CHAPTER XIX.

JOURNEY FROM HERIURU TO SERINGAPATAM, THROUGH THE WESTERN AND MIDDLE PARTS OF THE MYSORE DOMINIONS.

CHAPTER XIX.

May 2. Appearance of the country.

MAY 2d, 1801.—In the morning I went four cosses to *Ellady-caray*, which is situated among the low hills running S. E. from *Chatrakal*. I saw no houses by the way; but some must have been near my route, as in different places I observed a few fields that were cultivated. I passed through several ruined villages. The appearance of the country is desolate, and it is said never to have been much better, in the memory of man. The soil is entirely poor stony land; and the naked rocks, in a state of decay, come frequently to the surface. The grass in many places is long, but at this season it is quite withered; and the only things green, that are visible, are a few wild date palms *(Elate sylvestris)*, most of which are young. In moist places they grow spontaneously, and produce juice, which is often boiled into *Jagory*. The hills are of no considerable height, and among them there is much plain ground. By the natives this is considered as of very little use; but to me, much of it appears to be very capable of being rendered productive, whenever labourers and stock can be found.

Strata.

Between *Heriuru* and *Ellady-caray*, the *strata* are all nearly vertical, and of a slaty structure; but near the surface they are in such a state of decay, that it would be difficult to determine the species. Some appeared to be the same with the quartz impregnated with hornblende, that is found in the western *Ghats*. The layers or plates are in general very thin. There are no veins of quartz; but

CHAPTER XIX.

May 2.

many of the *strata*, or rather thin plates, of which united the *strata* are composed, are fat quartz. These strata or beds of quartz are from a quarter of an inch to two feet in thickness, and are often stained of a livid colour, which I have no where else observed.

Slate.

The talcose argillite of *Heriuru* is here very common, and passes at times entirely into pure argillite, like the slate used for the roofs of houses. The transitions from the one stone to the other are so gradual, that it would be difficult to say where the one ends, and the other begins. The slate here is grey, blue, and purple. All that I saw, being near the surface, was in a state of decay, and therefore useless; but that is the case on the surface of the best slate quarries in Scotland.

Iron.

Iron was formerly smelted at *Ellady-caray* from black sand, which was brought from a hill about two miles to the westward. Much of the *vitreous scoriæ* remains where the furnaces stood; but the work has been abandoned these sixty years: the want of fewel is indeed a sufficient reason.

Ellady-caray is a small fort with about thirty houses. It has a plantation, containing a few coco-nut palms; and a garden, containing *betel-leaf* and plantain trees, the verdure of which is very refreshing to the eye of a person coming from *Heriuru*. Near it there is a pond of dirty water full of reeds; but no tank, as its name would seem to imply. The cultivation consists of *Sujjay*, *(Holcus spicatus)*, *Harica*, *(Paspalum frumentaceum Roxb:)* *Navonay*, *(Panicum italicum)*, and *Huruli (Dolichos biflorus)*.

Weather.

This day has been cloudy and cool, with a threatening of rain. The natives are persuaded, that it is the commencement of the two months of showery weather which precede the rainy season.

May 3.

May 3d.—I went three short cosses to *Chica-bayli-caray;* that is, the little hedge tank. The country is very hilly, as we crossed the highest part of the ridge coming from *Chatrakal*. The soil in general is very poor, and incapable of being rendered arable. I passed a ruined village surrounded by some good land, and a

small fort with eight or ten houses. On the hills, there are a good many stunted trees.

May 3.

Chica-bayli-caray is a small fort containing about forty houses. The fields around, although very stony, are arable; and between the stones the soil is good. Near it is a torrent, which comes from the hills, and runs toward the *Vedawáti*. It is dry in the hot season, but during the rains fills a large reservoir. On its bank is a fine coco-nut garden, where the trees grow to a large size, are well loaded with fruit, and are allowed no water after having been transplanted, and having fairly taken root. The ground of the garden is ploughed every year, and produces *Horse-gram*, *Harica*, and other dry grains.

Iron smelted.

At *Chica-bayli-caray* is a furnace for smelting iron ore, brought from a mine called *Cudera Canavay*, and which is supplied with charcoal from the hills to the westward. The ore is brought upon buffaloes and asses. It is in small slaty fragments, that are broken to pieces with a stone, and thus separated from much sand and earth. These small pieces, when fit for the furnace, are about the size of a hazel-nut. The operation ought to be performed at the mine, to lessen the expense of carriage; but the danger from tigers prevents the people from staying there longer than is absolutely necessary. The number of these ferocious animals having increased of late, has forced the people to relinquish a mine named *Buca Sagurada Canavay*, which is distant from the other one coss toward the N.W. Even *Cudera Canavay* has now become very dangerous, and in the course of the last year three people have been destroyed.

The manner of smelting and forging the iron is exactly similar to that used at *Doray-guda*, which I have described in the seventh chapter of this Journal, Vol. II. p. 35, 38. At the two furnaces here are employed twenty-two men: nine to make charcoal, one to dig the ore, one to bring it from the hill (he is supplied by the proprietor with two buffaloes), one iron-smith at the forging

CHAPTER XIX.

May 3.

furnace, six bellows-men, and four hammer-men. They can smelt twice a day; but the sickness of any one of the party stops the whole operation, and they meet also with frequent interruptions from holidays, and from heavy rain. On such occasions, some of the workmen remain entirely idle, and others take day labour from the farmers. Each smelting requires five baskets of prepared ore, one basket weighing 1172 *Dudus*, or rather more than 29½ lb. The smelting also requires ten baskets of charcoal; each weighing 514 *Dudus*, or 13$\frac{8\,1}{1\,0\,0}$ lb. The weight of the charcoal is therefore nearly equal to that of the ore; but the imperfection of the furnace renders the operation very incomplete. The metal is never liquefied by the greatest heat which the natives can excite; the particles are only so softened as to adhere together, while the earthy matters are half vitrified. When the smelting succeeds properly, the mass of iron is forged into twenty-one plough-shares; when it succeeds ill, it yields only fifteen. Those pieces of iron weigh on an average 75 *Dudus*; so that the greatest produce of the ore is less than 27 *per cent.* of malleable iron; while the workmen sometimes are able to extract little more than 19 *per cent.*; but this is probably more owing to their want of skill, than to the poverty of the ore. The plough-share is worth ¼ *Fanam;* so that the iron sells for rather more than 7*s.* 3¾*d.* a hundred weight. The workmen are paid by a division of the iron. Every 42 plough-shares are thus distributed;

To the proprietor	11
To the 9 charcoal makers	9
To the iron-smith	3½
To the 4 hammer-men	7
To the 6 bellows-men	8
To the miner	1
To the buffalo driver	2½
	42

By this it would appear, that the expense of the fire amounts to $\frac{5}{44}$ parts of the whole value of the iron. The utmost that a common labourer can make at this work is $1\frac{1}{2}$ penny a day; but should the operation succeed ill, he may get only $1\frac{1}{100}$ penny. This being very small wages, the workmen have probably concealed some part of their profit. The expenses of the proprietors are as follow; May 3.

For bellows - - -	*Fanams*	100
For sacrifices - - - - -		30
For tax to government - - - -		375
		505

For this, when the operations succeed, he is repaid by 45 days-working, and all the remainder of what he receives is clear profit; for the workmen build the huts and furnaces, which are exceedingly rude; and the iron-smith provides hammers, anvils, forceps, and every implement except the bellows.

There is here a small manufacture of horse-shoes and hob-nails. It contains three anvils, at each of which are employed five men; one who manages the iron, and who furnishes all the tools; one who manages the fire; one to work the bellows; one to hammer the iron, as it is held by the foreman; and one who finishes the nail by giving it a head. The utmost that five men at one anvil can make in a day is 1200 nails. The four last mentioned workmen provide charcoal. Their wages are, Nail makers.

To the foreman 2 *Jumshiry Pagodas* for the month of 30 working days, or rather less than $6\frac{1}{4}$ pence a day.

To each of the other workmen 1 *Pagoda*, or $3\frac{1}{8}$ pence a day. One half of their time is probably employed in preparing charcoal. 36,000 hob-nails cost for manufacturing 6 *Pagodas*, or almost 2*l.* 6*s.* $9\frac{1}{4}$*d.*

4th *May* —I went one coss south, to see the mine at *Cudera Canaway*; and having examined it, I returned to *Chica-bayli-caray*. The road passes through a valley surrounded by low hills, and about half way there is a fortified village. At the bottom of the hill on which May 4. Appearance of the country.

CHAPTER XIX.

the mine is, there is a plain of a very good soil, which would be the most proper place of residence for the smelters.

May 4. A *Jatram* of *Hanumanta.*

On the road, I met with an image of *Hanumanta,* going on an annual visit that he makes to his master at a *temple* called *Ramésvara.* From the neighbouring villages he was attended by all the better sort of inhabitants, male and female, young and old; the *Sivabhactars* excepted, who abominate both this idol and that of his master *Vishnu.* The people composing the train of the god were very irregular and disorderly; but they had collected together a number of flags, and insignia of honour, with every thing that could be found in the country capable of making a noise. The men who carried the idol said, that the god would rest himself at a *Mandapum* near *Ramésvara,* and allow his followers to assemble, and form themselves into some order; after which he would visit the image of *Ráma;* and, having returned to the *Mandapam,* he would sit in state, while for his amusement the people played before this building. The *Bráhmans* would then sell them some victuals, which were consecrated by having been dressed in the temple, and offered to the god with the proper incantations (*Mantrams*). Having feasted on these, the image would return to his own temple, attended as on his outset. This is what is called a *Jatram;* and had the image been that of one of the great gods, it would have been carried in a *Rath,* or chariot; but for *Hanumanta* a litter is sufficient.

Mine at *Cudera Canavay.*

Cudera Canavay, or the horse-hill, is a hummock about a hundred and fifty feet in perpendicular height. The north end is steepest, the slope toward the south being gentle. The east and west sides also are pretty steep. The natives say, that *Doray-guda* is about ten cosses to the S.E. and that there is a continued ridge of low hills extending the whole way between the two mines; but none of them contain ore.

The surface of *Cudera Canavay* is smooth, and is not interrupted by rocks. The soil is a poor red earth. I saw only one lump of

hæmatites; and that, when compared with the fine masses lying on the surface of *Doray-guda,* is very poor, and ill-formed. The whole extent of the hill is not great, and the miners have contented themselves with digging the ore from the surface of the hill near its summit. No shaft nor pit having been made, I cannot form any estimate of the quantity of ore remaining. The mine appears to be much richer than that of *Doray*; for the quantity of barren stone intermixed with the ore is very small. This barren stone resembles the ore very much; and, no doubt, could the natives extract it, contains much iron. The specimen which I have brought away, has concentric layers somewhat like a log of wood. The superficial earth in most places is not above a foot thick. On digging into it, the miner comes to a mixture of ochres, earth, and ore, in a tabular form. This mixture sometimes extends in depth so far as has been wrought, which no where, that I saw, exceeded five or six feet. In other places the miner meets with large masses of ore, consisting of a number of plates united together like schistus. This by the miners is called black iron-stone. These masses have a tendency to divide into rhomboidal fragments. In other places, the ore is found in a number of flat pieces, divided by fissures into parallelograms, perhaps three inches long, two broad, and one thick. These fragments are placed in layers contiguous to one another; but they are separated by the slightest force, the fissures being filled up with reddish ochre. By the workmen this is called red-ore; and because it is taken out of the mine with the least trouble, it is most esteemed. All the kinds, when broken to small pieces, and rendered proper for the furnace, are quite the same. The manner of working is very simple. The miner forms a cut with a perpendicular surface, and throws all the rubbish down the declivity. He then continues cutting down from the hill, with his perpendicular surface, two or three feet in height. He works with a pick-ax, and cuts promiscuously through earth, stones, and ore. Having brought down a sufficient quantity, he rubs the fragments; and, having picked out the smaller pieces of ore,

CHAPTER XIX.

May

he throws down the hill all the earth, ochres, barren stone, and larger masses of ore; for the trouble of breaking any of these into lumps the size of the fist, is greater than that of cutting down more from the hill. I observed nothing like strata in the mine, and look upon the present shape assumed by the ore, as of very recent date. From the rubbish thrown down by former miners, which consists in a great measure of ferrugineous particles, these have, I imagine, united into their present form; and the layers may be often observed intermixed with the roots of vegetables. Indeed, the process is probably now regularly going on; and until the hill be entirely consumed, the mine may be continued to be wrought in the same manner as it is at present.

Strata near the mine.

On the N.E. side of the hill, from which I ascended, the strata are in general vertical, and run from S. easterly to N. westerly. They are of quartz blended with hornblende, forming a hard, very tough, and sonorous stone, intersected with fissures, but free from venigenous matters, and having a slaty structure, with plates from an inch to a foot in thickness. In other places, this stone is not vertical, but has only a dip toward the east. In this I frequently observed the quartz and hornblende disposed in alternate layers; that is to say, certain alternate thin portions of the quartz were less impregnated with the hornblende than those that intervened. From the disposition of these, the stone looked as if at one time it had been fluid, and had then undergone an undulating motion; for the different coloured portions were disposed somewhat like the colours on marbled paper, or like the fibres in a knot of timber. To give a proper idea of this would require a specimen ten feet in diameter; but even in the specimen which I brought away, it is observable, although that has suffered a considerable decay. I had no means of breaking a specimen from the centre of the rock.

Here I also observed a rock of a similar nature, but divided into rhomboidal fragments by wide fissures, some of which were empty, and others filled with veins of fat quartz, which must therefore be

of later origin. This resembled the rock described in the seventh chapter of my Journal, Vol. II. p. 43, at *Malaiswara Pagoda*, near *Madana Mada*, which is about eight cosses from hence toward the S.E. There, however, the veins of quartz formed a complete network, involving the fragments of the original stone, which contained little or no hornblende. May 4.

5th *May.*—I went to *Muteodu*, distant three cosses. On the way I passed through three little vallies, containing a good deal of rice-ground, with plantations of coco and *betel nut* palms. These seemed to be very ruinous. In the first valley I passed a large fortified village, named *Cagala Cutty*, which on each side had a fine tank. Where I crossed the second valley, there were also two fine tanks, that supplied the rice-grounds of thirty villages, among which the most distinguished was called *Lacky hully*. These villages having been laid waste, the valley has since become so infested by tigers, that the few remaining inhabitants are daily deserting it. The third valley is the smallest. May 5. Appearance of the country.

Muteodu is situated in a valley similar to the others, but much wider. Near it is a fine reservoir, which however at a moderate expense might be greatly improved. When the rainy season commences early, this tank supplies water for two crops of rice in the year, and never fails to afford a supply for one crop. The farmers do not commence cultivation until the *Tank* is full, as then they are secure from all accidents. The *Vedawáti* is distant one coss to the west. Its banks, according to the natives, afford many places where dams might be formed to great advantage. At a place called *Mari Canavay*, they say, that by building a mound between two hills 500 yards distant, an immense reservoir might be formed, which would convert a large proportion of the *Heriuru* district *(Taluc)* into rice-grounds. It would, however, inundate the present situation of many villages. At *Cangundy*, in the *Garuda giri* district, a dam might be constructed for 3000 *Pagodas*, that in three years would repay itself by the increase of revenue. Irrigation.

CHAPTER XIX.

May 5. History of the *Muteodu Polygars.*

In the reign of *Krishna Ráya*, a native of *Lacky hully*, named *Ghiriuppa Nayaka*, was in the service of the king at *Anagundi*, and was a person of extraordinary strength and courage. An elephant, having broken loose, had got into the court-house, and could not be secured, until *Ghiriuppa* boldly seized on him by the tusks, and, having fastened a rope to his trunk, led him to the stables. As a reward for his intrepidity, the king created *Ghiriuppa Polygar* of his native town *Lacky hully*, with villages in the neighbourhood to the annual value of 9000 *Pagodas*, or 3120*l.* 8*s.* 4*d.* His tribute was 300 *Pagodas* a year, and he was bound to support 700 foot soldiers. In case of war, he left 300 of these in the country for its defence, and for the maintenance of order; and he was bound to join the king's standard with 400 men, whom he commanded in person. While on this service, he received five *Pagodas* a day, or about 31*s.* 3*d.* for his own subsistence; and the same sum for the subsistence of his whole corps. There have been twelve *Polygars* of this family; and *Haluppa Nayaka*, the present representative, from whom I have this account, is an elderly man. He says, that the nephew of *Ghiriuppa* removed the seat of government to *Muteodu*. When the *Chatrakal Polygars* became powerful, those of *Muteodu*, who, although they wear the *Linga*, are of the same family, submitted to the authority of their kinsmen. Their tribute was increased to 500 *Pagodas* a year, and they supported the former military establishment. *Haluppa* married a daughter of the last *Chatrakal Rájá;* but although she is still living, he has no children. When he observed the power of *Hyder* increasing, he was induced to assist that artful chief in the first siege of *Chatrakal*. After that was raised, his father-in-law, justly enraged at his conduct, attacked his country. In the month *Ashádha* of the year *Velumbi*, he laid siege to *Muteodu*, and three days afterwards took it by assault. Having plundered the town, he carried his rebellious son-in-law to *Chatrakal*, where he was kept in close confinement, but without ill usage, until he was released by

CHAPTER XIX.

Hyder, who took that city in *Mágha* of the same year, or about the beginning of the year of our Lord 1778. *Haluppa*, although released from prison, was entirely neglected by *Hyder*, and never was restored to any part of his territory; a treatment that he richly merited. He retired at first to *Hagalawadi;* but twelve years ago he returned to *Muteodu*, where he occupies a hut, and lives in great poverty. His palace has in a great measure gone to ruin; but some portion of it has been lately repaired for a public office, and for the residence of the *Amildar*. May 5.

Muteodu.

The fort of *Muteodu* never was strong: but in *Haluppa's* government it contained about 2000 houses, which are now reduced to 120.

Glass manufactory.

The most remarkable thing about the place is a manufacture of the glass that is used for making the rings which are worn round the wrists of the native women, and are called *Ballay* in the language of *Karnata*, and *Bangri*, or *Bangadi*, in that of the Mussulmans. The glass is very coarse and opaque, and much mor eof it is made than is here wrought up into ornaments. Great quantities of it are bought by the *Bangri-makers* from the westward. It is of five colours; black, green, red, blue, and yellow: the first is in most demand.

All the materials for making the glass are found in the neighbourhood; but their value cannot be ascertained, as the glass-makers pay a rent for them, and collect them by means of their own workmen; so that they are never sold.

SouluMunnu, or *soda*.

In the hot season, the *Soulu Munnu*, or *soda* in the form of a white efflorescence, is found in several places near this, on the surface of sandy fields. Little of it now remains; for there have been several showers, which have washed away the greater part. For the exclusive privilege of collecting it, the glass-makers pay 48 *Ca. Pagodas* (14*l.* 19*s.* 8¼*d.*) They make it into cakes, in the same manner as the people of *Chena-pattana* do; a process that I have described in the third chapter of this Journal, Vol. I. p. 150, &c. The intention of making it into these cakes is probably to free it from earthy

CHAPTER XIX.

May 5.

matter; but for making glass, this is perhaps no advantage, as the earth with which it is mixed is chiefly a quartzose sand. These cakes contain at least one half of their bulk of cow-dung, and from that cause are in fact inflammable. They are prepared for making glass by being burned, and of course afford an exceedingly impure alkali. It might be procured pure by lixiviation, and filtrating it through barrows of earth, as is usually done in India with culinary salt. The only objection to this is the scarcity of fewel, although much of the evaporation might be performed by the sun.

Glass maker's furnace very bad.

The glass-maker's furnace here is rather better than that of *Chena-pattana*; but still it is extremely rude. The manufacturers say, that when the army of Lord Cornwallis left *Seringapatam*, they gathered with much pains a great number of broken bottles, which they found where he had encamped. These they thought a treasure; but, after having been at the expense of bringing the bottles to *Muteodu*, they found, that their furnace was not sufficiently strong to liquefy European glass. The bottles were then reduced to powder, and mixed with alkali; but these materials produced only an useless white mass. Our glass, therefore, is considered by them as useless as our cast iron; for neither of these substances are in a state upon which the fires of the natives have any effect.

Form of the furnace.

The furnaces are constructed in a high terrace, which is built against the inside of the town-wall, and are in form of a dome, or like an oven, eight feet in diameter, and about ten feet in height. The annexed section of one furnace (Plate XXXIII. Figure 81) will assist the reader to comprehend the description. The oven is not arched, but contracted above into a circular opening, about eighteen inches in diameter, by making the upper rows of stones project beyond those below them. At the bottom of the furnace, in the side opposite to the town-wall, is a small opening, through which the fewel is supplied. The crucibles are oblong, as in the figure, and would contain about $5\frac{1}{2}$ Winchester gallons. Having been filled with the materials, they are lowered down into the furnace by the

Fig 81.

Vertical section of a glass furnace at Muteesa.

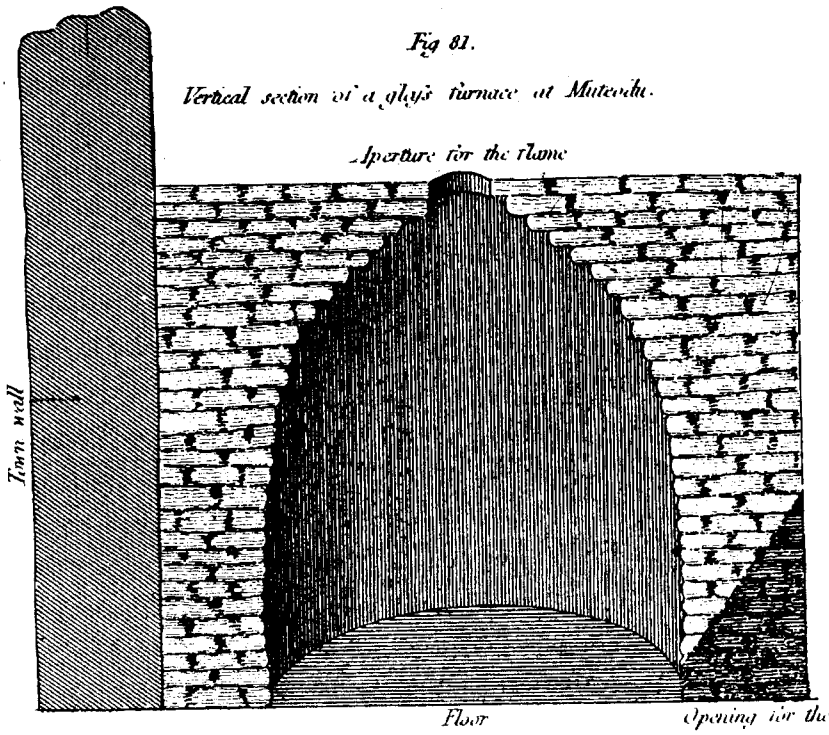
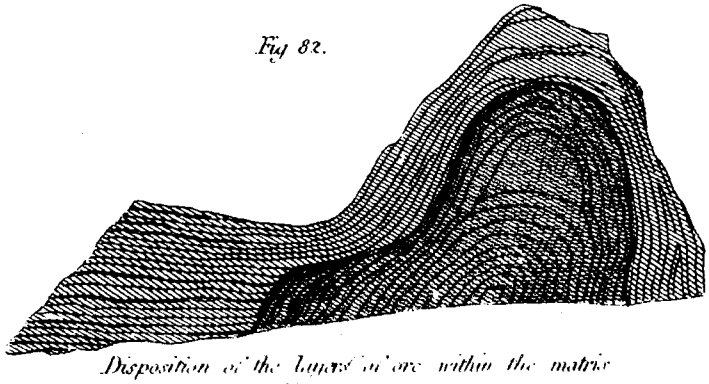
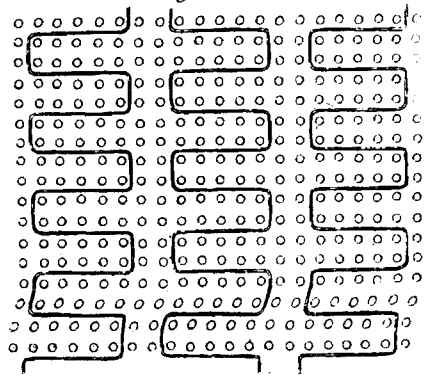


Fig 82.



Disposition of the layers of ore within the matrix

Fig 85.



Plan of the channels in a sugar field.

May 5.

aperture in the top, by which also the workmen descend. They first place a row of the crucibles all round the furnace, with their bottoms to the wall, and their mouths sloping inwards. In this position they are secured by a bed of clay, which covers the crucibles entirely, leaving their open mouths only exposed. Above this row another is placed in a similar manner, and then a third and a fourth. The furnaces vary in size, from such as can contain fifty crucibles thus disposed, to such as can contain twice that number. The fewel consists of small sticks, which having been gathered a year are quite dry. A quantity having been put in the bottom of the furnace, the workmen ascend, and some burning coals are thrown upon the fewel. By the opening below, fresh fewel is added night and day, until the time allowed for vitrifying the materials has expired. The fire is then allowed to burn out, and the furnace to cool. Afterwards the workmen descend, and take out the crucibles, which must be broken to get at their contents.

Frit, or *Bilizu.*

The first operation is to make a frit, called *Bilizu.* The materials for this are, powdered white fat quartz 1 part; and prepared soda, or *Soulu,* 6 parts: the crucibles are filled with these mixed; and the fire is kept up five days. Every crucible gives a *Maund* of 40 *Cucha Seers,* or 24¼lb. of *Bilizu.*

Black glass.

To make the black glass: for every 40 crucibles, take prepared soda 1 *Candy,* or 18$\frac{0\,8}{100}$ bushels; and powdered frit ¼ *Candy,* or 4$\frac{1\,8}{100}$ bushels: mix them, and fill the crucibles. The crucibles having been put into the furnace, a fire is kept up for eight days and nights; so that the flame rises three cubits above the aperture at the top of the dome. Each crucible gives a *Maund,* or 24¼ pounds of glass, of a black, or rather of an intensely dark grass-green colour. It sells for 4 *Fanams* the *Maund,* or 11*s.* 6¼*d.* a cwt. It is evident from this, that only $\frac{2}{31}$ of the materials employed are silicious earth; the remainder is the impure salt called prepared *Soulu.* During the operation, part of this is dissipated; and part of it forms on the surface of the glass a pure white crust, an inch in thickness. This is

CHAPTER XIX.

used by the inhabitants for culinary salt, but in fact it is chiefly soda.

May 5. Green glass.

To make green glass: for 40 crucibles, take 1 *Candaca*, or 18 $\frac{01}{100}$ bushels of prepared *Soulu*; 5 *Colagas*, or 4 $\frac{12}{100}$ bushels of powdered frit; 1 *Maund*, or 24$\frac{1}{2}$lb. of the powder of an ore called *Kemudu*; 4 *Seers*, or 2 $\frac{3}{10}$lb. of an ore called *Cari-cullu*; and 24 *Seers*, or 13 $\frac{3}{10}$lb. of calcined copper reduced to powder. These materials having been mixed and put into the crucibles, these are properly disposed in the furnace, and a fire is kept up for nine days and nine nights. For the first five days the fewel is added slowly, so that the flame just rises to the aperture; and afterwards it is not necessary to occasion quite so great a heat as for the frit, or black glass. The copper is calcined by burning it, on the fire-place in the bottom of the furnace, during the whole nine days that are required to make this glass. Each crucible produces 1 *Maund* and 12 *Seers* of green glass, which sells at 6 *Fanams* the *Maund*, or 17*s*. 3$\frac{1}{4}$*d*. a cwt. The saline crust, formed on the surface of this glass, is considered by the natives as unfit for eating.

Red glass.

To make the red glass: for every 40 crucibles, take the same quantity of prepared *Soulu*, and frit, together with 5 *Maunds*, or 121$\frac{1}{4}$lb. of powdered *Kemudu*. For fifteen days and nights these must be fused with a moderate fire. Each crucible gives 1$\frac{1}{4}$ *Maund* of glass, which sells for 6 *Fanams* a *Maund*, or 17*s*. 3$\frac{1}{4}$*d*. a hundred weight.

Blue glass.

To make the blue glass: for every 40 crucibles, take the same quantity of prepared soda, and powdered frit, as for the others. To these add 24 *Seers*, or 13 $\frac{3}{10}$lb. of calcined copper, and an equal quantity of powdered *Cari-cullu*. For fifteen days and nights these materials also must be burned, with a moderate fire. Formerly, the workmen used to put in only twelve *Seers* of calcined copper, with an equal quantity of a blue substance called *Runga*. The merchant, however, who supplied them with this article, having died, they have not for some time past procured any, and have been obliged

CHAPTER XIX.

to make up the deficiency by a double proportion of copper. What the *Runga* is, I cannot say. The natives know that it is not blue vitriol: it may perhaps be smalts.

May 5. Yellow glass.

To make *Hulledi*, or yellow glass: for every 40 crucibles, take the usual quantity of prepared soda; add to it 5 *Colagas*, or 4 $\frac{132}{160}$ bushels of native soda, from which all the small stones have been picked, but which of course contains a good deal of sand. For fifteen days these are burned with a slow fire. Each crucible gives a *Maund* of a wax-coloured glass, which sells for four *Fanams* a *Maund*, or 11*s*. 6$\frac{1}{4}$*d*. a cwt. When this glass is wrought up into rings (*Bangris*), it receives a bright yellow colour by enamelling it with the melted *calces* of the following metals: 5 parts of lead, and one of tin are calcined together. Then one part of *Sotu*, or zinc, is calcined in a separate crucible. The two *calces* are then mixed, and farther calcined, until they begin to adhere together. They are then powdered in a mortar. When the *(Bangri)* ring-maker is at work, he melts some of this powder; and, while the ring is hot, with an iron rod he applies a little of the powder to the surface of the glass.

May 6th. Weather.

6th *May*.—In the evening of the 5th there was much thunder, with heavy squalls of wind from every quarter of the compass, and some severe showers of rain. The thunder continued all night, and the morning looked so threatening that I did not set out till after breakfast. The weather, however, has now become so cool, that I did not feel the least inconvenience from being all day in the open air.

I had intended going to *Hosso-durga*, and had sent my spare tents to that place; but, finding it necessary to look after the mines, which produce the ores called *Kemodu* and *Cari-cullu*, I was obliged to alter my plan. Neither could I get any accurate information concerning the situation of these mines; some of those even, who were employed in bringing the ore, called them two

CHAPTER XIX.

cosses distant, while others stated their distance at three times as much.

May 6. Mine of *Cari-cullu.*

I went first in search of the *Cari-cullu*, and proceeded on the way by which I came yesterday, till I reached the small valley nearest *Muteodu*, distant from thence about ¼ of a coss, or two miles. Here I passed a small village named *Sida Gondana hully*, and came to a low hill, which is called *Malaya Maluppa*, after a temple dedicated to *Siva*. This hill forms the eastern boundary of the valley, and is of no considerable height. The mine of *Cari-cullu* is on its ascent, and is readily discernible from a number of bluish-black stones, that lie on the surface of the ground. No excavation has been made. The *Cari-cullu* is found, in detached masses, on the surface, mixed with the stones. These stones are often so much tinged by the metal, as hardly to be distinguishable from it; but are known by being broken, when their stony nature appears evident. Some of them, when broken, appear internally to have undergone little change, and are evidently fat white quartz; the appearance of the internal parts of others has been so much altered, that had I not observed them in all intermediate gradations, I should never have supposed them to have been of a quartzy nature. The masses of stone are much more numerous than those of the *Cari-cullu*, owing probably to the quantity of the last that has been removed from the surface. Deeper in the earth it is probably found in a great proportion, but there has been no occasion to make any experiment by digging. The extent of ground which the mine occupies may be about 200 yards square. The *Cari-cullu* literally signifies the black stone. It is found in masses about the size of the fist, and has a very strong resemblance to the black ore of *Manganese*. By the usual process, however, for discovering the *calx* of that metal, I have not been able to obtain any; nor indeed any thing else, except a brown *calx* of iron. The ore however, when heated, readily gives out a considerable quantity of *oxygene*.

CHAPTER XIX.

Immediately N.W. from the mine, and on the declivity of the same hill, is a singular *stratum* of rock. It has every appearance of a rock that has formed the channel of a river, being water-worn, and excavated into round pits or pots, exactly like the rocks on which a rapid stream has long acted. This is an appearance, concerning which any one, who has been accustomed to a mountainous, well-watered country, can hardly be mistaken; yet, as the rock is situated on the declivity of a hill, and has a valley immediately below it, and parallel to its course, it is impossible, without a total change having taken place in the face of the country, that it could have formed the bottom of a river. At present there is no stream in the valley. This rock runs nearly north and south, and is quite vertical. It is a *Sienite;* sometimes of a homogeneous grey colour, and at other times composed of alternate grey and white layers, which last consist of the quartz and felspar entirely. These layers are of very various thicknesses, and are sometimes straight, and sometimes disposed in swirls, like a knot of timber. Although it has the appearance of having suffered much decay, this stone possesses a very high degree of toughness.

May 6. *Strata* near the mine.

Having examined this mine, I returned almost to *Muteodu*, and then proceeded south to a small village, named *Cadu-caray*, three cosses distant. The country is not hilly, and in most places is fit for the plough; but almost the whole is waste. I saw only one village, named *Chica Taycu-lawati;* but I passed several small collections of huts belonging to *Goalaru*, or keepers of cattle. Toward the east was a range of hills, running from *Chatrakal* to *Chica Nayakana hully*. Toward the west is a level country, interspersed with a few low detached hills. On the most remarkable of these is placed *Hosso-durga*, or the new castle.

Appearance of the country.

The soil is in general poor, and the rocky *strata* frequently come to view. Among these are very extensive *strata* of quartz, and of quartz intermixed with felspar of a white colour. Intermixed with

Strata.

CHAPTER XIX.

these are *strata* of white quartz, and black mica, disposed in alternate layers, firmly united, and forming a very hard stone.

May 6. *Budihalu Taluc.*

Cadu-caray is in *Budihalu* district, and is under the management of the *Amildar* of *Muteodu*, although it does not form a part of the *Chatrakal* principality. The *Amildar*, therefore, accounts to the *Subadar* of *Chatrakal* for *Muteodu*, and to the *Dewan* of *Mysore* for *Budihalu*. In the time of the kings of *Anagundi* the districts of *Budihalu* formed the territory of a *Polygar*, named *Shirmia Nayaka*, who was of the *Goala* cast. It was then valued at 12,000 *C. Pagodas*, or 3744*l.* 9*s.* 7*d.* a year; but of this he paid one half as tribute. After the Mussulmans had taken *Sira* from the *Ratna-giri Polygars*, and had made it the residence of a *Nabob*, or *Subadar*, they seized on *Budihalu*, and soon afterwards it was given in *Jaghire* to *Ismael Mummud Khan*; he transmitted it to his son of the same name; from whom it was taken by *Hyder*, after he had conquered *Sira*. *Ismael Mummud Khan* raised the revenue to 20,000 *Pagodas* a year (6240*l.* 15*s.* 11¼). Owing to a want of inhabitants, *Purnea* has reduced the revenue to 15,000 *Pagodas*; but were there plenty of cultivators, the former revenue, it is said, would not bear hard on them. North from *Cadu-caray* is a small river, that never entirely dries, and is named *Mavana Canavay holay*. It comes from the hills to the westward; and after filling two *tanks*, runs into the *Vedâwati* at *Niruvugullu*.

May 7. Mines on *Doda Rashy Guda*. Smelting of the ore.

7th *May*—I went in the morning to examine the mine of *Kemodu*, and another of iron, concerning which I had received intelligence on the preceding evening. The ore is smelted here in the same manner as at *Chica-bayli-caray*. When the process fails, a brittle porous mass is obtained, which has a greater resemblance to our cast iron than any thing that I have seen produced in India. This mass is fused in a furnace of lower power, and gives an iron softer than the common kind; and from this soft iron are usually formed the hoes, and other digging instruments of the natives.

CHAPTER XIX.

Doda Rashy Guda, or great heap hill, which contains the mines, is a peak about three hundred feet in height, and a mile in length, that forms part of a ridge running nearly north and south, and lying east from *Cadu-caray*. Between the mine and this village is another ridge, on the northern extremity of which is a temple dedicated to *Ranga*, and named *Mavana Canavay*, from which the rivulet so called has its source.

May 7. Appearance of the hill.

As I ascended this nearest ridge, the first rock which I met was an earthy quartz, or hornstone, divided by fissures in all directions, and having some of these fissures filled with veins of white quartz. This rock is not vertical, but dips much toward the east. Further on, the common rock consists of alternate parallel layers, firmly united, of white arid quartz, and of brown iron shot quartz, or hornstone. These layers are sometimes plain, and at others disposed in swirls; and as the stone in decay, by the attrition of its longitudinal angles, has a great tendency to assume a cylindrical form, and always breaks in masses truncated at right angles to the layers, it is often found in pieces which have a strong resemblance to petrified wood. The stone does not break regularly in the direction of the layers, which are disposed in the same line with the strata. These are vertical, and run nearly north and south. I am by no means sure of the nature of the brown part of this stone. It may very possibly be hornblende overcharged with iron; and the *Sienite* found yesterday nearly in the direction of its strata, strongly confirms this opinion.

Strata.

Between the two ridges I came to the channel of a rivulet, named *Aladi-holay*, which at present is quite dry. Here I found the place whence the glass-makers procure the ore called *Kemodu*. For about three quarters of a mile the bed of the rivulet is filled with stones of a steel-grey colour. Many of these are the iron ore called *Kemodu*. It is in water-worn masses, from the size of a man's head downwards, and possesses the external characters of the grey ore of *Manganese*. When powdered, it is attracted by the magnet.

Kemodu.

CHAPTER XIX.

May 7. Intermixed with the *Kemodu* are other masses of a similar appearance, but which are useless. On breaking these, they are found to be in all intermediate stages of maturation, from the common rock before described, to almost perfect ore.

Source of the *Kemodu*. On ascending the eastern bank of the rivulet, beyond the mine of *Kemodu*, I came to a conical peak on the eastern ridge; and observed, that all the stones on its side were stained with the steel grey of that ore. I saw none perfect on it; but on breaking the stones I found them in all stages, from the rude rock, to a state approaching to maturity. Indeed, many grains of pure *Kemodu* were very discernible, imbedded thickly in the substance of these stones.

Common iron ore. Immediately south from this, is the peak called *Doda Rashy Guda*, whence the iron ore which supplies the forges is procured. This ore is quite the same with the black kind at *Cudera Canivay*, but it is disposed in a different manner. It is imbedded in large irregular cavities of the barren stone, or matrix. This consists of plates that are separable without much difficulty, and which, I have no doubt, are the brown layers of the common stone of the hill separated by the white ones having been corroded by iron. It is, no doubt, a primeval rock; and its strata may be traced running in the direction of the meridian, and in general vertically. The ore is similarly composed of plates; and fibres of the roots of plants are found to have penetrated into the interstices; but this, I am inclined to think, has happened after the surface has been exposed by the miners. I also suppose, that the ore has once been the common stone of the hill, and has afterwards been more and more impregnated with iron by some process unknown to us; in the same manner as, I suppose, has taken place in the ore called *Kemodu*. The various gradations from the perfect stone to the perfect ore is the circumstance that induces me to form this opinion. A portion of the rock, having been cut down with a vertical smooth face about three feet deep, presented an appearance similar to that in

Plate XXXIII. Fig. 82. The central parts are of the ore, and contain the roots of plants between their plates. The upper layers are of the barren matrix. I brought away, as a specimen, the upper extremity of the ore, with part of the matrix adhering. Owing to the nature of the mine, the manner of working it is somewhat different from that used at *Cudera Canivay*, and the workmen are forced to dig the ore from under the caverns of the matrix. I no where saw that they had ventured in farther than ten or twelve feet; so that I cannot say, whether or not the internal parts of the hill contain any veins, or rather beds, of ore. Openings have been made in various places for about a quarter of a mile in length, which seems to be the extent of the mine.

May 7.

Having examined *Doda Rashy*, I descended by the banks of the *Aladi-holay*, till it came opposite to the temple of *Ranga*, where it joins the *Mavana Canavay*. Here both streams pass between the hill on which the temple stands, and one placed at no great distance to the north. The opening has been filled up by a mound, which, so long as it remained entire, formed a fine reservoir that watered a hundred *Candacas* of rice-land. The mound has long ago been broken; and it is said, that to repair it would cost three thousand *Pagodas*, or 936*l.* 2*s.* 4½*d.* As *Paddy*, when very cheap, sells at one *Pagoda* a *Candaca*, and as the government receives one half of the produce, which is here on an average forty seeds, even allowing that there should be only one crop in the year, the expense of rebuilding the tank would be repaid by less than two years rent.

Fine reservoir in ruins.

All over the *Chatrakal* principality, of which *Hosso-durga* forms a part, the rice crop is of little importance; the rent is no higher than that for dry grains, and little labour has been bestowed on irrigation. Here the rent is high, being one half, or even more, of the produce; the fields are very productive, and many excellent *Tanks* have been constructed. Most of these were made during the government of the *Shirmia* family.

Effects of low and high rent.

CHAPTER XIX.

From this ruinous *Tank* I went about two cosses to a fortified village, containing about forty houses, and called *Doda Tayculawati.* It is situated in the open country of the *Budihalu* district. The country is at present extremely unhealthy, even to those born in it. Almost every family has some person ill with the fever; and no less than eight persons in the house of the *Amildar* of *Budihalu* are now labouring under that disorder. The natives say, that the fever will stop immediately after the commencement of the rainy season. This year has been uncommonly unhealthy, owing to its having been unusually hot.

May 7. Unhealthiness of the climate.

Wild date.

In every part of the *Budihalu* district the wild date *(Elate sylvestris)* is very common, but is of little use except for fuel. The present number of inhabitants cannot consume a hundredth part of the juice that could be extracted from it. This tree might be a source of considerable advantage, could a good spirit be extracted from its *Jagory,* of which I think there is little doubt; but from the wretched stills of the natives this can never be expected.

May 8. Appearance of the country.

8th *May.*—I went three cosses to *Belluguru,* and by the way passed two *Tanks* and villages. All the country near the road is level enough for the plough, and clear from trees; but, the army of *Purseram Bow* having passed this way, very little of it is cultivated. Some of the soil is rocky; a good deal is rich land; but by far the greater part is poor gravelly land; fit enough, however, for raising *Huruli (Dolichos biflorus), Shamay (Panicum miliare* E. M.) and other such crops.

Belluguru.

Belluguru is a small fortified village with 150 houses. It suffered less than usual from the *Marattahs,* as before the invasion of *Purseram* its houses amounted to only two hundred. It is a part of the *Garuda-giri* district, which has long formed a part of the dominions of the *Mysore* family. Near it is a very large reservoir.

Reservoir.

Owing to the mud deposited by the water, these *Tanks* fill gradually at the bottom; so that once in three or four years

this mud must either be removed, or an addition must be made to the height of the bank; otherwise the reservoir becomes useless. The mud being an excellent manure for the neighbouring dry lands, as much of it as possible should be taken away, and spread on them. In other respects, the raising of the bank is the most advantageous manner of repairing a *Tank*, as it requires the least outlay of money. It offers also another advantage. If the sluice, through which the water is let out to irrigate the fields, were always raised to a level with the mud in the bottom of the *Tank*, as that was deposited, the extent of ground, which the *Tank* could irrigate, would always increase. This, it is true, would be attended with a considerable expense, and is never practised; so, in order that the plug which shuts the sluice may be kept clear, there is often a necessity of sinking a well ten or twelve feet in depth. The *Tank* here receives a stream forced by a dam from a rivulet, that comes from *Garuda-giri*, and which afterwards falls into a *Tank* called *Belallu Samudra*, which is one coss and a half N.W. from *Belluguru*. May 8.

In this district, and in the neighbouring one of *Budihalu*, all the rice-ground is cultivated as sprouted-seed. The seed, the natives here say, is sown equally thick in the two districts; yet in *Budihalu* the land often produces sixty fold, and the ordinary crop is forty seeds; while in this district of *Garuda-giri*, the usual produce is twenty seeds. I measured a field, said to sow three *Colagas* of seed, or 2673 cubical inches. It contained 46,636 square feet. The acre, therefore, requires $1\frac{161}{1000}$ bushel for seed, and produces here, in an ordinary crop, almost $23\frac{1}{4}$ bushels of rough rice; while in *Budihalu* it produces twice, or even three times, as much. In the course of one year, there are frequently from the same field two crops of rice. The grain in the husk is worth one *Bahadery Pagoda* a *Candaca*, or $11\frac{66}{100}$ pence a bushel. The produce of one crop is, therefore, worth about a guinea an acre. Rice-ground.

9th *May*.—In the evening and night there was much loud May 9.

CHAPTER XIX.

May 9. Face of the country.

thunder, with heavy rain from the southward, but little wind. I went four cosses to *Garuda-giri*, or the hill of *Garuda*, the eagle on which *Vishnu* rides. It is often pronounced in the oblique case *Garudana-giri*, which, by the Mussulmans, is usually corrupted to *Gurruna-giri*; and in a map which I received, I find it called *Gurgan-droog*. The country through which I passed is flat, but the soil is rather poor. Almost the whole of it, however, is capable of being cultivated; but by the *Marattah* invasion it has been quite depopulated, and I passed only two small villages.

History of *Yagati*.

At one of these villages, named *Ana-giri*, in the *Yagati Taluc*, I met the *Amildar*. He says, that his district produces an annual revenue of 10,000 *Pagodas*, or 3120*l.* 8*s.* 4*d.* It formerly made a part of the *Garuda-giri* district, and belonged to the *Mysore Rájás*. On the occasion of an invasion by the *Nizam*, *Hunnama Nayaka*, *Polygar* of *Terri-caray*, rendered such assistance to the *(Curtur)* sovereign of *Mysore*, that he was rewarded by a cession of the *Yagati Taluc*. *Hyder* deprived the *Terri-caray* family of all their territories, ordered them to reside at *Manzúr-ábád*, and allowed them an annual pension of 2000 *Pagodas*, or 625*l.* 1*s.* 8*d.* They were by cast *Baydaru*, but of a different family from the *Rájás* of *Chatrakal*. During the reign of the *Sultan*, the present heir of the family enjoyed his pension. On the fall of *Seringapatam* he joined *Dundia*, and hanged three or four *Bráhmans*, who were his servants, and who refused to follow him in his mad enterprise. He afterwards repented, and, having submitted, was kept in irons for some time at *Seringapatam*. About two months ago, the *Amildar* says, this *Polygar* was liberated, and received the grant of a pension of thirty *Pagodas* a month.

Garuda-giri.

Garuda-giri at one time belonged to the *Ikeri Polygars*, from whom it was conquered by the family of *Mysore*. These built the *Durga*, or fort, which occupies the highest part of a short abrupt ridge, that by a strong imagination has been fancied to resemble one of the rude images of *Garuda*. The suburb *(Petta)* stands at

the foot of the hill, and is fortified. During the government of *Tippoo*, it was the nominal capital *(Kasba)* of an *Asoph*; but that officer resided at *Chica-Nayakana-hully*, which is twelve cosses distant. *Garuda-giri* never was a large place, and at present contains only about forty houses. The *Amildar* is a *Sivabhactar;* as are also, according to him, by far the greater part of the neighbouring people; but in the public accompts, to be hereafter mentioned, very few of this sect are reported. CHAPTER XIX. May 9.

In all the country between this and *Seringapatam*, *Ragy* is the most common crop; and the cultivation of that grain prevails all the way towards *Baba Bodeens* hills, where the rice and *betel-nut* country begins. The rice-ground, according to the *Amildar*, produces on an average twenty fold.

In this part of the country there are many sheep, but few black cattle. The shepherds and their families live with their flocks. The men wrap themselves in a blanket, and sleep in the open air among the sheep. The women and children sleep under hemispherical baskets, about six feet in diameter, and wrought with leaves so as to turn the rain. At one side a small hole is left open, through which the poor creatures can creep, and this is always turned to leeward, there being nothing to cover it. I have not in any other country seen a habitation so very wretched. Shepherds.

Throughout the *Chatrakal* principality the roofs of the houses are terraced with mud, and this custom also commonly prevails over the eastern parts of *Mysore*, *Sira*, and *Colar;* but the fashion here is pent roofs. Although in every part of *Karnata* the materials for building huts are excellent, yet those with pent, and those with terraced roofs, look equally mean and rugged. Houses.

In a hill lying south from *Garuda-giri*, and called *Hiricul*, there are found both sandal-wood and lac. Owing to the increasing number of tigers, the collecting of this last has of late been given up. Lac and sandal.

10th *May*.—I went two long cosses to *Banawara*. The country May 10.

CHAPTER XIX.

May 10. Appearance of the country.

through which I passed is scarcely any where too steep for the plough; but it is almost entirely waste, and much of it is overgrown with the wild date, which at present is only used for firewood. The chief cause of the desolation which is here visible is said to be the rapacity of the *Marattahs*. Within the memory of man this country has suffered two inroads, one about thirty years ago by *Trumbaca Mama*, and another by *Purseram Bow*.

Banawara.

Banawara is one of the best mud forts that I have seen; and, owing to its strength, it escaped from the fangs of the *Marattahs*. It is situated in a fine open country, on the side of a large *Tank* which is at present dry. The people are very subject to fevers, which cannot be attributed to the black clay; for the soil is dry and sandy. It formerly belonged to *Hari Hara Swaméswara Ráyá*, a *Polygar* descended from *Belalla Ráyá*, and of course of a most ancient family of the *Jain* religion. The ruins of their palace still occupy a considerable space, and are surrounded by a very high wall, which even now is in good repair. The buildings within have been mean, and are almost entirely ruinous. This family was destroyed by *Ballu Khan*, a *Mussulman* chief. He was expelled by a *Bayda* named *Timuppa Nayaka*; he again was driven out by the *Shivabhactars* of *Ikeri*; and from them the place was taken by *Chica Deva Ráya Wodear* of *Mysore*, the 7th in ascent from the *Curtur* whom *Hyder* confined. On that chief's getting possession of the government, *Banawara* contained about 2000 houses; but most of the inhabitants, with those of five other towns, were removed to occupy a new city, named *Naga-puri*.

Naga-puri.

In order, probably, to secure these people and their effects from the *Marattahs*, *Hyder* built the fort of *Naga-puri* in a small valley, which is about half a coss in extent each way, and is surrounded on all sides by low hills, like those of *Chatrakal*. These hills appear to extend about two cosses from east to west, and three cosses from north to south. *Naga-puri*, which stood three cosses from *Banawara*, was found to be excessively unhealthy; and its situation did not

prevent it from being plundered by the *Marattahs*. *Hyder*, therefore, eighteen months after having built it, allowed the people to return to their former abodes. May 10.

Banawara.

Tippoo bestowed some attention in encouraging the people of *Banawara*. On the fall of *Seringapatam*, *Hunnama Nayaka*, an uncle of the *Polygar* of *Terri-caray*, seized on the fort, and kept possession for two months and a half. On the approach of a detachment of British troops, his followers dispersed; and the newly appointed *Amildar*, who was in the neighbourhood with 300 *Candashara*, seized him, and hung him up directly. At present, *Banawara* contains 500 houses, many of which are inhabited by *Bráhmans*.

Lands forced on the cultivators.

The cultivators being scarce, the officers of revenue fall on a curious plan of increasing the appearance of cultivation, and of thus getting credit for having their districts in good condition. This is a very common practice, I am told, in every part of the south of India, and is as follows. In place of letting at the full rent, to the few inhabitants that remain, as much land as they can cultivate, the *Amildars* give no man more than what his family originally possessed; but, when he has finished the cultivation of his paternal farm, the tenant is forced to plough and sow as much of the waste fields as he can; and, in order to increase the quantity, no money-rent is demanded; but the government is contented with a share of the produce, which is very small, the cultivation having been performed in a very imperfect manner.

Division of crops.

Some of the rice-lands here are let for a money rent, and some by a division of crops, which the *Amildars* allege is much the best mode of assessment in a country where the quantity of rain is so uncertain. If the rains do not come, the tenant cannot pay his rent; and if they come in abundance, it is but fair, that the government should reap a part of the benefit. This reasoning is specious; but the division of crops, except under the immediate inspection of a small proprietor, gives such opening to fraud, that it ought to be utterly discarded. For the uncertainty of the seasons an easy

CHAPTER XIX.

May 10.

remedy occurs. As, before the cultivation commences, it is exactly known, what extent of ground the water in the *Tank* will irrigate, those persons, in case of a scarcity of rain, may be exempted from rent, who cannot cultivate their fields; and there is no occasion for any favour being shown to those who can get a supply of water.

Rice-land.

In this district *(Taluc)* good rice-land lets at twenty *Bahadury Pagodas* a *Candaca*, which the cultivators say is equal to the value of one half of the grain produced; for they acknowledge, that this ground produces forty fold, and value each *Candaca* at one *Pagoda*. This, however, is a low valuation; for the *Candaca* here contains 24,480 cubical inches; so that at this rate the bushel of rough rice would cost rather under $8\frac{1}{2}d.$ The produce of the soil here, and in the *Budihalu* district, is acknowledged to be nearly the same; while in the intermediate district of *Garudagiri*, the people acknowledge only half the quantity. The people of *Banawara* say, that their neighbours did not impose upon me; but that their soil is actually inferior. I measured a plot, which was said to require a *Colaga* of seed, and found that it contained 23,255 square feet. At this rate, the acre will require for seed $1\frac{695}{1000}$ bushel nearly, which agrees very well with the measurement at *Belluguru*. The acre here produces $42\frac{69}{100}$ bushels of rough rice, and pays 15*s.* 1*d.* of rent, which is reckoned the value of one half of the grain produced; but this is valued by at least one fourth too little.

Tobacco.

In the neighbouring districts of *Garuda-giri*, *Banawara*, *Caduru*, *Harana-hully*, *Honawully*, and *Chin'-ráya-pattana*, the cultivation of tobacco is very considerable. It is exported in large quantities to all the countries toward the north and west. It is sown in the dry field, cultivated for *Ragy* and other similar grains, of which a crop must intervene between every two crops of tobacco. When the season proves very wet, it cannot be cultivated, and it requires a good *Ragy* soil. A few small stones do no harm, but it will not grow on

the hard soil called *Darray;* and, in fact, the soil of the first quality is that usually employed, though sometimes the tobacco is planted on the best fields of the second quality. In the three months following the vernal equinox, the field ought, if possible, to be ploughed ten times; but some of these ploughings are often neglected. After the 4th or 5th time, sheep and cattle must for some nights be kept on the field for manure. During the last fifteen days of the second month after midsummer, small holes are made throughout the field. They are formed with the hand, and disposed in rows distant from each other $1\frac{1}{2}$ cubit; and in every hole a young tobacco plant is set. This being the rainy season, the tobacco requires no watering, unless during the first ten days from its having been transplanted there should happen to be two succesive fair days. In this case, on the second fair day, water must be given with a pot. On the 15th day a little dung is put into each hole, and the field is hoed with the *Cuntay.* Every fourth or fifth day, until the tobacco is cut, this is repeated, so as to keep the soil open and well pulverized. At the end of a month and a half, the top shoots of the plants are pinched off, and every eight or ten days this is repeated; so that six or seven leaves only are permitted to remain on each stem. In the month preceding the shortest day, it is fit for cutting. The stems are cut about four or five inches from the ground, and are then split lengthwise; so that each portion has three or four leaves. These half stems are strung upon a line, which is passed through their root ends; and then for twenty days they are spread out to the sun and air. Every third day they are turned, and they must be covered with mats should there happen to be rain; but at this season that seldom comes. The tobacco is then taken into the house, put into a heap, and turned four or five times, with an interval of three days between each time. It is then fit for sale, and by the merchants is made up into bundles, which include the stems. It is sold by weight; and on an average the farmer gets one *Sultany*

May 10.

CHAPTER XIX.

May 10.

Pagoda for every four *Maunds*, each containing 40 *Seers* of 24 *Rupees* weight. This is at the rate of very nearly a penny a pound, being 9*s.* 3½*d.* a hundred weight. In order to prepare the seedlings, a plot of ground must be dug in the month which precedes the longest day. It must be then cleared from stones, and separated by little banks into squares for watering, in the same manner as in this country is done to kitchen gardens. The tobacco seed is then mixed with dung, and sown in the squares, which are smoothed with the hand, sprinkled with water, and then covered with branches of the wild date. Every third day it must be watered. On the 8th day the plants come up, and then the palm branches must be removed. If the plants be wanted soon, they ought to have more dung, and to be kept clear from weeds. With this management, they are fit for transplanting in from a month to six weeks. If they are not wanted for two months, or ten weeks, the second dunging is omitted, and the growth of the plants is checked by giving them no water for eight days after they come up.

Value of land cultivated for tobacco.

A *Wocula* of *Ragy* land plants 4000 tobacco stems, and in a good crop produces 16 *Maunds*, worth four *Sultany Pagodas*. This ground would sow one *Colaga* of *Ragy*, and produce two *Candacas*, or forty fold, worth 2 *Pagodas*. The *Colaga* or *Wocula-land*, of the first quality used for tobacco, pays a tax of one *Pagoda*; of the 2d quality it pays ¼ of a *Pagoda*; of the 3d, or worst quality, it pays half a *Pagoda*. I measured a field said to require 1½ *Colaga* of *Ragy* for seed, and found it to contain 15,000 square feet. The *Wocula* land, therefore, should contain 100,000 square feet; but, if a *Wocula* plants 4000 tobacco stems at 1½ cubit distance, which I found to be the actual thickness, more than one fourth of this extent cannot be allowed for it. The number of 4000 plants, that can be put in a *Wocula* of land; was afterwards confirmed to me at *Jamagullu*. I am quite uncertain, however, whether the actual measurement, or a calculation founded on the number of plants, ought to be preferred. By the former, the acre of the first quality of land would pay a

little more than 3*s.* 6*d.* as land tax, and would produce 169 lb. of dried tobacco, worth 14*s.* 0½*d*; or it would sow almost two gallons of *Ragy* seed, and produce almost ten bushels, worth 7*s.* 0¼*d.* On the other supposition, the rent, seed, and produce, would be four times as great; but that would render this land almost as valuable as rice ground, which cannot be the case. May 10.

11th *May.*—I went three long cosses to *Jamagullu.* The country is rather more broken than that through which I have come for the last two days, and is equally deserted. The wild date has even overgrown much of the rice-land. *Jamagullu* at present contains about eighty houses, and has a fort. Before the invasion of *Triumbaca Mama,* it was a large place, but has never since recovered. May 11 Appearance of the country.

Here is a temple dedicated to *Narasingha,* and built entirely of *Balapum,* or potstone. It is highly ornamented after the *Hindu* fashion, and on the outside every part of its walls is covered with small images in full *relievo.* Both the general structure of the fabric, and the execution of the component figures, are utterly destitute of either grandeur or elegance; indeed, I have not yet had the good fortune to meet with a *Hindu* image that was tolerable. This temple is said to have been built by *Sholun Ráya,* and the architect that he employed was named *Jacanachery.* This prince lived about a thousand years ago; and having killed a *Bráhman,* in order to wash away his sin, he employed twenty years in travelling between *Kási* and *Raméswara,* and in rebuilding temples. The one here entirely resembles in its style the others that I have seen which are attributed to the repentance of this personage. It has an inscription on stone, but that has been defaced. The annual revenues formerly belonging to the temple amounted to 250 *Ikeri Pagodas* (100*l.* 6*s.* 4½*d.*). These were entirely removed by the *Sultan. Purnea* allows it 50 *Canter' Ráya Pagodas* a year in money, or 15*l.* 12*s.* 0½*d.* Temple built by *Sholun Ráya.*

Many of the *strata* around this are of potstone. They are quite vertical, and run north and south in the usual direction of the other *strata* of the country. In general, the potstone breaks into *Strata* of potstone.

CHAPTER XIX.

May 11.

small fragments, and is full of fissures; but in the neighbouring country there are many quarries, where masses of great size may be procured. It forms an excellent material for building, being very easily cut, and at the same time being excessively tough. The good kinds resemble entirely the stone at *Maru-Hully*, described in the eighth chapter of my Journal, Vol. II. p. 146; and, in fact, are somewhat between a hornblende and a potstone.

Climate and soil.

For the two last nights there has been much thunder, but no rain. To-night there was both thunder and very heavy rain. The soil here is very fertile; for the farmers acknowledge 50 fold to be the usual crop of both *Ragy* and rice, that have been sown on good ground properly cultivated. From what I have stated at *Banawara*, the produce by the acre, at this rate, may be easily estimated.

Bull Rájás.

The fort of *Jamagullu* was built by a *Baydaru Polygar*, named *Eijuru Vencatuppa Nayaka*. His family were related to the *Polygars* of *Raya-durga*, and south and west from hence possessed very considerable territories. *Jamagullu* was taken from them by the *Mysore* family, who annexed it to *Banawara*, under which it has ever since continued. In the reign of the *Sultan*, the descendants of *Eijuru Vencatuppa* had no lands, but still retained the title of *Bull Rájás*, and had an annual pension of 5000 *Pagodas* (1560*l.* 3*s.* 9½*d.*). On the fall of *Seringapatam*, *Kristuppa Nayaka*, the heir of the family, seized on *Manzúr-ábád*, *Bailuru*, and other parts of his ancestors dominions, and has made an obstinate struggle to retain them. In this he has had little success, and he has lately been forced to retire to the almost inaccessible forests near the *Ghats*.

May 12. Weather.

12th *May*.—I went to *Hullybedu*, a stage of about 10 miles, but it is called only two cosses. By the last night's rain the rivulets were swollen, and the natives consider the rainy season as commenced; but for the first two months, showers once only in four or five days are expected. On this day's route much of the soil is good, but the country is quite deserted. By the way I observed some small hills, consisting entirely of calcarious tufa, mixed with a little earth. *Hullybedu*, at present, is a small mud fort, with a suburb *(Petta)*

CHAPTER XIX.

containing about eighty houses, and abounding with beggars. It stands on the side of a large *Tank*, that waters a great deal of fine rice-ground, much of which is planted with sugar-cane, and some with palm gardens. This *Tank* was formerly in the centre of a great city, which was named *Dorasamudra*, and was the residence of several of the *Belalla Ráyas*, who once reigned over a great part of the peninsula of India. According to the natives, the walls of this city may be traced, extending three cosses in circumference; and the site of the palace is shown, and is readily distinguishable by having been placed in an inner fort, or citadel.

May 12.

The *Belallu* family having been originally *Jain*, some traces of that religion still remain. There are here several people of that persuasion; and within a common inclosure there are three of the temples called *Busties*. Here are three inscriptions; one defaced, and two legible. I had the latter copied, and left the copies that they might be written in a fair hand; but they were not forwarded, according to promise.

Jain.

The most remarkable building at *Hullybedu* is a temple of *Siva* erected by *Vishnu Verdana Ráya*. From an inscription on the wall, this must have been before the year of *Sal.* 1203, or A. D. 1281. A copy of this inscription has been delivered to the Bengal government. This temple is built of similar materials, and in a similar style of architecture, with that at *Jamagullu;* but is larger, and more crowded with ornaments. Its walls contain a very ample delineation of *Hindu* mythology; which, in the representation of human or animal forms, is as destitute of elegance as usual; but some of the foliages possess great neatness, as may be seen by a drawing made of part of one, and given in Plate XXVII. figure 83. The temple has long been without a *Púját*, or public worship, and has gone so far to decay, that it would be repaired with great difficulty. This is a pity, as it much exceeds any *Hindu* building that I have elsewhere seen.

Fine temple of *Siva.*

Before the temple are placed two images of the *Baswa*, or bull of *Siva*. The one is of *Balapum*, or the potstone impregnated with

Fine stones.

CHAPTER XIX.

May 12.

hornblende, of which the temple is built, and which does not admit of a marble polish. This stone, which as usual represents the bull in a lying posture, is sixteen feet long, ten feet high, and seven feet broad. The other image is not quite so large; but its materials are finer, and admit of a marble polish. It seems also to be a potstone, or perhaps a talc impregnated with hornblende, and contains small irregular veins of a green shining matter. Its general colour is black, with a tinge of green. Some of the pillars in the inner part of the temple are of the same fine black hornblende that is used in *Hyder's* monument, and are highly polished. Some of them reflect objects double, which by the natives is looked upon as miraculous. These temples having been built when this was the seat of empire, and the inhabitants for many centuries having had no occasion for such costly materials in their buildings, the knowlege of the quarries from which they were supplied has been lost; and the natives believe that the stones were brought from *Kási*, on the banks of the *Ganges*.

Rock called *Caricullu*.

A very common rock here is called by the natives the black-stone *(Caricullu)*. It seems to be a hornblende porphyry; but the basis, having a slight degree of transparency, probably consists of an intimate union of hornstone, or quartz, with hornblende. It is black, with a greenish tinge, and greasy appearance, and contains white felspar in pieces of various sizes. It sometimes also contains veins of quartz, and on that account might perhaps be called a *Sienite*. It does not cut well for fine buildings; but breaks into quadrangular masses, which, from their being excessively tough and durable, make excellent rough work. For the same reason it is frequently hollowed out into the mortars of oil mills.

May 13. Appearance of the country.

13th *May*.—I went three cosses to *Bailuru*. The country is very bare; some of it is hilly, and full of stones; much of it is a good *Ragy* soil; but very little is cultivated. I crossed a small river called the *Bhadri*, which comes from *Baba Bodeens* hills, and runs into the *Cavery*. It never dries entirely, and receives the water

CHAPTER XIX.

May 13.

from all the country south from *Banawara*. To the west of the *Bhadri* river the country is called *Malayar*, or the hills; while that on the eastern side is called *Meidán*, or the open country. I remained at *Bailuru*, taking an account of the cultivation there, as an example of that which prevails in the hilly region whence the *Cavery* has its sources.

Country called *Malayar*.

The nature of the *Malayar* country resembles that of the sea coast below the western *Ghats*, in so far as rice is the principal object of cultivation, and as little attention is paid to the rearing of dry grains upon which the people to the north and west of the *Bhadri* chiefly subsist. In the *Malayar* country, however, there are no pepper gardens, nor plantations of *betel-nut* palms, for which it seems as well fitted as the *Nagara* principality. It is said entirely to resemble the *Codagu Ráyáda*, or *Coorg* country. At *Bailuru* there is no brickstone, and the country abounds with the calcareous *tufa*. The hills are overgrown with wood, and are considered as quite useless. The vallies only are cultivated.

Rice-ground.

On the *Bhadri* there was formerly a dam, the water from which irrigated forty *Candacas* of rice-land; but this has gone to decay, and to repair it would require two or three thousand *Pagodas*, or about ten years rent. The rains in all the *Malayar* country are very heavy, and in general bring one crop of rice to maturity; but unless there be small *Tanks* to give a supply for any intervals of fair weather that may occasionally happen, the crops are rather uncertain. This circumstance occasions the rice-lands to be divided into two kinds; the one, called *Niravery*, is supplied from *Tanks*; and the other, called *Mackey*, depends entirely on the rains.

Rent and quantity of seed.

Each kind of rice-ground, according to its soil, is divided into three qualities. The extent is estimated by what are called *Candacas*; but these vary much in size, and in general require much more seed than one *Candaca*. A *Candaca* of *Mackey* is always larger than one of *Niravery*; and the rent not only depends on the nature of the soil, but on the extent of the *Candaca*. The *Candaca* of grain,

CHAPTER XIX.

May 13.

it must be observed, contains 4095 cubical inches, and consists of twenty *Colagas*, each divided into nine *Cucha Seers*. I measured a field of rich *Mackey* land, which was called a *Candaca*, and required thirty *Colagas* of rice-seed. It not only produced annually a crop of rice, but one also of *Callay (Cicer arietinum)*; on which account it paid a rent of three *Ikeri Pagodas* a year, which is the highest rate in this district *(Taluc)*. I found that it measured 64932 square feet. At this rate, an acre would sow $1\frac{9155}{10000}$ bushel, and pay 16*s*. $2\frac{1}{2}$*d*. as rent. I then measured a field of *Niravery*, of a very poor soil, but well supplied with water. It is said to require thirty-three *Colagas* of seed, and its rent is also three *Pagodas*. In order to make up for the poverty of soil, a quantity of dry-field is thrown into the field, and pays no additional rent. This dry-field sows four *Seers* of *Ragy*, *(Cynosurus corocanus)*, and two of *Huts' Ellu (Verbesina sativa*, Roxb: MSS.). I found, that the *Niravery* contained 28566 square feet, and the *Ragy* ground 7100 square feet. The rent upon the acre, including both kinds of ground, is therefore 1*l*. 9*s*. $6\frac{1}{2}$*d*. The seed of rice is at the rate of $4\frac{7992}{10000}$ bushels an acre; that of *Ragy* at the rate of rather more than one peck $1\frac{13}{100}$; and that of *Huts' Ellu* at the rate of about half a peck an acre. In the following table will be seen the kinds of rice cultivated here.

Kind.	Land.	Cultivation.	Quality.	Months required to ripen.
H ssoday	*Niravery*	Dry-seed	Large	8
Chipiga	do.	do.	do.	7
Kiaseri	do.	do.	do.	7
Cumbara Kiaseri	Both	do.	do.	7
Balla Mulligay	*Niravery*	do.	Middle sized	8
Sana Butta Bily	do.	do.	Small	8
Do. *Kempu*	do.	do.	do.	7
Modara	Both	All 3 methods	Coarse	7
Kirwiunna	*Niravery*	Dry-seed transplanted	do.	8
Putta Butta	do.	Dry and sprouted-seed	Small	8

May 13. *Niravery* land.

On *Niravery* land, or that which has a supply of water from *Tanks*, the rices most commonly cultivated are *Kiriwunna* and *Hassoday*. All the three kinds of cultivation are in use; but in ordinary seasons the dry-seed is by far the most prevalent. In extraordinary wet seasons a good deal is transplanted, and some is sown sprouted.

Dry-seed.

The cultivation of the dry-seed is conducted as follows. In the month following the winter solstice, the ploughing commences, and in the course of two months the operation is eight times repeated. The little banks, inclosing the plots for confining the water, are then repaired, and the field is manured. In the month preceding the vernal equinox, after a shower of rain, the clods are smoothed with the *Ada*, or *Gydday Maram*, which is the same implement with that which at *Nagara* is called *Noli*, Plate XXIX. Figure 79. Eight days afterwards the field is again ploughed, and again smoothed with the *Ada*. The seed is sown by the drill, according as the rainy season commences, during the two months and a half which follow the vernal equinox. It is then covered by the *Ada*. On the 23d day after having been sown, the field is hoed with the *Edday Cuntay*, Plate XXVIII. Figure 76, and this is repeated twice, with an interval of four days between each time. The field is then inundated by confining the water, and the *Cuntay* is drawn a 4th time in the mud. On the day following, the soil is smoothed with the *Ada*. Eight days afterwards, the field is drained until the weeds can be removed by the hand. After a month or six weeks, this must be repeated. The rice is cut with the straw, and trodden out by oxen. It is sometimes sold by the cultivators in the husk, and sometimes after having been cleaned, eight parts of which are equal in value to twenty parts in the husk The farmers estimate their rough rice at six *Candacas* for a *Bahadury Pagoda*, or their rice at 30 *Seers* for the *Rupee;* but in the market *(Bazar)* none is sold lower than 28 *Seers* for a *Rupee*. The wholesale price for rough-rice, therefore, is a small fraction less than 8½*d*. and

CHAPTER XXI

May 13.

for rice a small fraction more than 1*s.* 9*d.* a bushel. This, however, is only the price for which necessitous persons sell it at harvest-time; the average value is probably a fifth part more. The farmers say, that on a good soil the crop is about 25 *Candacas* on a *Candaca* land, which, according to my measurement, is about 72½ bushels an acre, worth 2*l.* 11*s.* 2½*d.* deduct for seed 3*s.* 4½*d.* and for rent 1*l.* 9*s.* 6½*d.* and there remain to the tenants, for stock and labour, 18*s.* 2½*d.*

Advantage of sowing thick.

Nothing can better show the great error into which the *Hindu* farmers fall, in sowing too little seed; a practice which seems to have arisen from their usual poverty, and from the constant cropping of their land, which, without plentiful irrigation, or rich manuring, is thereby too much exhausted to produce a full crop. The farmers here, probably, under-rate their produce as much as their neighbours; but as they sow their seed almost four times as thick, they have from the same extent of land at least three times as much produce. It is true, that here they speak of a small increase of seventeen or eighteen fold, while in other places they talk largely of an increase of forty, and even sixty seeds; but here an acre produces for the support of man from sixty-five to seventy bushels of rough rice; while in the others from twenty to twenty-four may be considered as a usual crop.

Transplanted crop.

When the rains are heavy, a good deal of rice is raised by transplantation. For every *Candaca* land, two *Candacas* of seed must be sown; and the produce of this, on the best land, is only twenty-one or twenty-two *Candacas*.

Sprouted seed.

Very little sprouted-seed is sown; but it seems to be the cultivation that would answer best. For a *Candaca* land fifteen *Colagas* of seed are sufficient, and the produce is little less than in the dry-seed. The reason that the natives assign for neglecting the sprouted-seed cultivation is, that it requires the ploughing to be performed while the field has by irrigation been reduced to mud, and that their cattle are not adequate to this labour. The cattle

CHAPTER XIX.

May 13.

however, are not worse than those of the sea-coast, where the dry seed is seldom sown.

Mackey land.

On the *Mackey* land, or that which depends entirely on rain for a supply of water, the seed is always sown without preparation, and managed exactly in the same manner as on the *Niravery*. The produce, on the best land, is 22 *Candacas* from thirty *Colagas* sown on a *Candaca* field. According to my measurement, this makes the produce of the acre rather more than 28 bushels, worth 19*s.* 10*d.* deduct 1*s.* 4½*d.* for seed, and 6*s.* 2½*d.* for rent, and there would only remain 2*s.* 3*d.* for stock and labour; but it must be observed, that my estimate of the rent is formed from a very rich field, that produces a second crop of *Callay*, and that the rent of fields giving only a crop of rice is not more than half as much as what I have here stated.

The *Callay*, or *Cicer arietinum*, is sold as it ripens; so that the farmers cannot, or at least will not, say what the produce is.

Dry-field.

The only dry crop cultivated here is *Ragy* mixed with *Huts' Ellu*. When the rains are scanty, these thrive very well; but the seasons are often so wet, as to destroy them all together. The whole quantity sown is very small. The ground is ploughed four times, and then manured during the month following the vernal equinox, or in the beginning of the next month. The field is then ploughed twice more. The *Ragy* seed is sown with the *Curigy*, or drill; while the *Huts' Ellu* is disposed in rows, by means of the *Sudiky*, or sharp pointed *Bamboo* tied to the drill. After this, the field is smoothed with a plank, and harrowed with a bunch of thorns. On the 12th day it is hoed with the *Cuntay*, and this is repeated four times, with intervals between every two, of from five to eight days. The produce in a good crop is said to be forty seeds of *Ragy*, and nine of *Huts' Ellu*. According to my measurement, this will make the produce of an acre 16 $\frac{7}{10}$ bushels of *Ragy*, and 1$\frac{1}{8}$ bushel of *Huts' Ellu*.

The lands here, both dry and watered, are let by a fixed rent in

CHAPTER XIX.

May 13.

Tenures.

money, according to an old valuation. They are seldom kept separate; but a little of the dry field is thrown into the contiguous plots of rice land. In this district, the *Bráhmans* have lands in free gift *(Enam)* to the annual value of 500 *Pagodas;* and a *Mussulman* has an estate of the same nature worth 24 *Pagodas.* These lands may be transferred by sale. All the remainder is the property of the Government; but, if a farmer pay the full valuation, he cannot legally be turned out of his possession. Many of them, however, will not consent to give the full rent, and these may be dispossessed whenever a better tenant offers. The *Niravery* is valued at from two to three *Bahadury Pagodas* a *Candaca.* The *Mackey,* except where it is extraordinarily rich, is only valued at from 1 to $1\frac{1}{2}$ *Pagoda.*

Price of abour.

In the *Malayar* there are no slaves. Most of the labour is carried on by the farmers, and their own families. Servants are hired by the year, month, or day. A man's wages when hired by the year are annually three *Pagodas,* a pair of sandals, a blanket, and daily a meal of ready-dressed rice; worth all together about five *Pagodas,* or about 2*l.* He eats another time daily, but this is at his own expense. A servant hired by the month gets half a *Pagoda,* or about four shillings, without any addition. The daily hire is $\frac{1}{3}$ of a *Canter'-ráya Fanam,* or $2\frac{1}{4}d.$ Hired servants work from eight in the morning until six in the afternoon; but half an hour's intermission is granted, to give them time to eat some ready-prepared victuals.

Stock.

Each plough requires two oxen, and one man, and can cultivate two *Candacas* of land. Suppose these to be of the best quality, then the rent will be six *Pagodas,* the man's hire five *Pagodas,* extra labour at seed-time and harvest three *Pagodas,* seed half a *Pagoda:* total expense, besides interest for the stock, fourteen *Pagodas* and a half. The produce, according to the farmers, is fifty *Candacas,* worth $8\frac{1}{3}$ *Pagodas.* From this it is evident, either that the farmers

May 13.

greatly over-rate their expenses, or under-rate the produce and extent of the land cultivated by one plough; and probably they do both; but what the real state is, I could not ascertain.

Cattle and manure.

The only manure used here is from the dunghill, in which, with all the cow-dung, the ashes and sweepings of the house are collected. The cattle sleep the whole year in the house, but are never littered, which is a very great defect in the agriculture of a country. On the *Malayar* side of the *Bhadri* rivulet, the size of the cattle diminishes, and sheep will not thrive; and in that country neither asses nor swine are bred.

Commerce.

A considerable trade is carried on between *Bailuru* and *Jamálábád.* The goods imported from the country below the *Ghats* are *betel-nut*, ginger, pepper, *Cassia (Laurus)*, *Cachora (Acorus)*, *Casturi* (a kind of turmeric), turmeric, and salt. The goods sent from *Bailuru* are tobacco, *Jagory*, capsicum, cummin-seed, *Danya*, (a seed like anise), tamarinds, iron, grain, buffaloes, onions, mustard, cotton cloth and thread, and blankets *(Cumlies)*.

Cochineal.

I found here two men whom an officer now stationed at *Arcot* employed in rearing cochineal. They have been in this country one year, have sent to their employer fifteen *Maunds*, have fifteen *Maunds* ready for sale, and, before the insects have consumed all the *Nopals (Cactus)* that are near the town, they expect to have ten *Maunds* more. When this happens, they will carry two men's load of branches filled with the insect, and apply these to the *Nopals* of some other place; where they will remain until the insects breed, and consume all the plants. The *Nopals* have been raised by the farmers as fences round their gardens, but were sold by the officers of revenue for four *Bahadury Pagodas*, or about a guinea and a half. So soon as all the plants have been consumed, such of the insects as have not been collected will perish; and the *Amildar* says, that he will then compel the farmers to plant new hedges of the *Nopal;* but I suspect that few plants will be reared, unless the farmers get a large share of the profits, as indeed they ought in reason to do. The hedges

CHAPTER XIX.

will grow up in three years, when it is expected that some other person rearing the insect will come and buy the plants.

May 13. This seems to me to be the most rational plan of any that has been hitherto proposed for rearing the cochineal in India; and to be deserving of the attention and encouragement of government. The men employed here say, that the young insects ought to be put upon the new hedges immediately after the rainy season is past. In six months they will have increased so, that they may begin to be collected; and a year more will elapse before the whole plants are consumed. During the course of this year, whenever a leaf is fully loaded, it ought to be cut, and the insects scraped from it with a small stick, and collected in a basket. While they are in this, a little boiling water is poured on them, by which they are killed. They are then well agitated in the basket, to remove the hair with which they are covered, and dried for two days in the sun, when they are fit for sale. These men say, that, all expenses included, the cochineal, thus prepared, will cost here three *Madras Pagodas* a *Maund* of forty *Seers*, each weighing twenty-four *Rupees;* which is rather less than 11*d.* a pound. The cochineal is of the bad kind that has lately been introduced into India, and the plant is the *Cactus* that is the aboriginal of the country.

History of *Bailuru*

Bailuru, or *Bailapuri*, as it is called in the *Sanskrit*, is situated at a little distance from the *Bhadri* river, and has a good fort built of stone, and a suburb *(Petta)* which contains about six hundred houses.

In order to get some historical information, I assembled the *Bráhmans* who are proprietors of free estates *(Enams);* but I found them, as usual, grossly ignorant. They either could not or would not read any of the inscriptions that are at their temple; and I was obliged to employ my interpreter to get one of them copied. It contains a grant of lands from *Narasingha Ráya*, son of *Vishnu Verdana*, to *Narasingha Swami*, one of the incarnations of *Vishnu)*, and is dated in the year of *Sal.* 1095. A copy has been given to the

CHAPTER XIX.

May 14.

Bengal government. I found among the *Bráhmans* a poor man who had no *Enam*, and whose poverty had sharpened his understanding: he read the inscriptions with the utmost facility, and I set him to work at them on the second morning of my stay; but I found his industry not equal to his intelligence; and in the evening, when I went to see what progress he had made, I found that he had scarcely commenced; and all the idle *Bráhmans* of the place having asembled on the occasion, the day had been passed in conversation. I found, however, that he possessed a manuscript that had been written by his ancestors, and which, he says, contains an account, collected from the inscriptions here, of the repairing the temple of *Cayshava Permal* by *Vishnu Verdana Ráya* in the year of *Salivahanam* 1039; and of all the gifts made to that celebrated place of worship by the three sons of this prince. This manuscript was in a very old character; but the *Bráhman's* necessities induced him to follow me to the next stage, and to give me a copy, which has been presented to the government of Bengal.

The temple in its present form was built by *Vishnu Verdana*, after his conversion by *Ráma Anuja Acháryá*, of which I have given an account in the seventh chapter of this Journal, Vol. II. p. 81. It is in good repair, and is a large building, which, although inferior to those of *Hully-bedu* and *Jamagullu*, is much ornamented after the *Hindu* fashion.

The *Bráhmans* whom I had assembled say from tradition, that this country, meaning *Karnata*, was divided among nine brothers of the *Belalla* family, who were all destroyed by the *Turcs*, except one young man. The *Mussulmans* found it afterwards necessary to restore this prince to the dominions of his ancestors; and on his first accession he was called *Bita Deva Ráya;* but afterwards, having rebuilt the temple here, and that of *Siva* at *Hully-bedu*, he took the name of *Vishnu Verdana*. He sometimes resided at the one place, and sometimes at the other; but *Hully-bedu* seems to have been by far the largest town. He had great success against the

CHAPTER XIX.

May 14.

Mussulmans, and expelled them entirely from all the country south from the *Krishna*. His son *Narasingha* governed quietly, and was succeeded by his son *Vira Belalla*, who was destroyed by a *Mussulman* prince that *Baba Bodeen* invited. His residence had been chiefly at *Bellagami*. The *Mussulman* prince is by the *Bráhmans* called *Hussein Khan*. He took up his abode in the great temple here, and was succeeded by his son *Runnadulla Khan*. This *Mussulman* was expelled by two of his *Hindu* officers, named *Rama Ráya* and *Achuta Ráya*, who established themselves at *Anagundi*. They were succeeded by their two brothers *Krishna* and *Narasingha Ráyáru*. Here these *Bráhmans* are jumbling together all the traditions of the country. What follows has more resemblance to probability.

The *Ráyaru* distributed all their dominions among their servants. The ancestor of the *Mysore Rájás*, for instance, was the person who made the king's bed. The person who carried the *Betel* box was *Vencatadri Nayaka*, ancestor of *Krishtuppa*, the present *Bull Rájá*. The chiefs descended from *Vencatadri* were originally of considerable note in the country, and had three places of residence, *Bailuru*, *Sakra-pattana*, and *Narasingha-pura*. When driven from these by the *Mysore* family, they retired to the hills of *Manzúr-ábád*, around which they possessed a territory worth annually 18,000 *Pagodas*, or 5616*l.* 13*s.* 4*d.* *Hyder* rendered them tributary, and the present heir was driven by *Tippoo* into the *Marattah* dominions. Five years afterwards he solicited a pardon, which was granted, and he was taken into the service on an allowance of 2000 *Pagodas* a year. This was afterwards increased to 5000. On the fall of *Seringapatam*, he demanded the restoration of his ancient family domains; which was refused, and he was offered the same allowance that he received from the *Sultan*. The people here think that he would be satisfied with being put on the same footing that he was in the reign of *Hyder*; but, as a war has commenced, he is not likely to get any thing. At first he had some success, and seized on *Bailuru*, but he is now cooped up in the woods of the western *Ghats*.

CHAPTER XIX.

15th *May*.—I went three cosses to *Haltoray*. I first recrossed the *Bhadri*, and then proceeded through a country fine by nature, but very bare. It does not seem so destitute of cultivators as most parts through which I have lately come; but at least one half of the arable lands are waste. There is much rice-land. Some of the *Tanks* are large; and the crop which they irrigate is raised chiefly in the dry season, after the quantity of water which they are to collect for the season has been ascertained. A great part of the rice-land is *Mackey*, which is cultivated in the rainy season, without a supply from *Tanks*. The farmers here acknowledge forty seeds as the usual produce of good rice-lands. The dry ground is very fit for *Ragy*; and on the east of the *Bhadri* much of that grain is raised.

May 15. Appearance of the country.

Near *Haltoray* are some fine *Betel-nut* gardens, the property of a kind of *Sri Vaishnavam Bráhmans*, called *Sankety*. They are all *Vaidika;* but are not on that account exempted from gross ignorance, and they never read any thing, except accompts, or letters on business. They are originally from *Dravada* proper, and now speak a strange mixture of the *Tamul* and *Karnata* languages.

Sankety Bráhmans.

Having assembled these *Bráhmans*, they gave me the following account of their gardens.

Betel-nut plantations are found no farther west than *Haltoray*, and from thence they extend all the way to *Sira*. As soon as the garden begins to produce, the proprietors pay one half of the nut, as rent to government, and are at the whole expense, not only of rearing the plantations, but of forming the wells and *Tanks* by which these are watered. The government gets no share of any other part of the produce, which consists of plantains and *Betel leaf*. A man may sell his garden; but if he allows it to become waste, the soil is public property. The plantation is not allowed to die out; but, when one tree decays, a new one is planted in its stead. After the trees have grown up, they are allowed neither dung nor water; but the garden is hoed three times in the year; and once in five years the channels for carrying off superfluous water are cleared, and

Plantations

CHAPTER XIX.

May 15.

some fresh earth is put on the beds. When *Betel leaf* is reared upon the palms, the garden must be regularly watered and manured, and on that account becomes more productive. Pepper vines, it is said, have been tried here, but without success. The *Bráhmans* say, that in the *Malayar* district they have in vain tried to rear the *Betel-nut* palm. How this should have happened I cannot understand, as the climate there very exactly resembles that of *Nagara*. Perhaps the *Bráhmans* have neglected to shelter the young plantations from the setting sun, which in the open country, owing to its greater coolness, is not requisite. A garden of 300 bearing *Arecas* produces ten *Maunds* of boiled *Betel-nut*, worth one *Bahadury Pagoda* a *Maund*, or 1*l*. 17*s*. 2¼*d*. a cwt. To give one *Maund* of prepared *Betel* requires 4000 nuts; so that the average produce, acknowledged by the proprietors, for each tree of a bearing age, is 133¼ nuts, that are worth, when boiled, 3¼ pence, of which one half is paid for rent. That this may be the amount received by government is very probable; but few will be inclined to credit that it really exacts the fair half of the produce.

Sandal.

Sandal-wood trees are planted in the hedges that surround these gardens. The government has the sole right of cutting and disposing of this article of commerce; but the proprietor of the garden expects for his trouble in rearing it, and with justice receives, a gratuity. The planted *Sandal* is here reckoned of as good a quality as that which has grown spontaneously.

Haltoray.

Haltoray is a ruinous mud fort, but it contains some good houses, which belong to the *Sankety Bráhmans*. Most of the other houses are in ruins, and were reduced to that state, by the troops of the *Sultan*; who, in their marches to and from *Mangalore* and *Nagara*, frequently passed this way. The discipline of this prince did not extend to prevent his troops from being rapacious, even in his own territory. In *Hyder's* government the people had no reason to complain of the army. *Haltoray* was never a large place. Its name is thus explained: *Hal* signifies milk, and *Teray* a stair

CHAPTER XIX.

leading down to a *Tank* or river. It formerly belonged to the *Hásina* district; but when the conquests of the *Mysore* family extended that length, it was annexed to *Bailuru*. Before this family rose to power, *Hásina*, *Gráma*, *Chin'-raya-pattana*, and *Narasingha-pura*, belonged to the ancestors of *Krishtuppa Nayaka*, the *Bull Rájá*. At *Haltoray* are the ruins of a temple dedicated to *Bira Linga*, a deity of the *Curubaru*. There are at it two inscriptions on stone. One of them is partly legible; and of all that could be made out in a connected form I procured a copy, which has been delivered to the government of Bengal. It is dated in the year of *Sal.* 1116, and in the reign of *Boca Rájá*, of whom I have no where else heard.

May 15.

Aray, or *Marattah* robbers.

In this vicinity robbers have for many years been very numerous. They are the farmers in the *Malayar*, or hilly country to the westward, and are all of *Marattah* extraction, on which account they are by the *Bráhmans* called *Aray;* for, in the *Arabi* or *Tamul* language, that is the name of a *Marattah*. These ruffians come in bands of from twelve to twenty men, and steal, or rob, whatever comes in their way. Murder and torture are frequently added to their other outrages. At present, this class of men have entirely given up agriculture, and have entered into the service of *Krishtuppa*, the *Bull Rájá;* nor are the troops of the *Mysore Rájá* able to prevent small parties of them from issuing out of the woods, and committing occasional depredations.

May 16. Appearance of the country.

16th *May.*—I went three *Sultany* cosses to *Hásina*, which derives its name from one of the *Saktis* that is the village deity *(Gráma Devata)*. The country through which I passed is fine *Ragy* land, but very little of it is cultivated.

In good rice-land at *Hásina*, twenty seeds are reckoned the usual produce. In this district, since the *Marattah* invasion, not above a fourth part of the former cultivators remain.

Change of climate.

The natives say, that formerly the rains were so copious, that by means of small *Tanks* a great part of the country could be cultivated

CHAPTER XIX.

May 16.

for rice. These *Tanks* were only sufficient to contain eight or ten days water, and to supply the fields when such short intervals of fair weather occurred. For forty years past, however, a change having taken place in the climate, no rice has been cultivated, except by means of large reservoirs. The truth of this allegation is confirmed by the number of small *Tanks*, the ruins of which are now visible; and by the plots of ground levelled for rice that are near these *Tanks*, and which are now quite waste.

Hásina.

Hásina formerly stood at some distance from its present situation, toward the south; but one of the *Anagundi Ráyarus*, being here on a hunting party, discovered, by the usual means of the hare turning on his dogs, that the place where it now stands was *male ground*. He therefore built a fort on the auspicious ground; and, while he was thus employed, an image of *Siva* rose out of the ground, and was called *Virupacshéswara*, after the celebrated idol at *Anagundi*. A temple was of course built over the image, and it is called *Siddhéswara*. At this temple two inscriptions on stone remain. The one, in the reign of *Achuta* and *Krishna Ráyaru*, is dated in the year of *Sal.* 1454. The other is in the reign of *Sedasiva Ráya*, son of *Achuta Ráya*, and is dated in the year of *Sal.* 1412, but that is evidently a mistake of the copyist for 1512, the *Karnata* cyphers for four and five having a strong resemblance. Copies of these inscriptions also have been delivered to the government of Bengal. The place was originally in the *Polyum*, or feudatory estate of the ancestors of the *Bull Rájá*. It was taken from them by *Renadulla Khan*, a *Pattan*, whose family held it sixty years. This family of Mussulmans seems to be the same with that which the *Bráhmans* of *Bailuru* confounded with the prince who destroyed *Vira Belalla Ráya*. The Mussulmans were expelled by the *Sivabhactars* of *Ikeri*, who held *Hásina* a hundred years. The *Mysore* family then kept it ten years; but were obliged to restore it again to the descendants of *Sedasiva*, the chief of *Ikeri*. Thirty years afterwards, however, they finally annexed it to their territories, and this happened 180 years ago. The whole

of the periods in this tradition seem to be engthened out greatly beyond the truth.

May 16. The fort at *Hásina* is by far the best that I have ever seen constructed of mud and rough stones, and is in excellent repair. *Hyder* made the covered way, and a central battery, or cavalier, which serves as a citadel. In his reign the fort contained about fifteen hundred houses, and in the suburbs *(Petta)* there were five hundred. At present, in both places there are only five hundred houses, of which one hundred are occupied by *Bráhmans*, and twenty by *Jain*. These have a temple of the kind called *Busty*, which is by far the neatest place of worship in the town. At *Hásina* there are scarcely either trade or manufactures.

May 17. *Gráma.* 17th *May.*—I went two *Sultany* cosses to *Gráma*, which signifies merely a village. It is, however, the *Kasba*, or capital of a *Taluc* (district), and is a considerable mud fort, containing about two hundred houses. It would not appear to have ever been more populous. It was not taken by *Purseram Bhow*, but suffered exceedingly in *Triumbaca Mama's* invasion. The officers of revenue say, that only one fourth part of the arable lands are waste. The rains never were so copious here as to admit of the cultivation of rice without large reservoirs; but the soil is abundantly good, and, according to its quality, produces from 15 to 40 seeds, both of rice and *Ragy*. The best *Ragy* land lets for eight *Sultany Fanams* a *Colaga;* which of course, at forty seeds, produces two *Candacas*.

May 18. Appearance of the country. 18th *May.*—I went, what appeared a long stage, to *Chin'-raya-pattana*. It was called four *Sultany* cosses. The country is naturally pretty; but, like all that between *Bailuru* and *Seringapatam*, it is exceedingly bare, and has hardly either trees or fences. Some of it is hilly, and much of it poor land; but, to me, by far the greater part of it appears to be arable. Not above one fourth part is now cultivated. On the way, there is one considerable village. Near the road are several fine *Tanks;* and the quantity of rice which this district produces almost equals that of *Ragy*. These *Tanks* also

CHAPTER XIX.

supply water to several palm gardens; and a considerable quantity of sugar-cane is raised on the land that they water.

May 18. *Chin'-raya-pattana.*

Chin'-raya-pattana signifies the city of the *little* prince, one of the names of *Vishnu*, who has a temple there. At this is an inscription on stone, of which a copy has been given to the Bengal government. It is dated in the year of *Sal.* 1400, in the reign of *Virapacsha Maha Ráyaru.*

Mysore family.

The fort is well built of stone and lime, and was made by a man named *Baswa-rajya*, in the service of *Canterua Nursa Rájá Wodear.* This was the first prince of the *Mysore* family who acquired great power. From the inscription, of which a copy has been given to the Bengal government, and which is engraved on a stone at *Chin'-raya-pattana*, it would appear, that this *Rájá* had acquired this town on or before the year of *Sal.* 1561, or of Christ 163⅘, and that then he acknowleged no superior. Here is also another inscription by the *Mysore* family, a copy of which has been delivered with the former. It is dated in the year of *Sal.* 1585, and in the reign of *Deva Rájá Wodear*, who, I believe, was the prince that extended the conquests of this family to *Banawara, Garuda-giri, Budihalu*, and other districts toward the north-west. Previous to the conquest by the *Mysore* family, *Chin'-ráya-pattana* was a *Grámam* belonging to the *Bráhmans* of *Vishnu's* temple; and it was subject to a *Polygar*, whose name the present inhabitants do not remember, but who must have been the ancestor of the *Bull Rájá. Purseram Bhow* did not attempt to take it, although the garrison consisted only of 500 *Candashara*; but the taking of towns was not his object. With a small suburb *(Petta)* it contains between eight and nine hundred houses, of which sixty are inhabited by *Bráhmans*, and 200 by the *Candashara* that form the garrison. It has a weekly fair, but no considerable trade.

Cycle of sixty years.

I procured from the *Bráhmans* here a table of the years that compose their cycle, to which I have often referred. I annex the years of *Salivahanam*, and of the Christian era, in which, according to the

Brâhmans of this town, each year of the present cycle commences. It must, however, be observed, that very great variations take place concerning this in different parts, and also apparently in the same part at different times; which renders this chronology of cycles of very little use to the historical antiquary. CHAPTER XIX. May 18.

Year of Christ.	Year of Cycle.	Year of *Salivahanam.*	Year of Christ.	Year of Cycle.	Year of *Salivahanam.*
1747	*Prabava*	1669	1777	*Hevalumbi*	1699
1748	*Vibava*	1670	1778	*Velumbi*	1700
1749	*Sucla*	1671	1779	*Vicari*	1701
1750	*Promoduta*	1672	1780	*Shervari*	1702
1751	*Prejotapati*	1673	1781	*Pluvva*	1703
1752	*Angkirsa*	1674	1782	*Chubucrutu*	1704
1753	*Srimoca*	1675	1783	*Shobacrutu*	1705
1754	*Bava*	1676	1784	*Crodi*	1706
1755	*Iva*	1677	1785	*Visuavasu*	1707
1756	*Dat'hu*	1678	1786	*Parabava*	1708
1757	*Ishura*	1679	1787	*Plavunga*	1709
1758	*Bohudania*	1680	1788	*Kilaca*	1710
1759	*Primadi*	1681	1789	*Sovumia*	1711
1760	*Vicrama*	1682	1790	*Satarana*	1712
1761	*Vishu*	1683	1791	*Virodicrutu*	1713
1762	*Chitrabanu*	1684	1792	*Paridavi*	1714
1763	*Suabanu*	1685	1793	*Premmdicha*	1715
1764	*Tarana*	1686	1794	*Ananda*	1716
1765	*Partiva*	1687	1795	*Racshasa*	1717
1766	*Veya*	1688	1796	*Nalla*	1718
1767	*Servajittu*	1689	1797	*Peingala*	1719
1768	*Servadavi*	1690	1798	*Calayucti*	1720
1769	*Virodi*	1691	1799	*Sidarti*	1721
1770	*Vicrotu*	1692	1800	*Raudri*	1722
1771	*Cara*	1693	1801	*Durmati*	1723
1772	*Nundina*	1694	1802	*Dundubi*	1724
1773	*Juja*	1695	1803	*Rudrodagari*	1725
1774	*Visia*	1696	1804	*Ructachi*	1726
1775	*Mummuttu*	1697	1805	*Crodona*	1727
1776	*Durmutti*	1698	1806	*Acchaya*	1728

In *Nepal*, the year 1802 was *Srimoca;* whereas at *Chinroy pattana* it was *Dundubi*; a difference of 11 years.

19th *May.*—I went two *Sultany* cosses to *Sravana Belgula.* To me the country appears to be almost entirely waste, although the May 19. Appearance of the country.

CHAPTER XIX. May 19.

Amildar will only allow that one fourth part of all the arable land in his district is unoccupied; but it must be always remembered, that very few of the native officers have an idea of any lands being arable, except such as are rated in public accompts. By the way I passed several fine *Tanks*; and the rains have already been so considerable, that one of the *Tanks* has been filled, so as unexpectedly to overflow, and break down its bank, which has deluged all the subjacent fields.

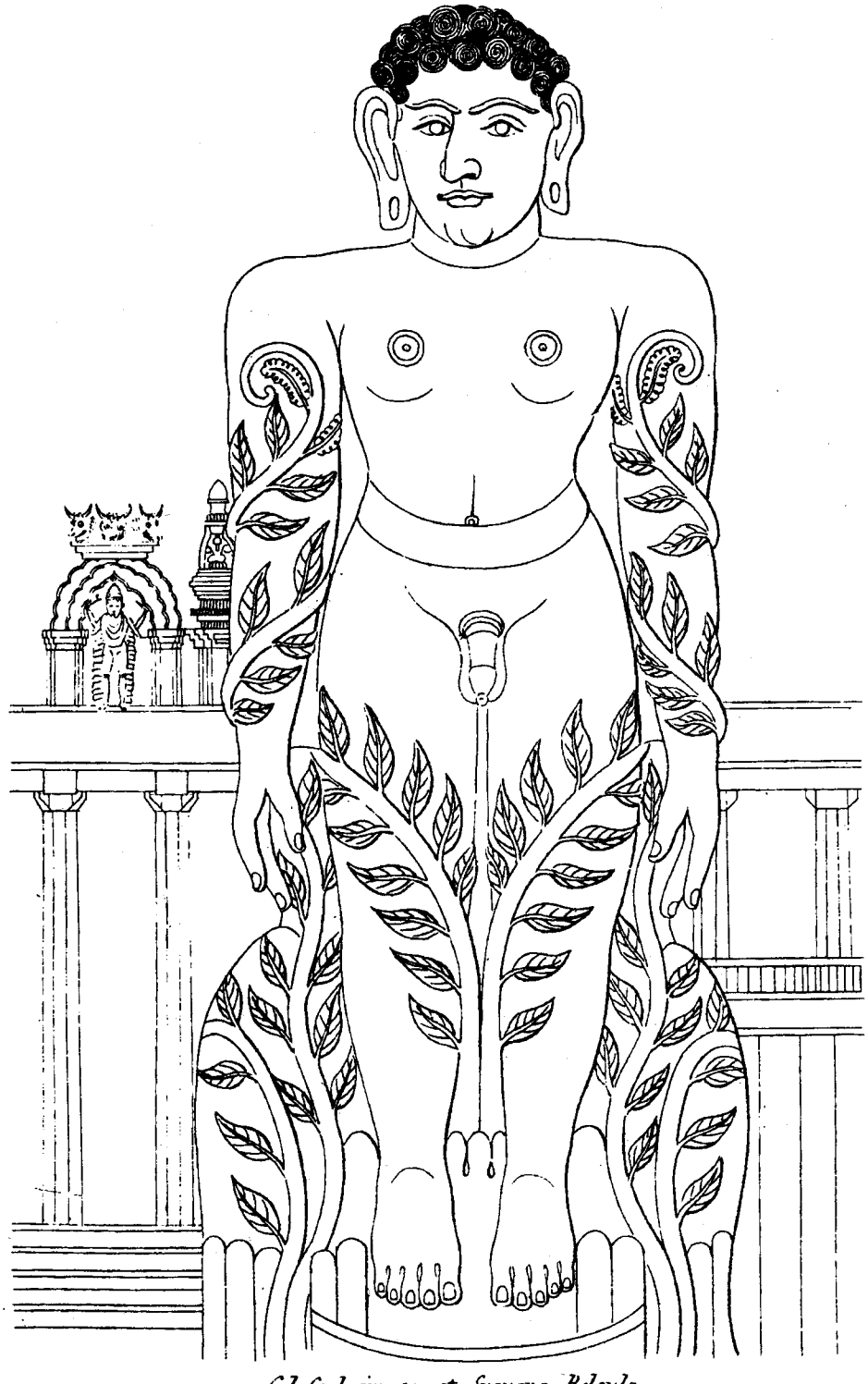
Sravana Belgula.

Sravana Belgula is a village containing 120 houses, and its name is said to signify *here is the white Solanum;* for in its neighbourhood a species of that plant grows very copiously.

Jain.

This place is celebrated, as being now the principal seat of the *Jain* worship, which once was so prevalent over the greater part of *India.* In the village is a *Matam* belonging to a *Sannyási,* who claims a precedency over the person with whom I conversed at *Carculla.* This *Sannyási* and his chief disciples were absent when I was at *Sravana Belgula.* Near the village is a *Tank,* a very handsome work. It was built by a *Jain* merchant of *Seringapatam.* Near the village also are two rocky hills. On the one, named *Indra Betta,* is a temple of the kind called *Busty,* named *Bundara;* and a high place (*Betta*), with a colossal image of *Gomuta Ráya.* This I was not able to visit, owing to an inflammation that attacked my eyes the day before, and rendered the light almost intolerable. I sent my painter and interpreter to inspect the hill. The painter gave me the accompanying sketch of the image, Plate XXXIV. Figure 84, for the accuracy of which I cannot answer. Its height is seventy feet 3 inches. Sir Arthur Wellesley, who has visited the place lately, thinks the drawing rather more clumsy than the image. He is of opinion, that the rock has been cut until nothing but the image remained. The interpreter brought copies of six inscriptions on stone, which have been given to the Bengal government. I then sent him to the other hill, named *Chandra-giri,* on which there are said to be fifteen *Busties,* or temples belonging to the *Jain.* There

Fig 84.



Colossal image at Sravana Belgula.

he found many inscriptions on stone; but having no time to copy them, he contented himself by noting down the dates and princes reigns of those which were in best condition. A copy of these notes also has been given to the Bengal government. From two of these dates it would appear, that *Vishnu Verdana Ráya* continued to reign in the years of *Sal.* 1045 and 1050. May 19.

Having assembled the most learned *Jain* here, they gave me a copy of a writing on *Palmira* leaves, which they said was a copy of an inscription on copper belonging to the *Sannyási*, their *Guru*. It is dated in the year of the *Kaliyugam* 600, and in the reign of *Rája Mulla*, king of the south. A copy has been delivered to the Bengal government. They say, that the *Betta*, or high place, with its colossal image, were made by a certain *Chamunda Raya*, descended from whom were the nine *Belalla Rájás*. The first eight of these princes resided chiefly at *Hully-bedu*. The 9th lived at *Tonuru*, and changed his religion to become a worshipper of *Vishnu*. I have already given the history of his conversion, according to the *Bráhmans* of *Tonuru*. I shall now relate what the *Jain* say on the subject. This prince had become enamoured of a dancing girl, who, having been educated in the temples of *Vishnu*, had a great respect for the *Brahmans* that follow the doctrines of *Vyasa*. This prostitute one day artfully upbraided the king, by saying that his *Guru* would not receive any thing out of his hands. The king insisted that the *Guru* respected him more; and at length it was determined, that if the *Guru* accepted the present of the king, then the favourite should change her religion; but if the present was rejected, that the king should receive the *Sri Vaishnavam Bruhmans* as his spiritual guides. On the first visit that the *Guru* made to court, the matter was decided. The king had lost a finger; and it being an abomination with the *Jain Bráhmans* to take any thing from the hands of a mutilated person, the offerings of the prince were rejected with obstinacy. The king then, according to his promise, destroyed all the *Jain* and their temples, and, having taken the name of *Vishnu*

CHAPTER XIX

May 19.

Verdana, built many temples in honour of his new god. Among these is that at *Bailuru*, which, according to an inscription already mentioned, was built, or repaired, in the year of *Sal.* 1039, which must have been after the conversion of this prince.

The *Jain* of this place differ considerably from those of *Tulava*. They deny that the *Bunts* of *Tulava* are *Sudras*, and say that they are *Vaisyas*. They will not indeed acknowledge that any *Sudras* belong to their sect. A person of any of the three casts into which they are divided may become a *Sannyási*, or act as a *Púját*. The office of *Puróhita* only is exclusively in possession of the *Bráhmans*. The *Jain* originally inhabited all the six *Khandas* of the world. This, in which we live, is *Aria*, or *Bharata-khanda;* and at present few *Jain* remain in it; but there are still many in two *Khandas*, named *Puruovideha*, and *Aprovideha;* which, they say, mean the east and west. They judge of these places from their books; for they have had no communication with the *Jain* there, nor can they give any geographical account of their situation. The books in highest authority among the *Jain* are called *Sara*, and they are three in number; the *Gomuta*, the *Triloca*, and the *Lubda Saras*. These they consider as holy, as the other *Bráhmans* do the *Vedas*. They were composed by *Ady Brahma*, or *Adyswara*, one of the perfect beings who has become a *Sidaru*, and who must not be confounded with the *Brahma* of the followers of *Vyasa*, who is looked upon by the *Jain* as a *Devata* only, and is the chief servant of *Gomuta Ráya*. Next in authority to the *Saras*, is a commentary on them in 24 *Puranas*, or books, composed about 1700 years ago by *Jenaseanu Acharieru*, a *Sannyási*.

My eyes now became so very painful, that I could bear the light no longer. I was obliged to leave this place, therefore, with a much less perfect knowledge of its antiquities than I could have wished; and I proceeded to *Seringapatam*, where I continued some days in great pain, and unable to read or write. By the way I passed one night at *Sindy-gutta*, and another at *Tonuru*. At this last place I

obtained from the *Bráhmans* an extract from a book called *Guru Para*, written by *Rám'Anuja Achárya*, partly in *Sanskrit*, and partly in the *Tamul*. The words of the former in the *Grantha* character, those of the latter in the *Arabi*, or vulgar letters. This extract, of which a copy has been delivered to government, contains a life of this extraordinary personage; who, according to his own account, was born in the year of *Sal.* 939. It is therefore certain, that both he and his convert, *Vishnu Verdana*, must have lived to great ages; as the king would appear, from the inscriptions above mentioned, to have been living in the year of *Sal.* 1050. June 2. *Rám Anuja Achárya*

3d *June.*—My eyes having now so far recovered as to allow me to write, I resolved to set out on my return; and accordingly sent my tents a little way, intending to sleep at them, and in the morning to proceed; but in the afternoon there came a severe storm of thunder, wind, and rain, which kept me another night with my kind and hospitable friends in *Seringapatam.* June 3.

During my stay there, I procured the *Caneh Sumareh* of the *Mysore Rájá's* dominions. It contains a list of villages, public edifices, houses, families, ploughs, and a few other particulars, with a classification of the inhabitants in each *Taluc*, or district. In this, due attention is neither paid to cast nor possession; nor can great reliance be placed on the accuracy of its statements. I have, however, thrown as much as relates to the population and stock into the form of a table; as a nearer approximation to the truth than any that has been yet given. *Caneh Sumareh of Mysore.*

CHAPTER XIX.

June 3.

Abstract of the Caneh Sumareh of the Territories belonging to the Rájá of Mysore.

*Taluc*s in the *Chatrakal Ráyada.*	Families.	Houses.	Ploughs.
Kasba Chatrakal	3824	3859	1330
Onaji	2014	2043	1338
Mola-calu-muri	1510	1533	669
Mahi-conda	2995	3080	2417
Heriuru	2305	2403	2224
Gudi-cotay	2967	3019	1620
Canacupay	2918	3072	1915
Bhima-samudra	1186	1382	602
Tulloc	1656	1645	903½
Holalu-caray	2143	2414	1528
Doddery	2297	2297	1144
Muteodu	1355	1409	994
Hosso-durga	2109	3164	3021
	29289	31320	19705½

*Taluc*s in the *Nagara Ráyada.*			
Hyder Nagara Kasba	4870	4960	2696
Shiva-mogay, or Shimogay,	5368	5368	3209
Surabha	1584	1584	1055
Chandra-gupti	3119	3150	1302
Tavamundy	1354	1455	904
Ananta-para	1896	1899	1303
Honali	2963	2973	2305
Holay-honuru	3219	3219	2413
Udaguni	4452	4452	3098
Shikári-pura	3760	3768	1931
Ikeri and *Sagar*	4691	4691	3365
Cumashi	3091	3585	1649
China-giri and *Baswa-pattana*	9071	9071	6224
Daniwasa and *Lacky-hully*	4138	4138	2582
Hari-hara	1931	2164	1011
Holalu	595	700	321
Copa	6612	6612	3944
Anawati	3544	3544	2138
Cowl-durga	6615	6615	5017
	72873	73948	46467

June 3.

Tulucs in the *Pattana Ráyada.*	Families.	Houses.	Ploughs.
Mahásura Nagara	5653	5748	3352
Mahásura Ashta-grám	4527	4527	2280
Pattana Ashta-grám	5075	5075	3078
Hardena-hully	3701	3701	1592
Bucana-caray	1512	1394	1098
Bettada-pura	3252	3105	2500
Taiuru and *Moguru*	5054	5056	2770½
Arculagodu Conanuru	4416	4337	3707
Nunjinagodu	963	960	445
Edatory	2188	2188	1678
Priya-pattana	2507	2431	1569
Goruru	2627	2612	2473
Kanyakarna-hully vulgo *Cancan-hully*	3728	3633	2996
Honganuru	1186	1186	513½
Ellanduru	2652	4464	829
Callalay	3893	6265	1999
Ki-caray	2079	2114	1664
Cayragodu	4731	4932	2708
Sosila and *Talacadu*	4204	4324	2338
Gundal and *Tirucanambi*	7025	7235	3914
Capala-durga	583	604	453
Tonuru and *Mail-cotay*	3153	3196	2385
Mahá-ráyana-durga	2071	2071	1136
Malawully	4033	4075	2743
Cuttay Malalawady	2142	2162	1481
Cotagala	1589	1590	1050
Hegodu-devana-cotay	6251	6251	4123
Sali-gráma	1177	1261	1015
Narasingha-pura	5664	5893	3448
Maduru	4415	4415	2621
Deva-Ráya-Durga	5359	5364	4052
Budhi-cotay	2971	4347	2297
Ercalwy	2873	4432	2089
Magadi	4426	4326	3522
Sunacul	1092	1557	687
Silagutta	5566	7848	3729
Devund-hully	4449	4976	3857
Bhairawana-durga	934	934	931
Coruta-giri	2092	2182	1152
Total carried over	131813	142771	86275

CHAPTER XIX.

June 3.

Pattana Ráyada continued.	Families.	Houses.	Ploughs.
Brought over	131813	142771	86275
Chin'-ráyan'-durga	2399	2849	1858
Chica Bala-pura	5503	8184	3652
China-pattana, vulgo *Chenapatam*	5069	4950	3514
Colar	7059	10209	4922
Hosso-cotay	8408	14681	5666
Madhu-giri	4803	4950	2540
Pauguda	4452	4981	1596
Ambaji-durga	5188	8472	3574
Hulicullu	923	1251	796
Nidjagul	3146	5165	2807
Nellavungul	2766	4498	2416
Gudibanda	4160	4879	2346
Anicul	2484	4147	1599
Doda Bala-pura	7166	10187	5201
Hangaluru	11532	17506	8245
Mahá-káli-durga	1766	2320	1497
Jangama-Cotay	2684	3909	1596
Guma-Naiada-Pallia	3187	4147	2005
Malavagul	7623	10012	5990
Rama-giri	1757	1798	1905
Huliuru-durga	4803	4803	3394
Tayculum or *Maluro*	5988	8783	4081
Tamcuru	3855	3840	2854
Honawully	3492	2664	4545
Budihalu	1598	2181	1130
Niddygul	2598	2601	1207
Sira	6673	6593	2756
Nughi-hully	1786	1786	1416
Caduba	3992	3998	3336
Bailuru	7447	7447	5741
Gubi	1237	1319	781
Gráma	1817	1881	1609
Hebburu	2754	4131	2122
Garudana-giri	1449	1673	1103
Banawara	2483	2611	1875
Sakra-pattana	2270	2265	1526
Turiva-caray	3758	4782	2658
Hárana-hully	2598	3071	2280
Chin'-raya-pattana	3684	3994	3731
Cunda-Caray	1481	1483	1216
Carried over	289551	343772	198341

Pattana Rayada continued.	Families.	Houses.	Ploughs.
Brought forward	289551	343772	198341
Belluru	2329	3315	1919
Cunigul	3604	3716	2357
Chica-Náyakana-hully	2266	2461	1697
Naga-mangala	4268	4992	2963
Hasina	4505	4459	3484
Hagalawadi	5832	7317	3878
Wostara	3013	3013	2317
Ajim-pura	3536	3855	3011
Terri-caray	3422	3606	2333
Chica Moguluru	4893	5175	3528
Caduru	1782	1833	1106
Yagati	2128	2638	1708
Total	331129	390152	228642

Recapitulation.			
13 *Talucs* in *Chatrakal Rayada*	29289	31320	19705½
19 Ditto in *Nagara Rayada*	72873	73948	46467
91 Ditto in *Pattana Rayada*	331129	390152	228642
Total	433291	495420	294814½

History of the *Mysore Rájás.*

I also procured from my friend Captain Marriote a history of the *Mysore Rájás,* which the present *Dalawai* composed in the *Marattah* language. A copy has been presented to the government of Bengal.

Seringapatam I found recovering apace. Some more openings for parades, and other public uses, have been made in the town; but it still continues to be a sink of nastiness. The suburb called *Shahar Ganjam* is increasing rapidly, and care has been taken to form the streets wide and straight. A new magistracy has just now been established, under the superintendance of Captain Symmonds, an establishment that was much wanted; for the officers of the garrison have neither time nor inclination to investigate civil affairs. Provisions are good, and, bread excepted, are cheap. Artificers have

CHAPTER XIX.

June 3.

been assembled, and are now busy in preparing military stores; such as gun-carriages, leather accoutrements, tents, and cordage of the aloe leaves (*Agave vivipara*). This employs many people, and will turn out a great saving to the Company. Trade is beginning to be restored, and considerable quantities of the produce of *Malabar* again pass this way. The lands are increasing in value; and people, who had formerly deserted to adjacent districts, are now returning, and with the utmost eagerness are reclaiming their former possessions. This climate, however, continues to be very unhealthy; and a damp is thrown on every thing by the sickness of the Resident, Colonel Close. Owing to this, I have been much disappointed by not receiving any answers to the queries which I proposed.