exempt from tribute to any one. In the reign of ACBAR, that prince demanded of the rajah of *Sirinagur*, an account of the revenues of his *raaje*, and a chart of the country. The rajah being then at court, repaired to the presence the following day; and in obedience to the commands of the king, presented a true statement of his finances, and for the chart of the country, he humorously introduced a lean camel, saying "this is a faithful picture of the territory I possess; *up and down (ooncha neechu)*, and very poor." The king smiled at the ingenuity of the thought, and told him that from the revenues of a country realized with so much labour, and in amount so small, he had nothing

thing to demand. From that period, to the invasion of the country, by the *Gorka* rajah, it does not appear that tribute has been paid to any one; but on the restoration of peace, some time in the year 1792, that rajah demanded, in consideration of relinquishing all the conquests he had made in the *Sirinagur* country, that it should be subject to the payment of the sum of 25,000 rupees annually. This stipulation was ratified by the *Sirinagur* rajah, and the tribute is regularly paid. A vakeel, on his part, resides at the court of the *Gorka* rajah; and at the period when the tribute becomes due, an officer is sent, half way between *Napaul* and *Sirinagur*, to meet and receive it.

The standing forces of the rajah consist of about 5000 men, commonly called *Peedahs*: these are variously armed, according to the custom of the part of the country in which they are stationed; that is to say, with match-locks, bows and arrows, and the sword and shield: the greater number bear the latter, and it is the established and favourite weapon of the country. This body of men is distributed through the several districts, to assist in the collections of the country. One thousand of the number remain at the capital. No attention is shewn either to their dress, or discipline, and they are paid with little regularity.

The natives of *Sirinagur* profess the *Hindu* religion, in the exercise of which I could not discover any variation, from the practice of the lower parts of *Hindustan*.

The town is inhabited by two races of people, distinguished by a difference of feature. This I am inclined to account for, by supposing that many of the natives of the lower countries have, at different and distant periods, emigrated to this part of the world, for the advantage of commerce. It is also common for men of opulence and extensive trade, in other

parts of *India*, to send their agents here, to establish a kind of central communication, between *Bootaan* and the lower *Hindustan*. Many of these people have settled for the rest of their lives, and their families, naturalized, and knowing no other homes, have continued, and increased. From the difference, in stature and features, between these people and the aborigines of the country, it may be concluded that they have little or no intercourse together. The latter are of lower stature, they have better proportioned limbs, faces rounder, eyes a little smaller, and noses shorter, but not flattened.

The dress of the *Sirinagur* mountains is seldom more, among the men, in the cold season, than a course thick blanket, folded loosely over the body, so as to cover all the breast, and reaching just below the knee. The legs and arms remain uncovered; on their heads they wear a small cap, and on their feet, a kind of netted sandal, made of leather thongs, with soles of thicker leather. In the hot season, they wear a kind of frock, of a coarse cloth, manufactured in the country, from the common cultivated hemp. This the women also wear, made into a close bodied kind of gown and petticoat, with sleeves to the elbow, above the breast drawing together with a string. Over all, they wear a loose cotton cloth, of lighter texture; they have seldom any other ornaments than beads of glass about their necks, and rings of various coloured glass upon their wrists.

I observed many of the natives of *Sirinagur* afflicted with those tumours in the neck commonly called wens: some were of a very large size, but never troublesome, or attended with pain. From my enquiries, this disorder is not general through the country, but incident only to those natives who reside near rivers which receive increase from the melting snows.

The

The country to the northward of *Sirinagur*, when viewed from one of the highest ridges, above the valley, discovers five or six ranges or broken chains of hills rising with a gradation above each other. The last or most elevated, reaches, to appearance, about half way up from the base of the stupendous *Himalaya*, whose snowy summits terminate the view from hence. None of the intermediate ranges exhibit the smallest appearance of snow; and though, in the winter season, those nearest to the high ridge, may receive partial falls of it, yet no part remains long upon their surfaces.

With the inclination to pay all possible deference and submission to the accuracy and judgment of Mr. DANIEL, who visited this capital in 1789, yet I must here notice a remark by Mr. RENNELL in his last valuable memoir of a map of *Hindustan*, given upon the authority of the former. The reader is there induced to conclude that a part of the base of the snowy mountains, is at a very inconsiderable distance from the valley of *Sirinagur*.

Mr. DANIEL acknowledges, however, he trusted to the reports of the natives, who make the distance fourteen or fifteen geographic miles. But it is certainly much greater, and, I believe, cannot be less than eighty *English* miles.

I have observed elsewhere that in tracing the river *Atuknundra* from below upwards, through the valley of *Sirinagur*, the course is eastern; and I find, as far as the information of the natives can be trusted, that in a distance of about three days journey, it takes a more northerly direction, near a place called *Roodreepraag*, where it is joined by a river about half its size, called *Kallee Gonga*, the source of which is in the mountains near *Kidaar-nauth* to the north: and its principal branch from a place called *Sindoo Sogur*, issuing out of the rocks. From *Roodreepraag* the course is continued about N. E. and
at

at the distance of three days journey, in that direction, near *Kerempraag*, the *Aluknundra* receives a small river, called *Pinder*, the source of which is in *Budhaan*, the country bordering the rajah's territories on the N. E.

From *Kerempraag*, at the distance of two days journey, in much the same direction, and near a place called *Nundpraag*, it receives the *Gurrela Ganga*. This branch runs through the district of *Dessouly*, and has its source in the mountains to the eastward.

From *Nundpraag*, the *Aluknundra* is said to take a more northerly direction, and at *Bissenpraag*, receives a river from the eastward as large as itself, called *Dood Ganga*, or the milk river, it also is known by the name *Dhoulee*. Pretty near its junction with the *Aluknundra*, it runs between two villages called *Curra* and *Nitty*.

Bissenpraag is situated near the base of the mountain, on which stands the famous temple of *Buddreenaat*; and is of some importance, as being the residence of the pundits and principal *Hindus* of *Buddreenaat*. Here they hold their *darbars*, exercise their laws and the duties of their religion, in the greatest state of security from foreign intruders, and can at any time seclude themselves from the rest of the world, by a removal of the *joalabs* or rope bridges, which form the communication across the *Aluknundra*.

The town consists of about 800 houses, it is a place of some trade, and the inhabitants are all *Hindus*: my informer told me, no one of any other religion, has yet found his way to *Buddreenaat*, and that if I attempted the visit, it must be at the express permission of the rajah of *Sirinagur*. It was, hitherto, a part of my plan, to proceed as far as that celebrated spot, and I had every encouragement to believe

believe this permission would have been granted me. But I found, on the most particular enquiry, as to the nature of the road, that I should not be able to execute the journey in less than fifteen days; even without halting, for the purpose of rest, or prosecuting any enquiries, relative to the nature or productions of the country. My return, therefore, could not have been effected in time to leave the mountainous country before the commencement of the periodical rains. I consequently determined on leaving *Sirinagur*, and marching back by the tract I came.

The immediate execution of this plan became necessary, because the excessive heat had already begun to shew its influence upon my servants, two or three of whom were laid up with violent fevers. I therefore took leave of the rajah on the evening of the 2d, and next morning began my march towards *Futtehgurh*; which was accomplished, without any occurrence, that merits to be recorded,

ENUMERATION of PLANTS noticed in the preceding Tour, between Hurdwar and Sirinagar, in the months of April and May, 1796.

MONANDRIA MONOGYNIA.

Costus Speciosus of Dr. SMITH.—Common to the skirts of these mountains; the stems now in a dry and withered state, the roots brought thence have since flowered. Flowers white, large, produced in a close imbricated terminal spike. Leaves sessile, in spiral like order, lanced, entire, one nerved, smooth, veinless. Calyx above cylindrical, tubular, three cleft; divisions lanced, erect, coloured, permanent. Petals three, unequal, ovate, pointed, with the base slightly truncated. Nectary one leaved, large, waved, spreading, two lipp'd: base tubular, superior lip oblong, lanced, three toothed, shorter than the inferior, anther-bearing. Anthers oblong, two parted, adhering to the upper lip of the nectary, an inch below the point. Germ beneath, roundish, gibbous, style shorter than the nectary, filiform, placed between the anthers. Stigma headed. Pericarp, &c. as in LIN. crowned with the highly coloured calyx. Flowers in August.

Curcuma.—In the forests between Hurdwar and Coadwara ghat, now in flower. Scape from nine to twelve inches high, crowded with yellow flowers and numerous large, ovate-pointed bracts, imbricated; and towards the extremity of the scape, highly coloured with a rose red. Leaves radical, long, and lanced, but do not appear during inflorescence.

DIANDRIA MONOGYNIA.

Jasminum 1.—With climbing stem, columnar; branches opposite, distant. Leaves simple, opposite, petioled, oblong, ovate, acuminate, entire, smooth, four inches by one and a half. Flowers axillary,

axillary, sometimes terminal; peduncles long, slender, threadform, two or three from the same base, one flowered. Calyx very small, tubular, five-toothed; toothlets short. Corol tubular, long. Border five-parted, divisions longer than the tube, linear. Found climbing among other bushes at *Dosah*.

Jasminum 2.—Leaves simple, paired, few, petioled, ovate, much rounded, entire, terminated by a short obtuse acumen; the large leaves three and a half inches long, two and a half broad. Flowers in small terminal cymes. Calyx belled, small, five-toothed; toothlets linear, distant. Corol tubular, cylindrical. Border the length of the tube, five-parted, oblong, equal. Grows to a small tree, in the forests about *Hurdwar*. Flowers, white, sweet scented.

Jasminum 3.—Leaves alternate, pinnated with an odd one; leaflets from two to three pair, subsessile, lance-ovate, entire, smooth, the lower ones least, terminal one largest, eleven lines by five, but variable. Petioles angular. Peduncles terminal, slender, one flowered. Calyx small, belled, five-toothed; toothlets, awled, small, distant. Corol, tubular, long. Border five-parted, divisions ovate, shorter than the tube, spreading. Branches angular, straggling. Found on the side of a water-course, between the mountains at *Adwaanee*, grows to a large bush, flowers yellow, and very sweet.

Justicia Thyrsiformis.—Leaves opposite, petioled, elliptico-lanceolate, entire. The flowers are produced on thyrses-like terminal spikes, intermixed with numerous oblong bracts, ringent, and of a dull orange colour. It comes nearest to *Justicia Coccinea* of Dr. SMITH, in 2d *Fas.* No. 8. The trivial name is added on the opinion of Doctor ROXBURGH. It grows to a large strong bush on the sides of the *Koa-nullah*, near *Amsour*.

Salvia integrifolia.—Leaves opposite, sessile, sub-ovate, entire, woolly, mostly from the lower part of

of the stem. Flowers in whorls; of a light blue, about six in each whorl. Calyx two lipped, the upper lip three toothed, the lower two toothed, and twice longer; the mouth much enlarged. Grows among stones, with a strong fibrous root, difficult to withdraw. Stem herbaceous, about a foot high, angular. The natives gather the young flowers and dress with their common food. The specific name is given on the opinion of Doctor ROXBURGH,

TRIANDRIA MONOGYNIA.

Valeriana.—Leaves various, those of the root hearted, obtuse intire; petioles semicylindrical, long, downy, stem leaves sessile, more pointed, sometimes slightly lobed at the base. Flowers triandrous, of a pale pink and white, in compound terminal umbells. Seeds crowned with a twelve-rayed pappus. Root fleshy, sending forth many long slender fibres, soon after taken out of the earth, becomes highly scented, which it retains as long as in a vegetating state. It is found in several parts of the mountains, affects moist and shaded situations, is herbaceous, grows to about eighteen inches high, very slender. It seems to differ only in the root from the *Jatamansi* of Doctor ROXBURGH, to which these have no resemblance.

TETRANDRIA MONOGYNIA.

Ixora tomentosa of Doctor ROXBURGH.—Found in the neighbourhood of *Ghinouty*, near the *Koa-mullah*, acquires the size of a pretty large tree, though of deformed growth, now in flower. Flowers white, numerous.

PENTANDRIA MONOGYNIA.

Androsace, rotundifolia. — A beautiful little herbaceous plant, found in great abundance on the most elevated ridges of mountains, one day's journey

journey S. W. of *Sirinagur*. Leaves radical, petioled, subrotund, irregularly sinuated. Petioles very long, villous. Flowers about the size of a cow-slip, in umbells, a pretty mixture of white and red, with tints of yellow. Involucre, many leaved, the leaves toothed. Perianths, unequal, in some flowers larger than the corol, many scattered hairs mixed with the flowers.

Lonicera quinquelocularis.—A pretty large bush, with long slender branches. Leaves opposite, petioled, ovate, pointed, sometimes elliptical, entire. Flowers axillary, on short solitary peduncles, each peduncle raising two sessile florets. At the base of the florets, a one-leaved bract, or rather, I think, common calyx, two parted, divisions ovate, concave, coloured. Proper perianth above, small, five toothed, coloured, withering. Corol, one petalled, tubular. Border two parted, or two lipp'd; upper lip oblong, obtuse, entire, reflected; lower more than twice broader, four toothed. Pericarp in an half ripe state, appears to be a capsule, five celled, with about five small, ovate, red seeds in each cell. Doctor ROXBURGH considers the characters of *Lonicera* and *Hamellia* united in this plant, but thinks the irregular corol will fix it as a specimen of the former, and to the second section thereof, and comes nearest *Xylosteum*, but the five celled capsule, and very short common peduncle precludes the idea of their being the same. It grows in the vallies about *Adwuanee*.

Verbascum Thapsus.—In the valley near *Dosah*; a robust plant, from four to five feet high, and from the profusion of its yellow flowers, very showy. The natives have a superstitious notion of the efficacy of this plant in protecting them from the visitations of evil spirits. It is known by the name *Aakul-ber*, or *ver*.

Datura, *Stramonium*.—In every part of the mountains, where villages are found. The natives are well acquainted with its narcotic powers, and infuse

the seeds to increase the intoxicating powers of their common spirituous liquors. The capsules they use as a suppurative. *Datura* is also the name of this plant, in most parts of *Hindustan*; and probably has been carried from the east, to the western world.

Ehretia Tinifolia.—Found both above and below the ghauts—grows to a pretty large tree, now in flower, ripens its fruit about the end of *May*. The berry is about the size of a pepper corn, one celled, four seeded, of an orange yellow insipidly sweet. The natives pickle the unripe berries in vinegar, and eat with their common food.

Vitilago.—Leaves alternate, petioled, two faced, oblong-ovate, acuminate, slightly serrated, serratures wide, unequal: petioles very short; cylindrical, downy. Panicles terminal, peduncles, downy. This plant climbs over other trees with a strong contorted stem. The natives of the mountains apply the bark in a green state, to many useful purposes, as cordage.

Celastrus Scandens 1.—In most of the forests about *Hurdwar*, and vallies above the ghauts.

Celastrus 2.—Leaves alternate, petioled, subrotund, acuminate, serrulate, smooth. Branches slender, cylindrical, spotted. Flowers, in terminal dichotomous, panicles, very small, pale green. Grows to a small tree—in the valley about *Dosah* and *Ghinouly*.

Cedrela.—The tree commonly called *Toon*, described by Sir WILLIAM JONES, in A. R. vol. IV, page 281, is found in the forests bordering the mountains below the ghauts. Grows to a tall tree, but seldom of considerable thickness. Is more in esteem for household furniture by *Europeans*, than for any use the natives put it to; bears resemblance to mahogany, but of much coarser fibre.

Doubtful genus coming nearest to *Hirtellā*.—A small tree on the verge of a rivulet, a few miles S. W. of *Sirinagar*, near the road. Leaves diffuse, petioled, ovate, entire smooth. Petioles long, cylindrical, highly

highly coloured, of a dark shining red, the nerves and veins of the leaves, young branches and leaves coloured in the same manner. Flowers very small, produced on terminal compound diffuse panicles. Peduncles long, very slender, filiform, hairy, stained. Calyx beneath, five cleft, divisions equal, ovate pointed. Corol, five petals, equal, ovate, obtuse, filaments five, very short. Germ, reniform, compressed. Style from the depressed margin of the germ, very short. Stigma simple, a little depressed. Pericarp, resembles a legume, about the size of the seed of *Ervum-lens*, reniform, containing one seed of the same shape, attached to the suture of the valve.

Vitis.—Leaves agree pretty well with the description of *v. Indica*, except that in this plant, they are extremely hoary on both sides, white beneath, brown above, five nerved. The petioles, peduncles, and cirri, are also very hoary. Grows in dry situations in the forests about *Dosah* and *Belkate*, now in flower.

Gardenia Uliginosa 1. ROXBURGH.—Grows to a large tree in the forests on the borders of the mountain, between *Hurdwar* and *Coadwara*. The flowers hexandrous, very large, coriaceous, of a cream white. It is found also in the lower parts of *Rohilcund* near *Futtehgurh*, flowers in the month of *June*.

Gardenia 2.—A small tree in the vicinity of *Hurdwar*, thorny, branches opposite and thorny, thorns opposite, diverging, rigid streight, one terminating the branch, an inch or more in length. Leaves obvate, attenuated at the base, half sessile, bundled, three or more entire. Flowers mostly hexandrous; of a yellowish white mixed with green, scattered about the extremities of the branches, sessile; during inflorescence, few leaves on the tree, and those of the preceding year, ripe fruit remaining, about the bigness of a middle sized orange, orbicular; resembles more a drupe than berry. Seeds nume-

rous, nestling in a softish pulp, contained in a hard five or six valved shell, and this enveloped in a spongy fleshy pulp, half an inch thick, of a greenish white within, externally of a brownish ash, and smooth.

Gardenia 3.—A plant of humble growth, shrubby, none seen exceeding two feet in height, growing among fragments of rocks on the elevated ridge near *Chichooa*. Leaves terminating the branches, without order, rather crowded, petioled, mostly obovate, entire, smooth, one inch by half an inch, petiole very short. Flowers axillary, single, on solitary short peduncles, of a greenish white colour, and very sweet to the smell. Perianth above, one leaved, half five cleft, divisions awled, erect, permanent. Corol, funnel form, tube long, widening upwards, partly closed about the middle by a ring of silky down. Border five-parted, divisions ovate, equal. Filaments short, within the tube. Anthers oblong, partly within the tube. Germ globular. Style length of the tube. Stigma two lobed, lobes, ovate, flattened, appressed. Pericarp, a berry crowned with the calyx, about the size of a common pea, one celled, four seeded.

Nerium reticulata. 1.—A strong climber, about the trees near *Amsour*.

Nerium 2.—With leaves opposite, petioled, ovate, pointed entire, downy; petioles very short, gibbous; follicles two, long, a little compressed, breadth of the forefinger. The flowers terminate the branches, on four or five short divided peduncles, about the size of a primrose, of a greenish white, very sweet scented. It is found in plenty in the forests at the foot of the ghaut. Both flower and fruit now on the tree. The nectary in this species differs from the generic description; it is here composed of twelve yellow tridentated scales, about half the length of the stamens, neither are the anthers terminated by threads, but rigid at the apices. I have called it a *Nerium* in deference to
the

the judgment of a better botanist, but it will bear comparison with the next genus *Echites*, I think.

Echites Antidysentricum. Rox.—A small tree in the forests about *Hurdwar*. Leaves opposite, half or sub-petioled, ovate, oblong, pointed, entire, waved, smooth, shining, one nerved, with many pairs of lateral, parallel, ribs. The *Linnean* characters of the fructification, do not strictly agree with this plant. The nectary is here wanting. Anthers almost at the bottom of the tube, filaments, scarcely any. The follicles agree with those of *Nerium Antidysentricum*. The seeds are in great repute among the natives of *Hindustan* as a vermifuge.

Genus not determincd.—A small tree, or rather large bush, growing by the road side near *Tcyka-ka-Mandu*. Leaves about the tops of the branches, irregularly opposite, petioled, ovate, variously pointed, serrated, smooth, one nerved; petioles short. Flowers paniced about the ends of the branches—yellowish, with many brown veins, more coloured above. Calyx five cleft, expanding, the divisions slightly lacerated at the edges, rounded, coloured. Corol, five petaled—petals oblong, ovate, obtuse, twice larger than the calyx, with a short claw. Filaments five, shorter than the corol, enlarged below, and resembling the germ, slightly coalescing at the base into a ring. Anthers oblong, erect. Germ above, orbicular, smooth, the size of the glandulous base of the stamens, in the center of them. Style the length of the stamens, filiform, stigma simple, truncated. Pericarp, not seen.

PENTANDRIA DIGYNIA.

Apocynum.—A strong climbing bush, spreading itself with much profusion over the under wood of forests between *Dosah* and *Sirinagur*. The flowers numerous, pure white, and highly scented, size of a primrose, branches cylindrical, opposite, leaves in the same order, petioled, lance-ovate, entire, smooth; petioles short. Calyx five-parted, small, lanced, downy. Corol one petaled, wheeled, tube,

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length

length of the calyx. Border five cleft, segments, equal, rounded, spreading. Nectary, five glandulous bodies, surrounding the germ, filaments five, short, compressed, internally downy, anthers rigid, oblong, pointed, converging, cleft at the base. Germs two. Style length of the stamens, stigma oval, compressed, two lobed, attenuated. Pericarp, follicles two, oblong, bellied, pointed, smooth, one celled, one valved, seeds numerous, imbricated, compressed, crowned with long silky pappus. It bears some affinity to the genus *Echites*. It is also found in several parts of *Rohilcund* and the *Dooab*.

Asclepias doubtful.—A shrubby climber, now coming into flower—branches cylindrical, smooth, opposite. Leaves opposite, heart ovate, much rounded beneath, pointed above, petioled. Flowers in axillary nodding cymes, of a pale green. Calyx five-cleft, small, villous, divisions ovate, equal, spreading. Corol flat, border five-cleft, segments broad, obtusely ovate. Nectary, five glandular corpuscles, into which the anthers are inserted without filaments. Germs two, styles none. Pericarp not seen, therefore its place in the system yet doubtful. Found near the ghat of *Coadwara*.

Herniaria, doubtful.—A shrubby bush, with numerous slender stems and branches, and covered with a profusion of minute yellow flowers. Leaves alternate, petioled, ovate, rather elliptical, entire, smooth, petioles short. Calyx five-parted, divisions unequal, erect, coloured. Corol none. Nectary, five minute glandulous, three toothed scales, surrounding the foot of the styles. Filaments five, capillary, longer than the calyx, erect, inserted into the base of the calyx. Anthers, simple, erect. Styles two, filiform. Stigmas simple, recurvated. Germ too minute for inspection in its present state, and as the pericarp is not yet seen, future observation must determine the genus yet doubtful. Many bushes of it grow in the forest about *Coadwara*—it was observed in the middle of *May*, therefore we may

may conclude the month of *June* would be a fitter time for the examination.

Gentiana Nana.—Growing and flowering, in much abundance and beauty, on the elevated mountains near *Chichooa*.

PENTANDRIA TRIGYNIA.

A slender twiggy climbing plant, on the mountains near *Hurdwar*. Branches alternate, columnar, smooth, scattered. Leaves alternate, shortly petioled, ovate, oblong, attenuated, sometimes a little hearted at the base, entire, smooth, distant. Near the termination of each branch is generally one simple cirrus. Flowers terminal, sometimes axillary, in slender diffuse panicles, rather inconspicuous, and very small. Calyx, one leaved, half five-cleft, divisions equal. Corol none. Stamens five, little longer than the calyx. Anthers twin. Germs three, orbicular, smooth, very small. Style one, the length of the stamens. Stigma headed, five-cornered. Pericarp.

PENTANDRIA PENTAGYNIA.

Linum trigynum. Roxb.—A plant well known in our gardens at *Cawnpore* and *Lucknow*, by the name *Gul-ashurfee*, is a native of the high mountains, between *Nutaana* and *Advaanee*. It is perennial, shrubby, grows to a spreading bush about four feet high, stem and branches erect, slender, piped. It makes a handsome appearance with its numerous yellow flowers in *March* and *April*, would doubtless by some care thrive in the climate of *Britain*.

HEXANDRIA MONOGYNIA.

Berberis Illicifolia.—Grows in plenty in the valley through which the *Koa-nullah* has its course, now full in flower, and green fruit. The fruit when ripe is black, and eat by the natives. The wood is of a

A a 3

deep

deep yellow, and used in dying, but under the management of the natives the colour is not permanent.

HEXANDRIA TRIGYNIA.

Rumex Aegyptius and *Rumex Acetosella*.—Along the sides and dry parts of the *Koa-nullah*.

OCTANDRIA MONOGYNIA.

Polygonum Convolvulus.—Growing along the sides of the *Koa-nullah*. In some parts of these mountains it is cultivated for common food among the poorer natives.

ENEANDRIA MONOGYNIA.

Laurus Cassia.—Grows to the size of a small tree, on the sides of the mountains, near the roads to the northward of *Belkate*. In addition to the *Linnean* generic characters, noticed. Petals hairy, anthers the length of the filaments, slightly compressed, four celled, four valved, or with four lids, which on the exclusion of the pollen, fly up, and leave the cells very distinct.

DECANDRIA MONOGYNIA.

Bauhinia Scandens.—Growing on the skirts of the forest along the *Ganges*, near *Hurdwar*, spreading itself most profusely over the heads of every other tree; and mostly concealing with its broad leaves, the foliage and branches of the trees on which it climbs. The flowers are a mixture of white and cream colour, produced on simple terminal racemes. Stamens unequal, three only fertile. Legume large compressed. Found also on the mountains above the *ghats*.

Bauhinia Variegata.—Common to the mountains; also a variety with milk white flowers, both in flower.

Guilandina

Guilandina Moringa.—In the forests at the foot of the mountains. Trees very large and numerous, now in fruit only.

Murraya Exotica.—Growing to the size of a large bush in the valley near *Amsour*, now in flower.

Melia Azadirachta.—Grows to a large spreading tree in the forest near *Coadwara*, now in flower.

Doubtful.—Growing near *Coadwara* at the foot of the *ghat*, and in the neighbourhood of *Hurdwar*, a large spreading lofty tree, full in flower, the young leaves just starting forth; these are pinnated: leaflets from five to six pair, with an odd one, sessile, ovate, pointed, serrated. Flowers of a pale yellow, varied by tints of brownish orange from the coloured calyxes, produced on terminal compound racemes. Calyx one leaved, pitched, coloured, mouth five-cleft, expanding, withering. Corol petals five, lance-linear, alternate with the divisions of the calyx, and inserted into the sinuses. Stamens, filaments ten, awled, hairy, the alternate ones shorter, inserted into the calyx, anthers oblong, furrowed. Pistil, germ above, roundish, slightly depressed. Style thread-form, the length of the calyx, hairy, partly coloured. Stigma, headed, depressed, five-cornered. Pericarp drupe, dry, orbicular, with distant rounded angles, depressed. Seed, nuts five, size of a small peppercorn, roundish, hard, furrowed, each containing one seed, of the same form. It comes nearest to *Quisqualis*, and if it cannot be admitted there, will probably form a new genus.

Doubtful.—Growing in forests of oak on the high ridge of mountains near *Advaance*, a large tree, just now conspicuous, for its abundant display of large crimson flowers, leaves without order about the upper part of the branches, petioled, lance-oblong, entire smooth above, hoary white beneath. The flowers, are produced on terminal simple racemes. Calyx one leaved, very small, coloured, five toothed, toothlets obtuse, the two superior

ones larger, deciduous. Corol, one petaled, large, tubular, bell mouthed, tube very wide, contracting at the case. Border five cleft, divisions broad, unequally end nicked. Stamens, filaments ten, of unequal lengths, the longest the length of the corol, erect, appressed to the sides of the germ. Anthers oblong, thick, incumbent. Germ above, columnar, hoary, marked with the pressure of the stamens. Style longer than the stamens. Stigma headed, round, depressed. Pericarp, capsule, columnar, ten celled, many seeded. It approaches nearest to *Rhododendron*, but will probably not be admissible there; and, perhaps, will form a new genus. The natives called it *Boorans*, the wood is used for making the stocks of matchlocks.

Arbutus doubtful.—A tree of medium size found in forests of fir, oak, &c. between *Nataana* and *Adwaanee*, crowded racemes of white monopetalous flowers, terminal and drooping. Leaves alternate, petioled ovate, pointed, entire, Calyx half five-cleft, small, divisions ovate, erect. Corol pitcher-ed, many times longer than the calyx, bellied, neck very narrow; mouth five toothed, toothlets equal, short, obtuse. Stamens, filaments ten, sometimes longer than the corol, and confined by the narrowness of the neck within it, awled, thick at the base, somewhat hairy, inserted into the base of the tube. Germ above, globular, seated on a five-cornered fleshy receptacle. Pericarp (in an unripe state) berry five-celled, many seeded. The natives call the tree *Aiaar*, and apply the expressed juice of the leaves with much success in cutaneous eruptions.

DECANDRIA TRIGYNIA.

Banisteria Benghalensis, *Lin. Syst. Nat. cur.* GMEL. II. p. 724.—*Gaertnera Indica*, *ib.* p. 685.—*Hiptage Mada blota*, GÆRTNER, II. 169, t. 116.—*Gaertnera Racemosa*, ROXB. *Ind. Plants*, Vol. I. N. 18.—This plant so well described by the late Sir WILLIAM JONES, vol. IV. *Asiatick Researches*,

searches, grows in great abundance in several parts of the mountains, but particularly on the banks of the *Koa-nullah* near *Dosah*, climbing profusely upon other trees, and beautiful in display of its crowded racemes of flowers.

DECANDRIA PENTAGYNIA.

Spondias Myrobalanus.—A forest tree between *Am-sour* and *Ghinouly*, now in flower.

Sedum Album.—Growing out of the interstices of stone walls, laid against the slopes of mountains, to retain the soil from washing down. The white flowers have tints of pale red, and make a pretty show in so humble a plant.

Oxalis Acetosella.—On the heights of *Chichooa*, on a small spot of pasture.

Cerastium Alpinum.—About *Teyka-ka-Maanda*.

Doubtful.—Found in the neighbourhood of *Adwaanee*. A slender bushy shrub. Leaves opposite, sub-petioled, lance-ovate, sometimes obtuse, serrulate, rough, downy beneath. Calyx one-leaved, belled: border half five-cleft: division equal, ovate, pointed, erect. Corol, petals five, ovate, cut off at the base, equal, about twice longer than the calyx, spreading. Nectaries, ten oblong, compressed, erect scales, forming a coronet, but not conjoined; as long as the petals, the alternate ones less, broadest at their apices, and widely notched, staminiferous, seated on the germ-covering receptacle. Stamens, filaments ten, very short, filiform, of which five are inserted into the apices of the longest nectarious scales, and five into the sides of the shorter, about the middle. Anthers globular, four cornered, alternately less, erect. Germ above, globular, covered with a fleshy depressed ring. Styles five, filiform, length of the petals, approximated, rising through the middle of the germ-covering receptacle. Stigmas simple. Pericarp (in an unripe state) capsular, round, five-celled. Seeds numerous, attached to

a receptacle in each cell. It will most likely form a new genus. The flowers are white, on terminal, solitary racemes, and scattered.

DODECANDRIA MONOGYNIA.

Cartaeca Tapia.—A forest tree in the neighbourhood of the mountains, and now in flower.

Grislea-tomentosa, Dr. ROXBURGH.—In great plenty about *Hurdwar*, and the interior part of the mountains. The flower used as a cooling medicine by the natives, and as a colouring drug in combination with the root of *Morinda Citrifolia* in dying red, as described by Dr. HUNTER, in *Asiatick Researches*, vol. IV.

DODECANDRIA TRIGYNIA.

Euphorbia-Canariensis.—In several parts of the mountains.

ICOSANDRIA MONOGYNIA.

Punica-granatum.—Growing on the sides of the mountains, between *Belkate* and *Nataana*, two or three small trees, now in flower; the fruit never eatable the natives say; called by them *Daarmee-Kutta*.

Prunus.—A cherry tree, of common size, found in several places, between the mountains. Leaves irregularly alternate, petioled, serrulated, smooth, shining, with two globular glands at the base.—The fruit in clusters, about the size of the black *Hertfordshire* cherry, of a roundish oval, acid and astringent in a ripe state, and of a dull red colour. The nut furrowed and thick. The wood is in much esteem among the travelling *Fakeers* for bludgeons and walking sticks, and known in common by the name of *Puddum*.

ICOSANDRIA DIGYNIA.

Cratægus.—Growing among detached rocks on the high

high mountains near *Chichooa*. Stem woody, slender, procumbent. Branches without order, mostly two-faced, columnar, terminating with an obtuse rigid point. Leaves, the youngest fascicled, when more advanced appear alternate, petioled, wedge-form, sometimes ovate, entire, hairy beneath, smooth and shining, above five-eighths of an inch in length, including a petiole of one-eighth. Peduncles axillary, solitary, one-flowered, short, hairy, Calyxes hairy.—Flowers white, fragrant. Berry, size of a common pea, red when ripe.

ICOSANDRIA PENTAGYNIA.

Pyrus.—With branches alternate, slender, cylindrical. Leaves, about the ends of the branches, long-petioled, ovate, acuminate, serrulate, smooth. Peduncles solitary, cylindrical, long, erect, intermixed with the leaves. Fruit globular, size of a pigeon's egg, of a russet-brown, spotted, harsh to the taste, and stony. Grows to a small tree in several parts of the mountains between *Nataana* and *Advaanee*. Flowers in *March*.

Spiraea? doubtful.—Leaves alternate, oblong, ovate, petioled, entire towards the base, obscurely crenate upwards, sometimes entire. Corymbs terminal. Flowers small, numerous, of a yellowish white. Calyx, corol, stamens, and pistil, not materially differing from the *Linnean* characters; but to these must be added in the present species—Nectary twelve small, fleshy, compressed, oblong scales, covering the base of the stamens, and united below to the side of the calyx, emarginated above. Pericarp not seen. Grows to a slender tall twiggy bush. Found a few miles S. W. of *Sirinagur*. near the village of *Nandaala*. It most resembles *S. Crenata* of LINNÆUS.

ICOSANDRIA POLYGYNIA.

Rosa.—Stems numerous, smooth, thorny. Leaves

alternate,

alternate. Petioles thorny, pinnated, from three to five pair of leaflets with an odd one, ovate, pointed, smooth, serrated. Germ ovate, smooth. Peduncles hispid. Flowers pure white, in great profusion, and highly fragrant, resembling in smell the clove. Very large bushes of this rose are found in the vallies of these mountains, called by the natives *Koonja*.

Rubus.—Numerous straggling bushes, found most part of the way between *Coadwara ghat* and *Sirinagur*, producing yellow fruit the size of the common red raspberry, of an agreeable acidulated sweet, and which affords a most acceptable means of relieving the thirsty traveller. The stems, branches, and petioles, are very hispid, and armed with short recurvated prickles. Racemes terminal. Flowers white. Leaves alternate. Leaflets ovate, pointed, serrated. Called by the natives *Gowry-phul*.

Rubus Idaeus.—Found in oak forests, a few miles S. W. of *Sirinagur*, and in the valley of *Sirinagur*. Flowers of a pink red. Fruit, agreeable to the taste, but possessing, in a very small degree, the flavor of cultivated raspberry. The stems and branches smooth, armed with strong recurvated prickles, as also the common petiole. Leaflets, from three to five pair, with an odd one. Sessile ovate, deeply serrated, white beneath.

Fragaria Sterilis.—On the sides of those mountains which are much shaded, and soil rich.

Potentilla fragarioides.—On the mountains about *Nataana*.

Potentilla reptans.—On the high ridge near *Chichooa*.

POLYANDRIA MONOGYNIA.

Lagerstroemia Montana, ROXBURGH.—This tree grows to sixty or seventy feet high. Stem straight, thick, and clear of branches to a great height (forty feet). Flowers with much beauty in the month of *May*. Grows both above and below the *gha'ts*. Trees not numerous,

Doubtful,

Doubtful.—Found between *Adwaanee* and *Teyka-ka-Maanda*, a small tree thickly covered with flowers of a yellowish white, and so fragrant as to be evident to the senses at a considerable distance. It bears the following characters. Leaves alternate, petioled, ovate, serrated, about the base almost entire, smooth above, nerves hairy beneath. Petioles very short, channeled hairy. Racemes rather simple, terminal, and from the axills of the leaves, numerous. Peduncles hairy. Calyx perianth, one leaved, half five-cleft, coloured: divisions thin, obtusely ovate, rather unequal. Corol, petals, five, ovate, rounded, two a little less, slightly adhering to each other at the base. Nectaries, five rounded, compressed glands, sitting on the germ, surrounding the style. Stamens, filaments thirty or more, longer than the corol, unequal, slightly attached in parcels to the base of the petals. Anthers roundish, erect. Germ beneath. Style shorter than the filaments, thicker, compressed. Stigma headed, depressed. Pericarp (in an unripe state) two celled, in each two or three ovate seeds. It has most affinity, perhaps, with the genus *Tilia*, except in the pericarp, and on the examination of this, when it can be obtained perfect, we must depend to ascertain its place in the system.

POLYANDRIA POLYGYNIA.

Uvaria.—Near *Coadwara*, above the *ghauts*, a very lofty tree.

DIDYNAMIA GYMNOSPERMIA.

Ballota.—A bushy half shrubby plant on the side of the mountains, and near the road descending into the valley of *Belkate*. About three feet high, seemingly annual, stems and branches four cornered. Leaves opposite, petioled, ovate, acuminate, serrated, (teeth distant, deep, obtuse), downy, veined. Flowers axillary. Peduncles very short, solitary, six flowered, have the appearance of verticels, bracted.

bracted. Calyx tubular, long, ten striated, bell-mouthed: border five-parted: the divisions sub-ovate, veined, leaf-like, as long as the tube, erect. The rest of the fructification not differing materially from the generic characters of LINNÆUS. The whole plant is extremely bitter, and used by the natives in watery infusions as a stomachic.

DIDYNAMIA ANGIOSPERMIA.

Bignonia Chelonoides.—Grows to a pretty large tree in the neighbourhood of *Hurdwar* and *Coatwara*. Nothing remains to be said in addition to the minute description given of this plant by the late Sir WILLIAM JONES, *Asiatick Researches*, vol. IV.

Gmelina Arborca.—A large spreading tree in the neighbourhood of *Hurdwar*, and forests on the skirts of these mountains, now in flower, the fruit ripens about the end of *May*. The wood is light, and used by the natives of *Hindustan* for making the cylinders of those drums called *D'holuks*. Name of the tree *Kum-haar*.

Volkameria? bicolor.—A very handsome species, (if a *Volkameria*) the trivial name taken from the party-coloured corol, one division of which is of a fine blue, the other pure white. Racemes terminal, compound, large. Leaves opposite, petioled, from six to ten pairs on a branchlet, ovate, lance-acuminated, entire towards the base, above, (as far as the acumen), serrated. The calyxes and seeds of this plant are highly aromatic. It grows in abundance in several vallies of these mountains, now in full flower, and ripened seeds.

Vitex trifolia.—Common both above and below the *ghauts*.

MONADELPHIA MONOGYNIA.

A tree in the forests near *Coatwara*, now in fruit, a large berry, as big as a common sized lemon, and somewhat of that shape, growing in close clusters,

ters, five or six, sessile, and crowned with the enlarged permanent calyx, some retaining the whole of the dry fructification, perfect enough for examination, and which exhibit the following characters. Calyx four-parted, above: divisions ovate, obtuse, concave. Corol, petals four, rather obovate, oblong, twice the length of the divisions of the calyx ($1 \text{ inch } \frac{1}{11}$), truncated at the base, stamens, filaments very numerous (300), capillary conjoined below in a ring, and seated on the receptacle covering the germ. Style longer than the stamens, thicker, filiform. Stigma headed. The berry is composed of a spongy whitish pulp. Seeds, six, eight, or more, nestling, about the size of the seeds of a citron, and of that form, a little compressed. Leaves, terminating the branches, subsessile, subrotund, attenuated at the base, ending in a short acumen above, serrated large, a perfect description and figure of this plant, may be expected from the extensive and invaluable collection of Mr. R. BRUCE, where it has been for some years, and forms one of the many new genera, wherewith that gentleman is about to enrich the science of botany.

MONADELPHIA DECANDRIA.

Geranium.—A very slender herbaceous kind, growing among weeds and bushes on the highest mountains about *Nataana*. Leaves petioled, from three to five lobed, lobes trifid; petioles very long, filiform. Peduncles axillary, solitary, resembling the petioles, one flowered. Flowers pale rose, with a deep purple eye at the base of each petal.

MONADELPHIA POLYANDRIA.

Bombax Ceiba.—Grows in the vallies of these mountains to a very considerable tree, none exceeding it in size, and regularity of growth: its wood is converted to many uses, where lightness more than strength is sought for. For the scabbards of swords, it is much used, and canoes of large size

size are hollowed from its trunk. A variety of this tree is also found with flowers of a reddish yellow, the petals, oblong ovate.

Bombax Gossypium.—A small tree, a great ornament to the sloping sides of the mountains in the vicinity of *Hurdwar*, the flowers yellow, large, and conspicuously bright, on simple terminal racemes, no leaves during inflorescence. The wood of this tree resembles, for its lightness, that of *Bombax Ceiba*, and the young branches abound in a transparent white mucilage, which is given out on immersion in cold water. Seeds sent to the botanical garden in *Calcutta* have come up.

DIADELPHIA DECANDRIA.

Robinia 1.—A large tree with spreading bushy head, leaves pinnated, leaflets petioled, two pair with an odd one, large, ovate, entire, shortly acuminate, smooth, shining. Racemes axillary, simple, large and showy; flowers white mixed with pink. Peduncles *common*, columnar, long; *proper*, short, one-flowered. Legume short, between oval and kidney shape, turgid, a little compressed, one seeded, seed more reniform, compressed, covered with a dark brown arill. The leaves, racemes, &c. have an unpleasant smell. The natives apply the expressed juice of the unripe legumes, as a remedy for the itch. The tree is called by them *Pitpapa*, is found both below and above the *ghats*.

Robinia 2.—With woody climbing stem and branches, leaves pinnated with an odd one, leaflets from three to five pair, with short gibbous petioles, oblong ovate, (five inches by three) obtusely pointed, entire, common, petioles very long, downy. Racemes terminal, simple, flowers of a dull white. Peduncles downy. Legumes, oblong, linear, compressed, smooth. Seeds about six, compressed, of a roundish kidney shape. The ripe legumes fly open with considerable force, and noise, and take a twisted form. - It is common in every forest above the *ghats*, is found also along the banks

banks of the *Ganges*, as low as *Futteghurh*, where seeds are probably brought by the current, and lodged, not being found in the jungles of the *Dooab*.

Robinia 3. Doubtful.—With strong contorted stem, twenty inches circumference, climbing over the highest trees in the forests about *Hurdwar*, now without leaves (*April*), but loaded with long terminal pendulous racemes of blue and white flowers. Peduncles columnar, downy, proper, one flowered. Legumes long, sub-linear, compressed, pointed with the persisting style, hairy, adhering to the skin when handled, and slightly irritating. Seeds about six, kidney shape, compressed, smooth, varying in colour, size of those of *Ercum-lens*. The parts of fructification agree best with the characters of *Robinia*. The leaves not yet seen.

Pterocarpus—The common tree in the forests, on the skirts of these mountains, delights in a flat, rich soil. Is a timber of extensive use, hard, durable, and handsome, well known in *Hindustan*, under the name of *Seessoon*.

POLYADELPHIA POLYANDRIA.

Hypericum.—An under shrub, of much beauty, on the elevated hills, between *Dosay* and *Bedeyl*. Grows to about three feet high, branches numerous, cylindrical, smooth, all terminated with corymb-like clusters of large yellow pentagynous flowers. Leaves opposite, sessile, oblong, oval, entire, smooth, the large leaves about three and a half inches by one and a half. Capsule five-celled, many seeded : seeds oblong.

SYNGENESIA POLYGAMIA ÆQUALIS.

Premnanthes.—A very pretty half shrubby species, growing out of the hard clay banks of the *Ganges*, near *Hurdwar*, stems numerous and procumbent, very leafy, and marked with the vestiges of fallen

VOL. VI.

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leaves,

leaves. Flowers in corymb-like panicles, terminating the branches, a pretty mixture of white and red, florets five-fold. Leaves without order, petioled, obovate, widely serrated; entire towards the base. Seeds five, crowned with a hairy pappus, seated on the naked receptacle.

On the sides of the mountains between *Dosah* and *Belkate*, a small tree, with black fissured bark, irregular crooked branches. Leaves about the ends of the branches without order, petioled, elliptical, one-nerved, entire, about six inches long, white beneath, with a dense cottony down, smooth above; petioles and peduncles, downy, like the leaves. Flowers in cymes terminating the branches, possessing the following characters. Calyx oblong, formed of about twelve unequal imbricated lance-shape scales, increasing in size from the base, the interior series much longer, erect, and retaining the florets. Corol compound, tubular; corollets hermaphrodite, constantly four equal. Proper, tubular, slender, longer than the calyx; border five-cleft; laciniaë long, linear. Stamens, pist, &c. as in the genus *Cacalia*. Seeds solitary, oblong, attenuated at the base, silky pappus hairy, stiff, erect, the length of the stamens. It comes nearest to the genus *Cacalia*, and to *C. Aselepiadea*.

Leontodon taraxacum.—On the high mountains near *Chichooa*.

Hypochoeris glabra and *Hypochoeris radiata*.—On the mountains about *Teyka-ka-Maanda* and *Chichooa*.

SYNGENESIA MONOGAMIA.

Lobelia Kalmii.—On the sides of the mountains near *Dosa*.

Viola palustris.—On the sides of the mountains between *Adwaanee* and *Teyka-ka-Maanda*.

Impatiens Noli-tangere.—In the bed of the *Koa-nullah*, a showy handsome plant, now in flower.

GYNANDRIA

GYNANDRIA DIANDRIA.

Limodorum.—In the low grounds near *Asoph-gurh*, below *Hurdwar*. Bulbs solid, large, smooth, mostly triangular, the corners pointed, sending forth a few fibres; scape simple, from the middle of the bulb, columnar, smooth; erect, about twelve inches high. Flowers scattered: petals oblong-linear, nearly equal: nectary three-cleft, the middle division much larger, rounded. It resembles *L. Virens* of Doctor ROXBURGH.

Epidendrum 1.—Leaves two ranked, sessile, sheathing the stem, oblong-linear, carinated, ending as if cut off. Racemes axillary, simple, drooping: peduncles as long as the leaves, cylindrical; *proper*, one flowered. Flowers scattered, large, white mixed with pink, and very fragrant. Bracts lanced, concave, coloured, one to each *proper* peduncle. Nectary, horn-shaped, incurvated. It adheres to the stems of trees, by many strong fibres shooting forth from among the leaves. It approaches nearest to *E. furvum*.

Epidendrum 2.—Leaves radical, sessile, lanced, entire, succulent, the interior margin of each leaf, near the base, is split open longitudinally, forming a sheath which receives the edge of the adjoining leaf: leaves seldom exceeding one inch and a half in length: racemes simple, from the centre of the leaves, but little longer, slender, many flowered. Capsule six-angled, broader above. Roots fibrous, numerous, slender, spreading themselves into the fissures of the bark of large trees. The above two species, common both in vallies, and on the tops of mountains.

GYNANDRIA DECANDRIA.

Helicteres Isora.—In great abundance along the skirts of the mountains from *Hurdwar* to *Cozdwarra*, now in flower, very well known in most bazars under the name *Merotarie*, from the resemblance its contorted capsules bear to a screw, an *Hinduwee* name for that instrument.

GYNANDRIA POLYANDRIA.

Grewia 1.—With leaves alternate, short petioled, three nerved, ovate, much pointed, serrated, harsh to the touch. Calyx, five-leaved: leaves lance-linear, nerved, spreading. The petals resemble the leaves of the calyx, but are smaller. Filaments numerous, germ roundish, obtusely four cornered, villous. Stigma headed, depressed, five lobed, or cleft. The flowers are of a greenish white, mostly in threes on one common peduncle; peduncles solitary, and opposed to the leaves. Grows to a small tree, numerous on the islands of the *Ganges* near *Hurdwar*.

Grewia 2.—Leaves alternate, petioled, three nerved, ovate, serrated, tomentose, more so beneath than above, white, and resembling the feel of velvet; petioles very short, downy; peduncles axillary, crowded, short, trichotomous, downy. The flowers are much smaller than in the preceding species, and of an orange yellow; the calyxes covered with the same velvet-like nap, the germ thickly enveloped therein, and the younger branches also covered with it. This grows to a large tree in the mountains about *Amsore*. Fruit not seen.

Pothos.—With large hearted petioled leaves, entire, without nerves, smooth. Petioles long, carinated, sheathing the stem. Flowers not seen; the large cylindrical spadix now crowded with ripe seeds, of an irregular ovate shape, about the size of a common pea, covered with a soft aril of a deep red, numerous, and affixed to a common receptacle, the whole externally defended by a thick capsular covering, internally, marked with as many cells as seeds, externally, with numerous reticulated lines, and minutely dotted. On handling the broken pieces of this covering, many shining needle-like points penetrate the skin, and produce irritation. The stems slender, jointed, sending forth fibres, which spread on the bodies of those trees over which they climb. The natives call it
Huat-phool,

MONOECIA TRIANDRIA.

Haat-phool, from the irritation excited on incautiously handling it. It seems to be *Appendix-portellanica* of RUMPHIUS.

Phyllanthus grandifolia.—Now in flower on the sides of the mountains near *Bedeyl*.

MONOECIA TETRANDRIA.

Betula.—Leaves alternate, petioled, ovate, obtuse, obscurely serrated. Peduncles axillary, aments fessile, conical, about the size of a small nutmeg, the dry aments the only part of the fructification seen. Grows to a pretty large tree, the bark is an article of trade into the plains of *Hindustan*, said to be used by the manufacturers of chintz to dye red, known by the name of *Attcess*. Saw several trees between *Dosah* and *Belkate*.

Cicca disticha.—*Averrhoa acida*, LIN. Syst. ed. XIII, 357.—*Terme*, GÆRTN. 2. 487. t. 180.—*Phyllanthus*, ROX.—A forest tree in the vallies of these mountains, now in flower, grows to a considerable size.

Morus 1.—Leaves alternate, petioled, oblong, ovate, widely and unequally serrated, acuminate, rough, three nerved, about four and a half inches long. Petiole one and a half inch, channelled. Peduncles axillary, solitary, short, hairy. Aments, cylindrical, short, dense, florets all female. Grows to a small tree in the jungles about *Dosah*.

Morus 2.—Leaves alternate, petioled, ovate, pointed, a little hearted at the base, from three to five lobed, unequally serrated, teeth obtuse, scabrous, about two and a half inches, and petiole three quarters of an inch. Peduncles fascicled axillary, aments diffuse, florets peduncled, all male. Grows to a small tree in the forests near *Coadwara*.

Morus 3.—Leaves alternate, petioled, ovate, somewhat hearted, acuminate, widely and unequally serrated, downy on both sides, and rough to the touch, six inches long; petiole one inch, channelled.

nelled. Peduncles axillary, solitary, short: aments cylindrical, dense, short, both male and female. The fruit when ripe about the size of the first joint of the middle finger, of a deep red, approaching to black; insipidly sweet, and mucilaginous. Grows to a tall tree with spreading head, found near the village of *Nataana*.

MONOECIA POLYANDRIA.

Quercus.—Leaves alternate, petioled, ovate-lance, serrated, teeth distant and rigid, smooth and shining above, hoary, with a dense down beneath, one nerved, from which are fourteen or fifteen pairs of parallel veins. The full grown acorns now on the trees, consequently flower in the coldest time of the year, and we may conclude from its situation here, it would bear the climate of *Britain*. The thickest forests are in the neighbourhood of *Adwaanae*; the trees rather low, but have the appearance of age, though none exceeded in circumference twelve feet, and fifty in height. The wood is of a reddish brown, very hard, and for this property refused by the natives for any purpose but firewood.

Juglans.—Three or four trees in the neighbourhood of *Nataana*, the fruit yet small, covered with a dense hair. Leaves pinnated with an odd one: leaflets sessile, lance-oblong, entire, smooth, the lower pair least, each pair increasing in size upwards. Growing on the sides of the mountains in a very stony soil.

Carpinus doubtful.—A low ill formed tree on the sides of the mountains, between *Dosa* and *Belkate*. Leaves without order about the ends of the branches, pinnated: leaflets about four pair, broad ovate, very obtuse, entire, beneath downy: common petiole columnar, downy, at its origin gibbous: proper, very short, cylindrical, downy. Flowers on long amentaceous spikes, crowded, but not imbricated, those bearing the female flower longest. Calyx of the male flowers is formed of six spreading

spreading unequal leaves, the middle one many times longer than the rest, one nerved, veiny. Corol none. Filaments from seven to eleven, scarcely evident, inserted within the leaves of the calyx. Anthers oblong, four cornered, thick, hairy, erect.—Female, Calyx one leaved, three parted, resembling a ternate leaf, with sessile leaflets, the divisions unequal, the middle one much the longest, oblong, rounded above, one nerved, veined. The only appearance of corol, are four oblong scales, seated on the germ, round the foot of the style, spreading, equal. Germ globular, a little pointed above, hairy. Style short, thick, cylindrical: stigmas two, about the length of the style, thick, slightly compressed, hairy. Pericarp, capsule, globular, two-celled, hairy. This has not been seen in its perfect state.

MONOECIA MONADELPHIA.

Pinus tæda.—Between *Ghinouly* and *Sirinagur*, several mountains are seen covered with this species of fir, the tallest appeared to be from sixty to seventy feet in length; one, which had fallen, measured sixty-five feet, and in circumference seven feet and a half. The natives prefer it to most other wood, for building, and many other uses, for the convenience with which they work on it, with their bad tools. It is also used for the purpose the trivial name implies, and is the only light they employ in their copper and lead mines. The means of transporting this useful timber from the situations it is found in, to the plains of *Hindustan*, appear too difficult and expensive, to offer any encouragement for such an attempt.

DIOECIA DIANDRIA.

Salix.—Leaves alternate, petioled, lanced, acuminate, unequally serrated, smooth, white beneath. Stipules lateral, semicordate, large, serrated, paired. It flowers in *November*, and in a considerable num-

ber of willows, all produced from the same source, none but male plants have been found, and the flowers hexandrous. They grow in plenty on the banks of the *Ganges* above and below *Hurdwar*, acquire the height of forty feet, in circumference seldom exceeding thirty inches. The wood is white, and very fragile.

DIOECIA PENTANDRIA.

Xanthoxylon.—A small thorny bushy tree, growing on the sides of the mountains, about *Nataana*, and other places. Leaves unequally pinnated; leaflets sessile, from three to six pairs, the lower pair smallest, increasing upwards, the terminal one being the largest, oblong-lance, obscurely and distantly serrated, dotted, smooth, largest about three inches long and one broad, between each pair of leaflets, a solitary straight rigid prickle. Petiole winged, along the middle prominent. Flowers inconspicuous; on short, axillary, compound, racemes (both on male and female plants). The short bunches of fruit ripen in *May*, the capsule about the size and shape of a small pepper-corn, these and every part of the plant, possess an aromatic and durable pungency. The natives scour their teeth with the young branches; and chew the capsules as a remedy for the tooth-ach. They believe that the capsule, with the seeds bruised, being thrown into water, renders it fit for drinking, by correcting any noxious quality which it may have. The branches cut into walking sticks, with their thorns rounded off, have a formidable appearance, and may properly be called *Herculean* clubs. It differs much from the figure in *CATESBY'S Carolina*.

Camabis Sativa.—This plant is cultivated in several parts of the mountains, for two purposes: one for the manufacture of a coarse thick cloth, which the poorer people wear, and the other in making an intoxicating drug. Much used, mixed with tobacco, in smoking, by the people of many parts of
of

of *Hindustan*, and is an article of traffic, between the inhabitants of this range of mountains to the eastward, and the natives of the low countries.

DIOECIA DODECANDRIA.

In a shaded valley near *Ghinouly*, a tall, slender, straggling tree, now in flower, the fructification too complicated for abbreviated description, or comparison with other genera, therefore the full characters are here given. Branches alternate, straggling, few. Leaves alternate, towards the extremities of the branches, petioled, ovate, entire, smooth above, slightly downy beneath, about nine inches in length. Petioles very short, columnar. The flowers are axillary, produced in a kind of single umbell, three or more from the same axill. Common peduncles cylindrical, about half an inch in length, downy; *partial*, similar, a little shorter; *proper*, still shorter, about two lines in length.

Characters of the male flowers. Calyx universal involucre, five-parted (perhaps five-leaved): divisions rounded, concave, expanding; *partial*, of similar form, carrying six florets in its base; *proper* perianth six-parted, divisions lance-ovate, hairy, expanding, sometimes reflected. Corol none. Stamens, filaments mostly thirteen, filiform, unequal in length, hairy, inserted into the base of the calyx, the seven shortest or interior series, furnished towards the foot of each, with a pair of compressed kidney shaped glands, inserted singly by a minute thread into the sides of the filament; the six exterior or longest, simple. Anthers oblong, four-celled, two of which are lateral, and two near the apex in front, each furnished with a lid, which on the exclusion of the pollen are forced up and shew the cells distinct.

Female—Calyx, universal and partial involucre as in the male, *Proper* perianth, five or six cleft, less hairy,

hairy, more coloured than in the male, the lacinia of the border, small, ovate, thin, withering. Corolla none, unless the coloured perianth is so called. Nectaries, six pair of glands resembling those of the male flower, affixed in the same manner, to six short, hairy filaments, with the addition of a linear hairy scale, or filament at the back of each, but distinct, all inserted into the base of the calyx. Pistil, germ above, roundish, ovate. Style cylindrical, obscurely furrowed down the middle; stigma two-parted, spreading. Pericarp, a berry, at present about the size of an orange seed, ovate, one-celled, one-seeded.

N. B. Sometimes the glands in the male flowers are one less, the same number of filaments, however, remain (13). The partial involucre is sometimes found with five florets only in its base, the number of its divisions in that case was one less, viz. four. The flowers of the male plant are larger and more numerous. The natives distinguished the male and female trees by different names, the former they called *Kutmoreca*, and the latter *Pup-reea*. It is found also in the forests near *Coadwara*, below the *ghat*.

POLYGAMIA MONOECIA.

Terminalia Alata-glabra.—Grows to a very lofty tree in the vallies of these mountains. Stem straight, and clear from branches to a great height. The characters given to the genus *Chuncoa*, in GMELIN'S edition of the *Systema Naturæ*, agree well with this plant.

Mimosa Catechu 1.—In great abundance in the forests of these mountains, and islands of the *Ganges* near *Hurdwar*, now destitute of foliage, a shabby thorny tree, the dry legumes hanging in great abundance; flowers during the rainy season.

Mimosa 2.—A large tree bearing great resemblance to *Mimosa lebeck*, now in flower in the forest near *Coadwara*. Leaves twice pinnated, abruptly,
from

from ten to twelve paired; leaflets sessile, from thirty-two to thirty-four pair, halved longitudinally, oblong, about three-eighths of an inch long by one-eighth, downy. Petioles and peduncles downy, one globular gland on each common petiole, an inch below the leaves, and another similar, but smaller, between the terminating pair of leaflets. Stipules lateral, paired, ovate, acuminate, one nerved, veiny, downy, large. Those on the peduncles resemble them, and are perhaps bracts. The flowers resemble those of *M. lebeck*. It comes nearest to *M. arborea*.

POLYGAMIA TRIOECIA.

Ficus-laminosa.—An humble species, growing among detached rocks in a small water course, and other moist places along the valley of the *Koa-nullah*. The stem is procumbent, shrubby, diffuse. Leaves opposite, lanceolate, entire; fruit laminous. The natives collect the leaves to feed their cattle with, and call it *Chanherree*.

Ficus 2.—A slender bushy kind, in dry elevated situations, near *Dosa*. Leaves alternate, on short hairy petioles, ovate, pointed, entire, thickish, with prominent reticulated veins. Peduncles axillary, solitary, cylindrical, short, hairy; fruit globular, about the size of a marrow-fat pea, downy. Calyx beneath, three parted, downy; it bears some resemblance to *F. pumila*.

Ficus 3.—Growing in the same situation with the above, a stronger bush. Leaves alternate, few, distant, oblong; sometimes much rounded above, but acuminate entire, rough, three nerved, with distant veins running into each other along the margin of the leaf: petioles very short, hairy. Fruit axillary, solitary, sessile, rough, globular, about the size of a small gooseberry. Comes nearest to *F. Microcarpa*.

Ficus 4.—A large tree in the forests along the *Koa-nullah*, though on elevated situations. Leaves ovate, obtuse, entire, large, downy. Peduncles
variably

variably produced from the stem and branches, crowded, cylindrical, short, downy. Fruit globular, as large as a small pullet's egg, when ripe, eatable, of a yellowish green, mixed with red, not very desirable to the taste of an *European*, but by the natives esteemed a good fruit. Called by them *Timla*.

CRYPTOGAMIA FILICES.

Asplenium.—Growing on the bodies of trees covered with moss. Frond simple, lance-linear, narrow, attenuated at both ends, smooth, entire: the fructification in distinct distant, round, parcels along the margin, and over which, when mature, the sides of the frond are reflected, the whole contorting and resembling a worm.

Polypodium.—Growing in similar situations with the above. Frond simple, lance-linear, acuminate, entire, woolly. The fructification covering the whole of the disk, except at the two extremities; the opposite side smooth and pitted. Roots, fibrous, numerous, capillary.

Adiantum Serrulatum.—Frond composite, leaves longitudinally striated. Found on the sides of every hill.

Marattia alata and *laevis*.—These two beautiful ferns are mostly found together, in moist and shaded situations, particularly on the more elevated part of the mountains about *Adwaanee* and *Natana*.

Among many plants observed, whose place in the system, for want of particular parts of the fructification, could not be ascertained, the following may deserve noticing here.

Ká-iy-p, hul, country name, GLADWIN'S *Mat. Med.*

—This is a middle sized tree, indigenous to these mountains, the bark of which is much valued in *Hindustan* for its aromatic and medicinal properties, and sold in every bazar under this name. The

fruit is a drupe, about the size of a small nutmeg, of a round oval, the nut bony, furrowed, one celled, one seeded, covered with a thin pulp, with a carbuncled surface, red when ripe, and very agreeable to the taste, highly esteemed by the natives. The branches are opposite, cylindrical, much marked with the vestiges of fallen leaves. Leaves irregularly opposite, rather crowded about the extremities of the branches, petioled, ovate, pointed, sometimes elliptical, entire, smooth: petioles short, channelled. Flowers, according to information from the natives, in the month of *March*. It would probably bear the climate of *Britain*.

No name.—In the neighbourhood of *Hurdwar*, a large spreading tree, without foliage, or flowers, the full pericarps hanging in many clusters, consisting of five inflated large kidney-shape capsules, united at one end to the apex of a short woody peduncle, pointed at the other, the points inclined inwards, each capsule in size, &c. resembling the follicle of *Asclepias-gigantea*, downy, one-celled, with a dorsal suture the whole length. Seeds from six to eight, ovate, about the size of a citron seed, black, covered with a white mealy substance, attached by one end to the edges of the suture. Some appearances warrant the conclusion it is a species of *Sterculia*. From the body of the tree exudes a white pellucid gum, discovering similar properties to the gum taken from *Sterculia-platanifolia*, and which so much resembles gum *traga-canth*, that it has been collected and sold, on the supposition of being such. Whether it will stand the test and be received as such in *Europe*, time will show. The plant producing that genuine gum, is not found on this side of *India*, to the best of my information.