

CHAPTER XI.

THE PUBLIC WORKS DEPARTMENT.

The Range Officers—The military buildings—The Cutcheries—The Public Bungalows—Irrigation Works—The Tángabudra anicuts and channels—The principal tanks.

The projects of Bukkacherla, Ruddam, Hindipúr, Bomanahalli and other minor works—Proposed works of the Irrigation Company.

THE senior district Officer in this department is the Superintending Engineer, who has also charge of the adjoining districts of Cuddapah and Kurnool. For executive purposes the district is parcelled out into ranges, as shown below :—

- No. 1 range.....Cantonment and Military Buildings.
- No. 2 „Hospett, Kúdlighi, Harpanhalli, Hadagalli.
- No. 3 „Bellary, Raidrúg,
- No. 4 „Gooty, Tádpatrí, Alúr, Adoni.
- No. 5 „Anantapúr, Dharmaveram.
- No. 6 „Pennakonda, Hindipúr, Madaksira.

An Assistant Engineer is in charge of two of these ranges, and supervisors of the other three. Under them there is an overseer in each taluq. An Executive Engineer has charge of No. 1 range.

An account of the operations of the department will be given under the three heads of,

- I.—Buildings.
- II.—Irrigation Works and Channels.
- III.—Roads and communications.

I. Buildings.—The military buildings are naturally confined to the Cantonment of Bellary. The finest is the European General Hospital, built about 10 years ago. The lines for the European regiment and for the artillery are also new. The arsenal in the fort has recently been enlarged and otherwise improved.

The civil buildings are the cutcherries and courts. A new Sessions Court has been commenced, and is half-completed. A new cutcherry for the Collector has been sanctioned, but no commencement has yet been made. The present cutcherry is a commodious upstairs building, conveniently situated. The Sub-Collector and the Deputy Collector have no cutcherries, they hold office in native houses hired for the purpose.

Most of the taluq cutcherries are in a semi-ruined state. Those at Anantapúr, Harpanhalli and Adoni have fallen down and others will soon do so. Cutcherries on the old standard plan have been built at Hospett, Hadagalli and Alúr.

The District Munsiffs of Bellary and Narayanadeverkerra have tolerably good court houses. The Munsiff of Anantapúr is accommodated in a back room of the old Sub-Collector's cutcherry, his own court at Kalyandrág having fallen down. The courts of the Purgbi and the Gooty Munsiffs were in ruins some years ago and have been abandoned. There are 19 public bungalows.

No.	NAMES OF ROAD.	PLACES WHERE BUNGALOWS ARE.
1	Bellary—Bangalore.....	* Bellary, Hiréhal.
2	Do. Dharwar.....	* Gadiganúr, *Hospett, *Ballahunsi, *Hampsagra
3	Do. Adoni.....	* Alúr.
4	Bangalore—Secunderabad.....	Pálsamudram, Pennakonda, Chennakotapalli, Marúr, Anantapúr, Garáidinna, *Gooty.
5	Bellary—Cuddapah.....	*Permadavenhalli, *Gadakai, *Patakotacheruvu, Rayelcheruvu, Tádpatri.

Of these only those marked with a star are fully available for travellers. The bungalow at Rayelcheruvu has been given up to the Sub-Magistrate stationed there. Those at Tádpatri and Hiréhal have been given to the Public Works Department, on the condition that one room is to be reserved to district officers on circuit. The Assistant Superintendent of Police and the Head Assistant Collector have been permitted to use the bungalows at Anantapúr and Pennakonda for their private residences.

The furniture and servants have been removed from the bungalows on the road from Bangalore to Kurnool and Secunderabad. Since the opening of the railway this route has not been taken.

Besides those enumerated above, there are bungalows at Honnúr, Gollah, Perúr and Kogira on the original Bangalore road. These have been deserted for many years, but are still habitable. There is a bungalow at Madaveram, on the river Túngabadra, and a small house (called the Collector's) at Harpanhalli.

II. Irrigation Works.—“The district of Bellary is almost bountifully supplied with rivers and tributary streams for the irrigation of its soils. It certainly does not possess the advantages inherent to a district situated at the delta of an important river on the sea-coast,

but it contains within itself all the essential elements of prosperity. The rivers and streams which intersect it might be taken advantage of to a much larger extent than now for the supply of works of irrigation." (*Report of Colonel Henderson, Civil Engineer, 21st November 1853.*)

The principal river the Túngabdra, which is also the most valuable stream on account of its perennial flow of water, has now nine anicuts used for irrigation. There are also the remains of three anicuts at Moodelhutti, Soogoor and Mancherla. The first and third are supposed to have been commenced under the former Hindu government, and to have been left unfinished on account of political disturbances. Regarding the one at Mancherla, Colonel Henderson has recorded that it is in good order and principally wants an irrigation channel.

The next largest rivers are the Pennér and the Haggari, and though they have not flowing streams in the dry season, as the Túngabdra has, their freshes bring down large volumes of water, which it is the more important to store by means of anicuts and reservoirs, because these rivers flow through a barren portion of the district which is peculiarly exposed to suffer from drought.

Respecting that 'more favorably situated river the Pennér, Colonel Henderson says "for the whole of its course in the Bellary district (100 miles) it ought to be considered the main irrigation channel of the plain through which it flows. The construction of four or five anicuts across its bed with the necessary auxiliary works, would change the character of the district and diffuse happiness and plenty where there is now but misery and starvation, and all this could be accomplished by the judicious expenditure of five lakhs of Rupees. There is one work deserving immediate attention. It is for the construction of an anicut across the Haggari to supply the Kanakal tank and irrigate a large area in the Raidrúg taluq at a cost of Rupees 88,000. The Raidrúg taluq, formerly very prosperous, has fallen off in cultivation and revenue to a striking extent.

The Pennér has already been sufficiently examined to ascertain that suitable places for the construction of anicuts are to be found at Hindipúr and Ruddam.

Several minor rivers, the Chittravatti, the Hindri, the Chinna Haggari might also be turned to valuable use." (*From Mr. Maltby, Commissioner, 10th October 1854.*)

The chief irrigation works are the channels from the Túngabadra river.

The first anicut on this river in this district is the one near the village of Valabapúr. It is in two branches with an island between. The portion between the right bank of the river and the island is called the Valabapúr anicut, and that between the island and the left bank the Korragal anicut. The former of these is a reconstruction on improved principles of an old native work. The old work consisted of loose masses of stone put together without any cement, and as some of the stones yielded to the force of the stream each year, an annual outlay was incurred. An estimate providing for its reconstruction in solid masonry of stone in chunam was sanctioned in 1846. The actual cost was Rupees 26,000. The revenue has not been increased since the construction of this anicut, but has been secured. It is 994 feet in length, $5\frac{1}{2}$ feet broad at the top, perpendicular in the rear, and with a slope of about 1 to 2 feet in front. It has a body of roughly dressed stone with a coping of cut-stone. The slope in front is of brick in chunam and plastered. About 50 yards up the stream are the remains of the old anicut. An old stone near records that it was constructed in S. S. 1443 = A. D. 1521 by Krishna Rayel of Vijayanagar, a contemporary of our Henry VIII. The old anicut therefore lasted 330 years, having been constructed when such works were probably unheard of in England (*Public Works Report of 1851*). The Korragal anicut is about 400 yards in length, and is old rough stone native work, slightly convex towards the stream. The *Buswanna* channel turns out of the river about 550 yards above the Valabapúr anicut, and runs in an easterly direction but with several large curves to the village of Amravatti. Its length is 24,000 yards.

2. *The Ramanagadda anicut.*—This is at the upper end of the island of Kúravagadda, and extends across the western branch of the river to turn the water into the eastern. It is an old rough stone anicut, and in constructing it advantage has been taken of the numerous rocks in the bed of the river. It runs right up the stream for about 150 yards and then turns at right angles over to the left bank.

3. *The Kúravagadda anicut* is across the eastern branch but lower down. It is built close to the village of Hosskota, and about 3 miles from the Ramanagadda anicut. It is of rough stone concave towards the stream.

The Roya channel is turned out of the river a short distance

above this anicut. Its course is very tortuous, and it winds in and out for 217 miles at last ending in the Kamlapúr tank. The direct distance from the head of the sluice is about half this length. Length, 30,557 yards.

3. *The Bella anicut.*—This is just above the village of Hossúr. It is an old native work of rough stone concave towards the stream, and only extends from the right bank to an island in the river. At the south of this island there is a ledge of rock forming a natural anicut. The Bella channel is very short, and after $4\frac{1}{2}$ miles it divides into a number of small channels which the ryots look after. Length, 12,640 yards.

4. *The Tooroot anicut.*—This runs across the river about one mile west of the old city of Hampi, and is formed of a number of bits of masonry connecting islands and rocks. The channel taken from it winds about very much, especially where it passes through Hampi and varies a great deal in width. Length, 18,405 yards.

5. *The Ramsagra anicut.*—This old rough stone dam runs diagonally up the river close to Bukkasagra. It merely connects islands and rocks. The length of the channel taken off this anicut is $9\frac{1}{2}$ miles, at first it is tolerably straight, then it follows the course of the hills, and after passing Ramsagra becomes very tortuous. Length, 13,240 yards.

6. *The Kampli anicut.*—This runs diagonally up the stream for some distance and then crosses over to the left bank at right angles. Like the two last it consists of detached pieces connecting islands and ledges of rock. The course of the channel is very tortuous. Length, 22,937 yards.

7. The Bellegodihall channel is formed of the waste water of the Ramsagra and Kampli channels.

8. The Desanúr anicut and (9) the Siragúpa anicut, are in the north of the Bellary taluq. The bed of the river here is full of rocks and islands which have been joined together by detached bits of masonry work, so that there are in reality about 30 small anicuts.

9. The last anicut is at Túmbiganúr in the Adoni taluq and the channel taken off from it, and usually called the Rampur channel is seven miles long.

All these anicuts were built under the old native princes except the new one at Valabapúr.

The total length of the nine channels is $89\frac{3}{4}$ miles. 124 Nirguntis (water-distributors) are employed, who are paid by Inam lands and fees, the value of which is stated to be Rupees 3,644, but deducting quit-rent Rupees 1,089, there remains only Rupees 2,555 for their maintenance, or on an average Rupees $20\frac{1}{2}$ to each man per year, which is of course quite inadequate.

The principal tanks in the district, with their ayacut, and the amount of revenue depending on them are shown in the following table. For convenience the same particulars for the Tungabadra channel have been included. The figures are for Fasli 1277 :

TANKS.	CIRCAR.		INAM.		Average cultivation in Acres.	Assessment including Fasli jastl.
	Acres.	Assmt.	Acres.	Assmt.		
		RS.		RS.		RS.
1.—Bukkapatnam	2,779	16,741	727	5,487	1,506	12,335
2.—Singanamalla.....	1,929	9,959	1,119	8,170	1,451	11,078
3.—Purghi.....	2,349	9,188	499	2,372	2,092	9,341
4.—Anantapúr.....	2,475	11,241	321	2,317	916	5,294
5.—Kanakal.....	2,186	10,309	339	2,230	1,280	8,217
6.—Daroji.....	1,529	6,805	70	247	6,744	6,808
7.—Dharmaveram.....	773	4,697	724	5,693	5,237	7,234
8.—Tungabadra channel.	10,825	91,834	4,779	39,163	10,502	1,27,937

At various times projects have been put forward adding to the irrigation of the district by fresh works. Of these the chief are known as the projects of Bukkacharla, Ruddam, Hindipúr and the Haggari river.

The *Bukkacherla project* consists of the construction of an anicut 12 feet high across the bed of the river Pennér near the village of Trimani in the Mysore country, and of the excavation of a canal, eighteen miles in length, and fifty-two yards broad with an average depth of seven feet of water. This canal turning off from the right flank of the anicut, will, it is estimated, be sufficient to carry half a million of cubic yards of water per hour into a natural water-course which now forms one of the channels of supply for the Anantapúr tank, and is called the Badrapúr nullah. In its course the canal would feed the Kondapúr and Perúr tanks, both of which would be enlarged and improved. An anicut is to be built across the Badrapúr nullah near Palcherla, and by this means as much water as might

be required would be thrown into a reservoir of great capacity which it is proposed to form at the site of the Bukkachera tank where great natural facilities for the construction of a bund exist. This reservoir will have two waste weirs or calingulabs, one of which will discharge the surplus water into the supply channel of the Anantapur tank, while the other will feed the channel supplying the great Singanamalla tank, which at present passes to the north of Anantapur. Other smaller tanks would be supplied by sluices in the bank of the eighteen mile channel.

The cost of carrying out these works is estimated at Rupees 13,51,500. The expected increase in the revenue is shown below:—

	Description of Land.	Acres.	Increase Revenue.
			RS.
1.—The Bukkachera Reservoir.....	All Waste.	10,690	42,760
Second crop.....		.....	10,690
2.—Under the 18 mile channel.....	All Waste.	138	552
Second crop.....		.....	138
3.—Kondapur Tank, (including 2nd crop).....	Existing Aya-cut.	60	330
4.—Anantapur Tank.....		.....	5,000
5.—Singanamalla Tank.....		.....	5,000
6.—Minor Tanks, (Perur, &c).....		.....	2,400
			66,878
			2,000
			64,878
			64,878

This return represents 4.79 on the outlay.

2. *The Ruddam Project.*—The object of this is chiefly to supply the Ruddam large tank by a channel which it is proposed to lead from an anicut to be built across the Pennér river about two miles below where it is joined by the Jimangle. The length of the channel will be rather more than six miles by 15 yards broad with an average depth of from 3 to 4 feet of water. It will pass above the tanks of Kalpi, Kottapalli and Nallur, and Cholmari and greatly improve their supply. When the Cholmari tank is filled its surplus water will be discharged into the Ruddam large tank. 1,344 acres

will be brought under cultivation, on which if a rate of Rupees 5 is charged, the

Revenue will be.....	Rupees 6,720
Add the difference between the highest revenue and the average of the last 20 years.....	„ 2,385
Total increase... „	9,105

The amount of the estimate is Rupees 1,03,220, and the expected return is therefore 8 per cent. on the expenditure.

3. *The Hindipúr Project.*—This work consists of a channel to be taken from the Pennér river by means of an anicut to be built across the river near Santa Bidalúr. The channel will be nearly 11 miles long by 15 yards broad, and will have an average depth of four feet. It will pass above and benefit by sluices the tanks of Yerrakerra, Basvanahalli, Suddlapulli, Hindipúr, Sricuntapúram, Púlkunta, Cuggul, Kalkunta, Kottanúr, and will finally end in the Ootacoor tank.

The object of the work is to secure to these eleven tanks a regular supply of water, the present supply from a limited drainage area being very precarious. The increase of revenue expected is as follows:—

356 acres of waste at Rupees 4 per acre and Rupees 2 for second crop.....	Rupees 1,780
Difference between the highest revenue and the average of the last 20 years.....	„ 9,126
Total Rupees...10,906	

This represents a return of 6.19 per cent. on the outlay which is estimated at Rupees 1,76,270.

Bomanahalli project.—The design of this work is to form near the village of Bomanahalli (Kúdlighi taluq) at a cost of 5 lakhs a reservoir capable of storing sufficient water to irrigate 64,000 acres. This water is to be distributed by two channels (the project of the high level canal originally proposed having been abandoned) to the lands lying below the reservoir. “Whatever may be the amount of the water thus stored, its practical value is limited by the quantity of suitable land available for cultivation. The Head Assistant Collector thought that not more than 20,000 acres could be brought under cultivation. This at Rupees 4 per acre, the average rate, would be Rupees 80,000, and supposing a moiety of the land to yield a second crop, the total yearly revenue derived from the reservoir

would be one lakh. But all this land could not be brought under cultivation for some time, for the population is too scanty and their capital is insufficient. Against this must be set off the immediate payment of Rupees 42,946, being the value of houses, temples, &c, in the villages of Chenampalli, Bomanahalli and Hirahadagalli. The assessment on lands submerged is Rupees 3,375, and more than this would have to be given in compensation unless the ryots agreed to take other lands on short cowle, and it was doubtful if such lands could be found. (*From Board's Proceedings, 19th December 1861.*)

Pinnapalli tank.—This tank is about two miles from Yadiki, Tád-patri taluq. It breached about fifty years ago. The ryots are anxious for its restoration, and though the estimates have not been prepared, the range officer considers that the project is a decidedly good one.

Near *Uravakonda* there is a very large breached tank, which seems deserving of repair.

Though not in any way connected with the Public Works Department, of whose operations this chapter treats, this seems to be a suitable place for an account of the projected works of the Irrigation and Canal Company. This account was kindly furnished by Mr. Gordon, Deputy Chief Engineer, to the Company.

“There have been two schemes proposed for the Irrigation of the Hospett and Bellary taluqs, viz:—

1. A canal taken from the Túngabadra river at Valabapúr and * passing on the north of Hospett was to cross the hills near Daroji by a deep cutting not far from the village of Nellapúr, and was then to pass through the hills at the end of Daroji tank by a tunnel 450 yards long. The line of the canal then kept round Daroji tank at about 40 feet above the level of its waste-weir, and after turning the hills at the east end of the bund kept a tolerably straight line to Bellary, which it reached at such a level as to command all the Cantonment and Staff lines and consequently also the town. This scheme I finished in 1867. It was said that the heavy works, such as tunnels and cutting in the Daroji range should, if possible, be avoided, and I accordingly in 1869 sent in a second scheme for the irrigation of the two taluqs.

2. In this the canal leaves the Túngabadra at Hossúr and passes round the hills to Mettri, instead of through them, and crósses the drainage of the Daroji tank near the bund at a level of 45 feet above the waste-weir. From this point it follows a course similar to that of the canal first proposed though rather more winding till it reaches

the Bellary Cantonment. It is continued beyond Bellary in a southerly direction past the village of Ibrahimpúr to Bundúr on the Chinna Haggari river.

The first of these schemes was estimated to irrigate 150,000 acres at a cost of about Rupees 77·5 per acre. The second is designed to irrigate 212,500 acres and will cost Rupees 59 per acre. At one time it was proposed to produce the Valabapúr canal across the Haggari into the taluqs east of that river, but it may be assumed that this project is definitively abandoned. The navigation of these canals has also been considered, and it has been shown that in either case it could be established between Daroji and Bellary at a moderate cost. These schemes constitute what is usually known as the Lower Bellary project.

II. It is also proposed to take a canal from the Túngabadra river at Tumbiganúr near the railway bridge to Kurnool, irrigating 55,000 acres at a cost of about Rupees 77½ per acre. This could also be made navigable and in that case a branch would be made from Bellary first in a northerly direction, and then crossing the Haggari at Siragupa; it would join the last-mentioned canal at its head, thus acting as a feeder to the railway at two points, Bellary and Kachapúr. For the present only the irrigation schemes are before the government. In connection with these canals investigations are in progress with a view to storing water during the monsoon so as to supply it to raise a second crop."

The account is fitly followed by an extract from a letter written by the Collector on 25th July 1866:—"The estimated amount for these works is (without considering the reservoirs for the second crop) 95 lakhs of Rupees or under a million sterling. The interest on this sum if guaranteed by Government at 5 per cent., would amount to Rupees 4,75,000 or £47,500. In this district in 1854 there was actually lost about four times that amount, viz., by hurried expenditure on famine roads £130,000, and by remission on waste lands £60,000, to say nothing of the loss to the people of their crops and cattle."

III. **Roads and Communications.**—Seventeen years ago Mr. Maltby, Famine Commissioner, wrote: "This large province with an area of 13,000 square miles and a population of 122,599 souls possessed until the present year no arched bridges, and only 13 miles of made road," (10th October 1854). A year before the Chief Engineer, Colonel Henderson, had reported, "Roads there are none deservng the name. There certainly are tracks through some parts

of the district marked out by aloe and milk-bush hedges, but from want of bridges and drains these tracks are divided into isolated portions by the rivers and nullahs that intersected them. At present there is not a single arched bridge available for travellers throughout the district though it is intersected by rivers and streams in every direction. The district is actually locked up from the surrounding provinces and without means either for the export of its produce or for the introduction of European articles of commerce," (21st November 1853.)

I have tried to ascertain what amount has been spent on roads since this date from Imperial and Local Funds, but the Collector and Superintending Engineer say that the necessary information *cannot be obtained. I am therefore able to give only a simple list of roads, with brief notes of their condition. Some of the roads entered in the list have not yet been commenced, others are more complete, many finished and bridged throughout. The first seven were formerly classed as "Imperial," but there is now no distinction between Imperial and Local roads.

Number.	From	To	Miles.	Remarks.
1	Bellary.....	Alúr.....	27	In fair order. No. 1 bridged throughout. Two nullahs at 16th and 17th miles impassable in the monsoon. Alúr.*
2	Alúr.....	Asperi.....	14	Continuation of No. 1 goes on to Kurnool.
3	Bellary.....	Sovainahalli.....	72	Leads to Bombay Presidency. Bridged as far as Ballahunsi Kodutanni,* Gadiganúr,* Hospett,* Ballahunsi,* Hampsagra.*
4	Tornagal.....	Ramandrúg.....	20	Turns out of No. 3 at Tornagal, and leads to the Drúg, through the territories of the Sandúr Rajah, Yettinhatti.*
5	Hampsagra.....	Hollal.....	32	Estimated for only viâ Hadagalli for Kúmta and West Coast.
6	Bellary.....	Dampetla.....	86	Trunk Road No. XVIII Unfinished between Joladarashi and Uravakonda, and between Anantapúr*and Dampetla.
7	Mysore frontier near Kodikonda.	Kurnool frontier near Gooty.	107	From Bangalore to Kurnool and Secunderabad. In good order, and most of the nullahs are bridged. Pálsamudram,* Pennakonda,* Chinnakotapalli,* Marúr,* Anantapúr,* Gárdinna,* Gooty.*

Number.	From	To	Miles.	Remarks.
8	Hadagalli.....	Harpanhalli.....	16	Joins the Cusbah of two Taluqs and meets No. 5.
9	Gavuripúr.....	Hurryhúr frontier	57	Leaves No. 3 at Gavuripúr, three miles beyond Hospett, and goes viâ Harpanhalli and Tellighi.
10	Harpanhalli ...	Hollal.....	18	To Kumpta and West Coast.
11	Harpanhalli ...	Kudlighi.....	28	Viâ Kottúr.
12	Kottúr.....	Ujini.....	10	Nos. 12 and 13 are branches from No. 11, leading to the South of the Taluq.
13	Kudlighi.....	Hosshalli	19	
14	Kudlighi.....	Somalapúr... ..	13	To be continued through the Kanavaballi pass into Sandúr territory and to join No. 4. A short route from Western Taluqs to Bellary.
15	Kudlighi.....	Ulavasangatahalli.	23	Viâ Gudikota. Between Kudlighi and Gudikota the road is good. The continuation to the old Bellary-Bangalore road, (see No. 41) is not so good.
16	Kudlighi.....	Gavuripúr... ..	23	Under construction.
17	Ramandrúg.....	Ballahunsi... ..	16	One of the three Drúg gháts. Leads from the Drúg to No. 3.
18	Ramandrúg	Hospett... ..	11	Another ghát to the Drúg.
19	Hospett... ..	Kampli... ..	19	Very fair the whole way.
20	Hospett... ..	Hossúr... ..	4	For Lingasugúr and the Nizam's country.
21	Kodutanni... ..	Kampli.....	20	Viâ Daroji.
22	Kamlapúr.....	Daroji.....	14	Connects 19 and 21.
23	Bellary.....	Siragupa.....	32	Not completed, but available for wheeled traffic.
24	Siragupa.....	Adoni.....	23	In progress, but only just commenced.
25	Alúr.....	Adoni.....	16	Branches from No. 1 near Alúr.*
26	Asperi.....	Adoni.....	12	Connects Adoni with the Bellary-Kurnool road, (see 182) and also is a part of the road between Adoni and Gooty.
27	Adoni... ..	Madaveram.....	27	In good order and bridged, viâ Hire Túmbal and Madaveram.*
28	Adoni.....	Emmiganúr. ...	20	Little more than marked out. To be continued to Nagaldinna.
29	Halvi... ..	Kosji... ..	8	Nos. 29 and 30. Short Railway feeders are in progress.
30	Rachmarri.....	Kosji.....	7	

Number.	From	To	Miles.	Remarks
31	Alúr.....	Guntakal.....	20	Five miles from Alúr made. The rest traced.
32	Chippagiri.....	Maddikerra.....	4	A short line connecting these places with Nancherla station.
33	Bellary.....	Gooty.....	51	Is a portion of No. 6 from Bellary to Joladarashi (13 miles). From the constant heavy traffic is rarely in good order. Permadavanhalli,* Gadakal,* Patakotacheruvu.*
34	Gooty.....	Cuddapah frontier	38	A continuation of No. 33. In bad order near Tádpatrí.*
35	Gooty.....	Erragudi.....	7	To Adoui (43 miles) but the greater portion is in Kurnool district.
36	Guntakal.....	Uravakonda.....	18	Traced.
37	Rayelcheruvu.....	Yadikí.....	3	A branch from No. 34. To connect Yadikí with the Railway.
38	Anantapúr.....	Tádpatrí.....	33	In fair order, the middle the worst.
39	Piravalli.....	Dharmaveram.....	15	Marked out. A branch from No. 38 to Dharmaveram.
40	Bellary.....	Raidrúg.....	32	Leaves No. 41 about 8 miles south of Bellary. From the junction to Raidrúg, 24 miles.
41	Bellary.....	Hiréhal.....	14	The old Bangalore road. Completed to the frontier.
42	Bellary.....	Uravakonda.....	27	Viâ Rúpangudi and Havligi.
43	Bellary.....	Paughúr.....	61	Viâ Kalyandrúg and Kambadúr to the frontier of Paughur.
44	Raidrúg.....	Kudéru.....	43	Joins No. 6 about 13 miles from Anantapúr.
45	Raidrúg.....	Dharmaveram.....	65	From Raidrúg to Kalyandrúg (20 miles,) from Kalyandrúg to Kanagampalli, viâ Nutimadagu (30 miles), and Kanagampalli Dharmaveram, 15 miles.
46	Dharmaveram.....	Damajipalli.....	8	To connect Dharmaveram with No. 7. In good order.
47	Dharmaveram.....	Kottacheruvu.....	15	From Dharmaveram to No. 48.
48	Pennakonda.....	Pamdúrthi.....	34	From Pennakonda to Bukkapatnam, 16 miles, and then through the Otykanama pass viâ Pamdúrthi to the frontier of Cuddapah.
49	Pennakonda.....	Madaksira.....	20	Good, except a small portion passing through Mysore.

Number.	From	To	Miles.	Remarks.
50	Pennakonda....	Ruddam.....	11	Continued to Paughúr frontier.
51	Madaksira....	Amrapúr.....	26	
52	Madodi.....	Paughúr.....	17	Viâ Rollahalli.
53	Madagiri.....	Paughúr.....	8	Viâ Madaksira.
54	Madaksira....	Hindipúr.....	20	Viâ Purghi, gravelled.
55	Hindipúr.....	Somandapalli..	16	Meets No. 7, four miles below Pennakonda
56	Hindipúr.....	Chavulúr.....	7	To the Mysore frontier.
57	Hindipúr.....	Kodikonda....	23	
58	Kodúr.....	Kottacheruvu....	24	Connects Nos. 7 and 48. Meets No. 47 at Kottacheruvu viâ Peddapalli and Budali.
59	Budali.....	Gauniwarpalú....	11	For Kadiri, Cuddapah District.

CHAPTER XII.

S A N D U R E S T A T E.

(*Communicated by J. MACARTNEY, Esq., Agent to the Raja.*)

THE small State of Sandúr occupies a tolerably central position in the Bellary district, and lies in its extreme points between 14° 58' and 15° 12' 45" north latitude, and between 76° 28' 30" and 76° 43' 45" east longitude. Its area is estimated at about 140 square miles, of which probably considerably more than a third is hill territory. It is surrounded by a cordon of hills which completely isolate it from the surrounding district. In shape the valley is elliptical with a direction to the south-east. It is entered by three principal natural passes, viz., on the north-east by the Bhimagundi pass; on the north by the Ramanagundi pass; and on the west by that of Oblagundi, or Kannavihalli.

The Bhimagundi or North-eastern Pass.—The pass here is of considerable width, and the sides sloping and wooded: a little further on as they approach nearer, the sides become steeper and the bottom of the pass is encumbered by precipitated masses of rock. About the middle of the pass intersecting it at right angles, are two