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Public works DEPARTMENT.

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*Proceedings of the Madras Government, Public Works Department,
7th December 1868.*

No. 153. Read the following letter from the Officiating Secretary to the Commissioner of Mysore, Public Works Department, to the Secretary to the Government of Madras, dated Bangalore, 13th November 1868, No. 7,061-6,393 :—

In reply to your letter No. 3,445-32, of 3rd November 1868, on the subject of the completion of roads leading to the head of the Cooloor Ghaut, I have the honor, by desire of the Commissioner, to inform you that the subject of roads leading to the ghauts in the Nuggur Division of Mysore is now under serious consideration, and

Commissioner's letter, No. 2,193-57, dated 13th July 1868.

Major Sankey's printed Report, No. 2,588-271, dated 28th May 1867.

Captain Hay's Report, No. 90-6, dated 26th May 1868.

Government of India, No. 1,352 E, dated 2nd October 1868.

I am directed to forward, for the information of the Madras Government, a copy of the Commissioner's letter on the subject to the Supreme Government, covering reports from Major Sankey, R. E, and Captain Hay, Superintendent of Nuggur, on the same subject. The reply

from the Government of India is also sent.

From the Commissioner of Mysore, to the Secretary to the Government of India, Public Works Department, dated Camp at Bagapilli, 13th July 1868, No. 2,193—C. W. 57.

1. I have the honor to submit, for the orders of His Excellency the Viceroy and Governor General in Council, the

* From Chief Engineer, No. 2,588-271, dated 28th May 1867.

From Superintendent, No. 90-6, dated 26th May 1868.

From do., No. 134-14, dated 16th June 1868.

marginally noted* correspondence relating to the best means of improving the communications between certain fertile talooks of the hill country of the Nuggur

Division on the one side, and the Western Coast and the plain Talooks of Mysore on the other.

2. These letters will be found very interesting, and well worth perusal, while I find it impossible to condense the information given in them into a brief summary which might place the whole subject at a glance before the Government. Indeed, the question has occupied attention for more than thirty years, and although, owing to the construction of the Gairsoppa and Colloor Ghauts by Her Majesty's Government, and the Agoombe Ghaut by the Mysore State, trade has received a certain impetus; it must be admitted that much remains to be done, and that while a certain line of country has benefited, secluded talooks, such as Nuggur itself, are even worse off than before. The reason of this will be apparent on an inspection of one of the maps submitted by Captain Hay, which shows that, notwithstanding the existence of the three ghauts abovementioned, the country to the immediate north and south of these is so hilly and rugged, that the people find it more to their advantage to take their produce down the old precipitous passes near the heads of which their villages lie, than to attempt to cross the difficult ground intervening between them and the ghaut roads. This is a fact, to which I can bear personal testimony. It is equally certain, however, that it would be premature, if not inadvisable, to attempt to put in order all the old passes, down which a small traffic finds its way to the coast, and as the expense entailed in constructing ghauts

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is enormous, owing to the difficulty of the work, and the dearth of labour, it is essential to select that particular pass in the first instance which is most urgently demanded by the people, and in the formation of which, as a ghaut road, all parties agree.

3. There is no difference of opinion on this point, as the Chief Engineer and the Nuggur Superintendent, both consider that the Hydergurh or Hosungudi Ghaut, is that which should be taken in hand, and in this opinion I fully concur. In older times, this and the Bisli Ghaut were the principal passes to the Western Coast. Of late years the following made roads have been constructed:—

1. Gairsoppa or Mailmare,
2. Cooloor,
3. Agoombee,
4. Kodekul or Boond Ghaut,
5. Moonjerabad;

the first three being in the Nuggur Division, and the other two in the Ashtagram Division. As regards the latter Division, I am not prepared to say that anything further is required. The passes now brought to notice, which lie between the first three Ghaut roads, are—

1. Hinnee,
2. Govardbungiri,
3. Hoggawadi,
4. Carnec,
5. Hydergurh.

Of these probably the Hinnee and the Hoggawadi are the easiest, and the Hydergurh the most difficult; but many circumstances, mentioned by Captain Hay, combine to make it desirable that the Mysore Government should undertake the construction of this ghaut before any others. It will be seen that owing to the peculiar position of Nuggur, it stands at a great disadvantage compared with other talooks, being at present cut off from all approach by carts on every side save one, to which even access is difficult, and the consequence is that grain sells at half the price which it fetches below the ghauts, and that imports cost probably fifty per cent. more than they do in the adjacent talooks. The people complain loudly of their impoverished condition, and accuse the Government of neglect in not giving them those benefits of easy communication which have been extended to others in more favored positions.

4. Major Sankey's letter touches upon the wants of the whole Nuggur Division, comprising the Shemogah and Cuddoor districts, whereas Captain Hay confines his remarks to the former district only, being desirous of making more extended inquiries into the trade and resources of the latter. I need not, therefore, here enter in detail upon the requirements of Cuddoor, though I am quite in accord with the Chief Engineer, that a line from Harrihurpoor to Wastara would be of essential service, and that it should be undertaken as soon as circumstances will admit. Some useful work on this route has been done by the Deputy Superintendent, with a view of making it practicable by pack-bullocks, but nothing ulterior has hitherto been attempted. It is possible that a complete investigation of this part of the country by professional agency may affect the selection of the particular lines, by which the Nuggur produce should be taken eastward; but it is certain that

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in regard to the communication westward, the Hydergurh Ghaut is the crying want of the talook.

5. I think Captain Hay has shown in page 16 what lines might be most advantageously taken up in connection with this Ghaut, and that of Cooloor already open, viz.:—

1st.—A line from the Muddak tank beyond Shikarpoor, on the Bombay frontier, to the foot of the Hydergurh Ghaut; and,

2nd.—A line from Ayanoor, through the Musroor Hills, to be continued till it strikes line No. 1 at Cooloor Kutti, thus forming an approach to Nuggur, as well as a feeder to the Cooloor Ghaut. I concur in these proposals, which are shown in the map furnished by him. These lines, with the exception probably of the piece through the Musroor Hills, could be constructed by the Civil Officers, on the trace being approved by the Executive Engineer. The portion through the hills, as well as the Hydergurh Ghaut, would be carried out by the Public Works Department. The additional line, suggested by the Chief Engineer, from Nuggur southwards to Teerthulli, and thence to Harrihurpoor, might be taken up subsequently.

6. In paragraph 82 Major Sankey has laid down what I consider a necessary principle for constructing roads in the Mulnad or hill country, viz., that lines presenting no engineering difficulty should be dealt with from Local Funds, excepting, of course, important bridges; the actual ghauts and difficult portions of the road being left with the Public Works Department. I should not hesitate to ask the Government to allow me to supplement the Local Funds from State revenue should it be determined that the Civil Officers can economically spend more than the Local Funds will bear at the rate of 1,000 per mile for construction, given in paragraph 85, which seems to me a fair rate.

7. It is impossible, however, to give any accurate idea of the probable cost of the project mentioned above in paragraph 5, but it would perhaps entail an expenditure of 1,50,000, which is not a very large sum, considering the effect which the work would produce upon the district, and the benefit it would confer upon the people, who have not reaped the advantages derived by professional traders from the main lines of through communication.

8. In paragraph 87 Major Sankey adverts to some important considerations, which have my support: 1st, a special Officer will be required for tracing and estimating the lines, with one or two trained Surveyors; 2nd, for ghaut work special labor will be required; 3rd, some shelter should be provided for guarding against the climate which, at certain seasons, is extremely feverish; 4th, double travelling allowances should be given. The Chief Engineer has not exaggerated the difficulty in procuring labor and supplies; but I feel sure that, if the principle referred to in paragraph 6 is acted up to, the Superintendent will feel it both a duty and a pleasure to afford every possible assistance to the subordinates of the department, and will see that their comfort is duly provided for.

9. As it would be a work of supererogation for me to repeat what has been so ably put forward by the Officers whose letters I submit, I shall content myself with drawing attention to the maps furnished by them, and to the Trade Returns which Captain Hay has procured from the Collector of Canara. The question

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cannot be grappled with, unless the physical features of the country and existing communications are carefully studied; but I trust that the information now submitted will enable the Government to issue instructions for preparing the requisite estimates, when no time will be lost in getting the work put in hand.

10. The four accompanying maps to be obligingly returned.

From the Secretary to the Government of India, Public Works Department, (Establishment,) to the Commissioner of Mysore, dated Simla, 2nd October 1868, No. 1,352, E.

1. In continuation of Public Works letter No. 520 C, dated the 20th ultimo, regarding the proposals for improving the communications between certain talooks of the hill country of the Nuggur Division on the one side, and the Western Coast and the plain talooks of Mysore on the other, I am now directed to communicate general approval to the recommendations of the Chief Engineer, made in paragraphs 87 and 88 of his report, and referred to in paragraph 8 of your letter, No. 2,193-57, dated the 13th July last, viz:—

I. Appointment of a specially selected Officer with two thoroughly trained and trustworthy Surveyors, to trace and estimate the lines.

II. Introduction of early measures, both on the coast and in Mysore, for raising the requisite labor corps.

III. Erection of shelter at suitable places for all concerned, and adoption of every precaution for obviating the extreme unhealthiness of the climate.

IV. Grant of double travelling allowance and other reasonable indulgences to every man employed.

2. This approval must, however, be considered subject to orders on the formal applications that will, under the usual rules, have to be submitted for sanction, before they can be carried into effect.

3. I have also to state, that if it is desired to begin to entertain the labour before commencing the work, it will be necessary to submit an estimate or tabular statement for sanction.

No. 154. ORDER THEREON, 7th December 1868, No. 3,813.

CIVIL WORKS, No. 18.

Ordered to be recorded.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To The Secy to Govt

Exd. S. T. Augustin.

General No. 90. } 1868-9.
P. W. D. " 6 }

NUGUR DIVISION SUPT.'S OFFICE,
26th May, 1868.

To THE SECRETARY TO THE COMMISSIONER
OF MYSORE.

Sir,

In continuation of the correspondence noted in the * margin, I have the honor to report that I have completed a tour of inspection of the roads under construction by the Deputy Superintendent in the Shimoga District, in the course of which, I visited every talook in the district, proceeding also to Gairsoppa, Coondapoor, and Bydoor, examining the Gairsoppa, Govardanghery, Hinee, Colloor, Carnee, and Hyderghur Ghauts, and collecting information regarding the minor passes, which I did not personally visit.

2. I propose laying before the Commissioner, the conclusions I have arrived at regarding the communications of the Shimoga District alone, reserving those in the Cudoor District for future consideration, as I have not yet travelled over the principal line noticed by Major Sankey, viz., that from Hurihurpoor to Wastara.

It is scarcely necessary to state that the estimates for traffic, &c, do not pretend to accuracy, as they are based only on personal enquiries during a short tour, but I believe them to be sufficiently near the mark, to enable a judgment to be formed of the general direction of the traffic and relative importance of the routes.

To illustrate the statements, an atlas sheet, in which the roads recommended for construction are marked, is forwarded; in which have also been entered the principal roads constructed in the surrounding districts, from information received from the Collectors.

The minor roads in the Dharwar District have been omitted, but there is not much difficulty for carts to traverse that district in the dry weather.

The area in each talook principally contributing to the traffic on the different ghauts, is shewn approximately in a separate map of the Shimoga District.

3. The position of the Shimoga District, constitutes it both an exporting and importing country, and also a thoroughfare like Coorg, by which interchange takes place between the coast and the provinces still farther inland.

Towards the N. E., the district itself merges almost imperceptibly into a country of the same character as the neighbouring talooks of Dharwar; while on the W. and S. W., except in altitude, and the want of certain maritime products, it has, as regards climate and productions, much in common with N. and S. Canaras. In order therefore to obtain a complete view of the district, it is necessary to include such an extent of territory, as appears to be immediately in contact with it, and equally interested in the development of its communications. On consideration, I believe this area may be bounded by lines connecting the following points.—

Coompta and Dharwar.
Dharwar " Hurihur.
Hurihur " Mangalore.

and the coast line from Coompta to Mangalore.

4. I shall first notice the principal exports and imports of the district; to do which, the productions, and destination of the exports of each talook, with their imports, and the routes taken by the traders, will be briefly described, in order that these results may be combined, with the object of shewing the course of the accumulated traffic of several talooks. The traffic between the provinces of H. M's. country, carried across the district, will be found to follow the routes last mentioned; the object of the enquiry being to ascertain what communications are still required. The 3 roads mentioned as boundary lines, which are completed, will be omitted from consideration. The talooks will be taken in the following order:—

Shimoga and Honully.

Shikarpoor and Sorub.

Saugur, Nugur, Anuntapoor, and part of Kowlidroog.

5. The Shimoga Talook, has both wet, dry and garden cultivation, but exports little from the W. side of the Toombudra, except jaggory, as the Shimoga market consumes almost all the surplus grain. What is exported is chiefly paddy, from the neighbourhood of Aynoor, which is taken to Namtee, where also nearly the whole of the jaggory manufactured in the talook goes. The sooparee is exported to Beeroor.

Shimoga Talook.	
Revenue.	
Wet ...	75,984 1 11
Dry ...	15,661 13 10
Garden ...	6,565 0 6
Total...	98,211 0 3
Population...	72,403.

Paddy is imported from other talooks, chiefly Luckwully and Anuntapoor, and the requirements of the talook in the way of communications would be fully met, if the proposed road to Yedhully was carried out, and another direct line made to Namtee.

Honully Talook.	
Revenue.	
Wet ...	19,330 3 5
Dry ...	78,311 1 2
Garden ...	4,464 5 2
Total...	1,02,105 9 9
Population...	51,499.

6. Honully is a dry grain talook. The surplus is said to be sent partly to Shimoga, and partly to Bellary and Chituldroog. The maganies west of Toombudra do not produce more paddy than is sufficient for the consumption of the talook.

The principal characteristic of Honully, from a commercial point of view, is the town of Namtee. This place, which is of comparatively modern date, the petta having been established in Poorniah's time, is intermediate between the midan and mulnád, and carries on considerable trade by exchanging the produce of both tracts; the situation being peculiarly favorable for this purpose, as it receives the surplus grain of Aynoor and the mulnád beyond, as also nearly the whole of the jaggory produced in that neighbourhood, and in the Shimoga Talook, which can be stored for some time in the dry climate of Namtee, without risk of damage. The merchants there estimated the trade in this article as at least 40,000 maunds annually. Sooparee is received from the Nugur, Kowlidroog and Coppá talooks, and forwarded to Bellary, from which cloths and other articles are received in return for transmission to the mulnád, and also to Canara, whence the returns are principally in cash. The outlet from the Nugur Division towards the north east, is by a pass called the Ganigana Kunvé, through the hills beyond Honully, which leads to the large manufacturing town of Tominkutté in Dharwar, the route thence being to Bellary, Cuddapa, Kurnool, &c. There is also communication with Bellary *viâ* the Chenagherry talook and Chituldroog. Some cotton is carried to Coompta *viâ* Siralcoppa, and Anwutti, but the trade is dull at present.

The continuation of the plough tax road, now under construction from Honully to Aynoor, in both directions, viz., through the hills separating the talook from Nugur at one end, and to the Ganigana Kunvé at the other, would throw open the mulnád to the Namtee merchants, and the whole of the country to the north east.

7. Shikarpoor produces more jaggory than any other talook in the division. the extent being estimated about one-third of the whole area; under wet cultivation. A small quantity is taken to Shimoga, part through the town of Shikarpoor to the N. E., but by far the largest proportion *viâ* Siralcopo to Hangul, and other markets of the Dharwar District.

Shikarpoor Talook.	
Revenue.	
Wet ...	1,14,896 14 11
Dry ...	19,293 6 10
Garden ...	10,431 13 11
Total...	1,44,622 3 8
Population	53,082.

The talook exports considerably both descriptions of cereals, some of which go to Dharwar, but the greatest quantity to Gairsoppa, by the new ghat. The town of Shikarpoor stands in the line of communication, connecting the open country of Dharwar, containing the towns of Rutteehully, Raneebednore, &c, and beyond that Bellary, Cuddapa and Kurnool, with the mulnád talooks of Nugur and Anuntapoor, from which also the new Hoomche Kutté road leads to Teerthhully and Augoombi. The passage through the hills, is by the Bhundi Timmana Kunvé at the Mudduck tank, named, as I was told, after a Wudder female, sacrificed to ensure the stability of the bund, or according to Captain Wingate, after the daughter of the potail of Massoor, who voluntarily offered herself for this end.

The old talook Oodagunny, attached to Shikarpoor, possesses the important trading town of Siralcopo, which like Namtee is a depôt for jaggory, and is also a point through which much traffic passes from various directions, as it occupies a good position on the line between the mulnád and North Canara on one side, and Dharwar and Bellary on the other.

The new road from Saugur *viâ* Hooloovey, and that from Soorub, which brings the traffic from Siddapoor in N. Canara, meet here, and the quantity and value of the sooparee passing through, is over 52,000 maunds—valued at upwards of 3 lacs; all of which is taken to Bellary *viâ* Curoor, Bidree, Raneebednore and Maidlary. *Chickheron*

The jaggory, which amounts to at least 10,000 maunds, goes either by *Chickheron*, Bunkapoor and Hoobly, or by Anwutti and Hangul, to Dharwar. About 10,000 maunds of cardamums, valued at 80,000 Rs., the produce of Sorub and Saugur, are exported to Howerri through Chick Curoor.

The imports from the open country are on a very large scale, as Siralcopo supplies a great proportion of the midan produce consumed in Saugur, Sorub, and part of Anuntapoor and Nugur, as well as the piece goods, and other articles forwarded *viâ* Saugur to the great annual fair at Cooloor.

The imports from Bellary, consisting of cloths, cumblies, &c., are estimated at about 5½ lacs, and those from Dharwar at about 4 lacs.

The facts shew the importance of completing the road under construction from Siralcopo to Saugur, and continuing it thence to the Cooloor Ghaut, as also the advisability of extending the Siralcopo-Sorub line to Siddapoor, when this can be done.

8. Sorub exports paddy, jaggory, and sooparee, pepper, and cardamums. The Bilghy Talook in North Canara, which is a garden country cultivated by Brahmins, takes a great deal of grain *viâ* Siddapoor, and there is a large export to Gairsoppa by Lumbadies and other carriers, who bring back salt. The jaggory goes chiefly to *Deemkee* and Dharwar *viâ* Anwutti and Hangul, though some is carried to Coompta. The sooparee is exported to Bellary, Beeroor and Beadghi, the first two being markets for the deshawar or fine sooparee of

Sorub Talook.	
Revenue.	
Wet ...	1,51,868 8 11
Dry ...	3,656 0 8
Garden ...	21,987 6 9
Total...	1,77,512 0 4
Population	64,214.

Kasnoor, and Sorub, and the latter for the coarser kind, which is preferred in that part of the country. The returns are the usual midan productions required in the talook.

9. The Saugur Talook exports paddy, sooparee, pepper and cardamums. The chief rice growing maganies are, Avinhully, Kuroor, Souland, *and*

Saugur Talook.	
Revenue.	
Wet ...	84,229 4 7
Dry ...	553 8 10
Garden ...	62,356 4 0
Total ..	1,47,139 1 5
Population ...	52,653.

Sirwunty, Tadgulallay and Kelady; for although rice and garden cultivation are combined in all the maganies, in some the latter preponderates, and sufficient rice is not grown for the consumption of the cultivating Brahmins. The whole of the paddy goes to the coast markets of Gairsoppa, by the 3 ghauts of Gairsoppa, Heenee and Goverdanghery, to Bhutkul by the Hogawaddy Ghaut, and Bydoor, by Carnee and Cooloor. The maganies immediately at the head of each ghaut, use the pass nearest to them; but taking a wider view, it seems that the Heenee and Goverdanghery Ghauts are of most value to the country on the Avinhully side of the Saugur hills, as more direct than the new Gairsoppa Ghaut. The Hogawaddy and Carnee Ghauts are of less comparative importance; while the Cooloor Ghaut enables the Saugur and other merchants to take down piece goods and other merchandise, to the large annual jatra at Cooloor.

A great deal of the sooparee of Saugur goes to Siralcope, as has been noticed above; of the remainder, the largest proportion is taken to Bellary *via* Shikarpoor, and the rest to Beeroor by the Anuntapoor and Shimoga roads.

The town of Saugur has a considerable trade, as it receives, in return for its exports of sooparee, piece goods, and other midan produce, for distribution in the talook; and also supplies part of Nugur. The merchants of Saugur or those from Bellary who have established agencies there, are the great transmitters of articles for sale at the Cooloor jatra, when goods to the value of at least 3 lacs change hands annually.

The pepper produced in the talook, goes chiefly to Bellary, and cardamums to Haweri, both by Siralcope.

The people receive the supplies mainly from the direction of Siralcope, and by the Shimoga road, though some English piece goods and other articles are brought from Siddapoor, and there is a trifling import, by the cross roads, from Shikarpoor direct; salt is supplied from the coast in return for grain.

Nugur Talook.	
Revenue.	
Wet ...	74,857 7 8
Dry ...	28 6 4
Garden ...	24,767 11 3
Total ...	99,653 9 3
Population	26615.

10. Nugur produces rice and sooparee. The cardamums and pepper are not of sufficient importance to require notice.

The largest quantity of paddy is sent down the Hydurghur Ghaut from Nugur and the maganies in the neighbourhood, the Cooloor Ghaut taking off the produce of the maganies nearest it, and a proportion of paddy from the magany of Futtengooppa and Mavinhulla, going to Cooloor or Gairsoppa, by either the Heenee or Goverdanghery Ghauts, as may be most convenient.

The sooparee of Nugur is sent to Bellary and Beeroor, in the proportion of 3rds to the former, and 2rds to the latter, out of a total of about thirty thousand maunds. The Bellary routes, *via* Anuntapoor and Shikarpoor, are through the points of exit, at the Bhundy Timmana Kunvé by the Mudduck Tank, or by Namtee, and thence through the Chennaghery Talook and Chituldooog. With this goes also the sooparee of the magany of Honnar, belonging to Canara.

The sooparee destined for Beeroor, passes through Shimoga, to reach which, it is either taken round by Anuntapoor, or through the hills at Musroor, *via* Choardy and Coomsey.

A portion of the Kowlidroog talook, comprising the maganies noted in the margin, is similarly situated with Nugur.

The paddy is taken down the Hyderghur Ghaut, and the sooparee which is haluted at the Hoomch Kutté Sayer Cuttab, goes principally to Beeroor.

The directions from which the Nugur Talook receives the imports it requires, are from Anuntapoor, Saugur, and Theerthhully. There is no large trading town in the talook, and no weekly market, so that the people have to resort to the markets of Aynoor, Culsay in the Anuntapoor talook, Avinhully, and have also to go to Theerthhully.

It is evident from this, that the communications most required are with the coast *via* Hyderghur and with Aynoor, as the shortest way of export for the greatest quantity of sooparee, and affording an inlet to the line of trading towns of Aynoor, Namtee, Toominkutté, &c.

Anuntapoor Talook.	
Revenue.	
Wet ...	51,579 14 2
Dry ...	123 4 0
Garden ...	15,079 15 5
Total...	66,783 1 7
Population...	25,617.

11. Anuntapoor is principally a rice growing talook, which supplies a good deal of sugar-cane, most of which is sent to Dharwar. It is intersected by the Shimoga and Saugur road, which gives it communication with Shimoga and Beeroor, and with the Gairsoppa Ghauts; but a good deal of paddy from the Musroor Cusbah, and Genie maganies, is taken *via* Avinhully to the Heenee, and some to the

Cooloor Ghaut. There is also some rice exported from Musroor to Coomsey and Aynoor.

12. The principal exports of the district are shewn to be grain, sooparee and sugar; and the imports, cloths from the open country, and salt from the coast.

As regards the exports, the destinations are Dharwar, Bellary and Beeroor, inland; and on the coast, Gairsoppa, Bhutkul, Bydoor, and Coondapoor. The three points through which traffic passes to and from Dharwar and Bellary; are Siralcope, the Bhundy Timman Kunvé at the Mudduck Tank, and the Gungana Kunvé near Honully: and the Beeroor exports all pass through Shimoga.

The destination of the inland traffic is determined by the situation of the markets, and, its course being regulated by the physical features of the country, is directed from the plains to the openings in the line of hills running along the frontier of Mysore; similarly, the difficulty of crossing the range running nearly parallel with the Toonga from Mundgudda to the frontier, has compelled traffic to adhere to the routes passing through these hills in the easiest place instead of in the shortest direction.

13. The same causes affect the traffic to the coast, which is attracted to the different ports according to their relative advantages as markets for grain, and regulated in its course by the facilities or difficulties of the various ghauts.

14. Gairsoppa is by far the most important of the coast markets, and draws to itself grain from a more extended area and with a more constant demand than any of the others. Though in appearance it is an insignificant place, it is the entrepôt where

grain is received by merchants and brokers for despatch to Honore, whence it is shipped to Goa, Calicut, Tellicherry and Cannanore, and the trade during the season, which usually lasts from the middle of October till June, is very considerable. According to the merchants there, the value of produce brought down from the table land, is at least 6,00,000 annually, of which the bulk is paddy, about one-tenth raggy and one-hundredth pulse with a little tobacco; the returns being salt, to the value of over one lac, cocoanuts and oil, till, and dates, &c., amounting in all to about 2,14,000, the balance being paid in cash.

As a market, it is very much liked by the ryots of Nugur, as prompt payment is invariably made, and the system of grain measurement in use has certain advantages in favor of the sellers which some of the other markets have not.

It is estimated that during the season, about 2,00,000 bullocks descend the 3 ghauts leading to it, of which about 1,00,000 use the Gairsoppa, and 50,000 the Heenee and Govardanghery Ghauts respectively.

15. Coondapoor certainly ranks next to Gairsoppa, because among other reasons

*Byloor.
Sowkoor.
Cundaloor.
Byladee.

Puttamars can cross the bar and load inside, whereas Bhutkul and Bydoor are open road-steads. It is mainly supplied by 3 ghauts, viz., Cooloor, Hyderghur, and Augoomby, besides the Moodoor and another small pass which are in use only

by a few of the inhabitants at the head. Like Gairsoppah it has the advantage of water carriage, the grain from Mysore being received at depôts on the two rivers flowing from the ghauts and sent down to Coondapoor, or rather to Gungoly for shipment. The produce received by the Cooloor Ghaut, is put in dhonies at Wundasa, that from Hyderghur, at several *villages near Shunker Narrain, and from Augoomby at Halady.

I did not obtain information at Cundapoor regarding the quantity received at Halady, but got accounts of the grain sent down from Wandasa and also from Shunker Narrain, and the other depôts close to it, which at all events in the first instance, I believe to be tolerably reliable, as it was obtained from the buyers at Wandasa, and afterwards compared with the total obtained by adding together the imports from thence of the individual merchants at Gungoly, who are not numerous.

The statement given showed, that about 470 corjies of paddy, received at Wandasa via the Cooloor Ghaut, and 1185 corjies received at Shunker Narrain and other places via Hyderghur, were transmitted to Gungoly for export.

Estimated in bullock loads, it may be said that Coondapoor imports from 16 to 18,000 loads via Cooloor, and about 40,000 via Hyderghur Ghauts.

16. Bydoor receives grain by the Cooloor and Carnee Ghauts, but principally from the former, the proportions being given at an average of about 40,000 bullocks annually by Cooloor and 6,000 by the Carnee Ghaut, which are delivered either at Bydoor or at Myady, both being on branches of the stream called Hunga Hollé, and most grain apparently coming to the latter place. The grain is shipped in dhonies and put on board puttamars in the road-stead.

17. Bhutkul is the least important of the coast markets. It is a Mussulman settlement containing only 6 or 8 merchants of any great means, and the trade in paddy does not exceed 30,000 loads, to which may be added about 6,000 loads of raggy which all comes down the Hogawaddy Ghaut.

These facts afford good data for gauging the relative importance at present of the different markets and ghauts, which seem to stand thus:—

Market.	Grain traffic in bullock loads.	Total.
I. Gairsoppa...	Gairsoppa New Ghaut 1,00,000 Govardanghery " 50,000 Heenee Ghaut. 50,000	2,00,000
II. Coondapoor.	Cooloor 16 to 18,000 Hyderghur 40,000 Augoomby not known.	58,000
III. Bydoor. ..	Cooloor. 40,000 Carnee 6,000	46,000
IV. Bhutkul, Hogawaddy. ..	36,000	33,000

and the ghauts may therefore be ranged as below:—

	Traffic in Bullock loads.
1. Gairsoppa Ghaut	1,00,000
2. Cooloor	64,000 58,000.
3. Honnee and Govardanghery, equal.	50,000
4. Hyderghur	40,000
5. Hogawaddy	36,000
6. Carnee	6,000

In the case of the two made ghauts of Gairsoppa and Cooloor, the statement shews the whole estimated traffic on the former; while on the latter, there is in addition a special and highly valuable trade in cloths to the amount of 2 lacs annually, which are carried in carts for sale at the Cooloor jatra, besides miscellaneous articles, such as iron, &c.; and it is probable that the total value of the trade on the Cooloor exceeds that of the Gairsoppa Ghaut.

18. The traffic on the ghauts seems to be regulated by causes, partly permanent and partly fluctuating. The character of the coast markets is of the first, but while this remains the same, improvement in the ghaut may draw traffic into it, and cause a ghaut formerly frequented, to be disused.

Though there can be no doubt that the exports in grain have increased steadily from each port for several years, I believe that as markets they must have ranked much as they appear to do now; whereas the opening of the Augoomby, Gairsoppa, and Cooloor Ghauts, has without doubt directed into those channels much traffic which was before distributed over others. When a ghaut is made easy, the effect at once is to induce all professional traders and carriers to resort to it in preference to a shorter and more difficult line, as they can then bring loads from the coast which their animals could not carry up the steep ascents of the old ghauts. This is borne out by the statements made to me of the absolute abandonment of the Heenee Ghaut by Lumbadies and similar carriers who now use the Gairsoppa Ghaut, and by the admitted increase of traffic on the Cooloor Ghaut, while a corresponding reduction has taken place on the Carnee Ghaut. The Hogawaddy Ghaut, by which in former years Lumbadies brought up salt, is now quite deserted by them. The same effects have followed the opening of the Augoomby Ghaut, which, independent of traffic, is now the high road for travellers, pilgrims and merchants from the interior to Mangalore and Oodapee in supersession of the Hyderghur, which was the old and more direct route from many parts of Dharwar, &c.

19. If we consider the amount of traffic now passing down the unimproved ghauts, it appears that—

	Bullocks.
1. Gairsoppa received by the Goverdanghery and Heenee Ghauts ..	50,000 each.
2. Coondapoor by Hyderghur	40,000 "
3. Bhutkul by Hogawaddy.. .. .	36,000 "
4. Bydoor by Carnee	6,000 "

and if quantity only was the measure of importance, it might be concluded that the improvement of the Goverdanghery or Heenee Ghauts should receive first attention, and that if either was repaired, the improved ghaut would absorb the traffic of both.

There are, however, other circumstances which must be carefully considered, and of these the principal seems to be to ascertain, in what part of the country, the inhabitants are at present placed at the greatest disadvantage, as regards a market for their produce.

20. The price at the ports is regulated by the demand at distant places along the coast to which the grain is exported, and fluctuates at the different ports, as advices are received from Cananore, Goa, Tellicherry, &c., so that it would certainly be of advantage to the exporters above the ghauts, who generally receive regular information of the state of prices, to have perfect communications with each port in order at once to select the most favorable market.

With the ghauts in their present condition however, custom, convenience and shortness of distance from the foot of the ghaut to the sea, have great influence, and the remark of General Green seems to be generally true, that exports from immediately above the ghauts, endeavour to reach the nearest port by the shortest route.

Thus, although Lumbadies and other professional and distant traders have deserted the Heenee and Hogawaddy Ghauts, the local traffic remains considerable, and it is certain that a large part of the Nugur and Kowlidroog Talooks, has not benefitted in any way by the opening of the Agoomby and Cooloor Ghauts.

After instituting a detailed enquiry, it appears undoubted that the ryots of this locality are worse off and at a greater disadvantage, as regards a sale for their produce, than those of any other place in the district.

21. In the neighbourhood of the Heenee and Goverdanghery Ghauts, there is no difference in the wholesale price of grain in the maganies near the head of the ghaut, and at Gairsoppa. The ryots all take down their grain on their own cattle, and find this so easy that they refuse to sell above the ghauts, except at the Gairsoppa price.

In extreme contrast to this, the ryots in the neighbourhood of Nugur are willing to sell at the spot for two-thirds of the price ruling at Gungoly, shewing that it is better worth their while to lose one-third than incur the delay and risk to cattle by carrying their grain to market. In order to avoid entering into greater details on the point in this letter, I append a separate memo on the condition of the ghauts and the Nugur talook, which is specially destitute of communications.

22. If all practical difficulties of execution were left out of consideration, it would be sufficient to say that the works undoubtedly calculated to advance the interests of the Shimoga District, as well as the neighbouring provinces, are the completion of lines—

1. From Seralcope to the Cooloor Ghaut.
2. From the Dharwar frontier beyond Shikarpore to the foot of the Hyderghur Ghaut.

3. From the Dharwar frontier beyond Honully *vid* Namtee, Aynoor and Hoomchkutté, to a point joining the latter road with one from the Cooloor Ghaut at Kooloor Kutté.

As, however, the expenditure involved is great, the sources from which funds could be obtained doubtful, and the question affects districts beyond the Mysore frontier, the relative importance of the works requires very careful examination, not only with reference to their future utility, but also to the state of existing lines completed or in progress. It may, I presume, be accepted as a rule that the completion of a road, or projected system of roads, should be effected before undertaking new works of an extensive character, and that this rule should not be deviated from, except under extraordinary circumstances.

23. Under this view, therefore, the line first mentioned has prior claims. The Cooloor Ghaut is a first class work, it has been opened for 20 years, and the Madras Government are proceeding with the bridging of the line leading from its head to Honnar, while almost nothing has yet been done in Mysore. Moreover the total value of the traffic on the ghaut, appears greater than that on any other north of Augoomby. The most important feeder to this ghaut is the road first mentioned, which has lately been partially opened from Siralcope to Saugur, and should be continued on from that point.

The line between Anuntapoor and Cooloor Kutté is in progress, and if this were completed, the Cooloor Ghaut would then be brought into communication with Dharwar and Shimoga.

24. I would, however, urge attention to the facts described in the separate memo on the Nugur Talook, as I believe that the condition of this part of the country is without a parallel in Mysore, and that justice to the inhabitants requires that they should receive from the Government some return for the revenue drawn from them for years, of which, as yet, not a rupee has been spent in the most urgent wants of the talook, viz., communications.

As it is clear that the Public Works Department have neither the funds, nor the agency for carrying out all the works required, some other means of providing both must be sought for, and should the Commissioner be satisfied, as I trust he will be, that this part of the country should no longer be neglected, I shall be prepared to submit a further proposition for constructing some of the lines by the agency of the civil officers.

I have the honor to be, &c.,

(Signed) J. T. McGOUN,

For Superintendent,
Nugur Division.

MEMO ON THE GHAUTS AND THE SPECIAL REQUIREMENTS OF THE NUGUR TALOOK.

In former times, the principal passes seem to have been those communicating more or less directly with the capitals of the small principalities above and below the ghauts, to which as centres, grain and other productions tended to converge, rather than to the ports which are now the commercial outlets for the surplus of Canara and Nugur.

The old Gairsoppah Ghaut connected Siréy Sondah and Bilghy, ancient Jain principalities, with the neighbouring town of Gairsoppah, which seems to have been of greater importance than Honore, as the latter even in Buchanan's time only exported to a small extent. The Heenee and Govardhanghery Ghauts probably had the same origin.

The export trade of Bydoor and Bhutkul, in a great measure in the hands of Mussulmans, is comparatively modern; these places as well as Hadwully and others formerly deriving importance from being the residence of the Jain princesses.

When the coast tract was conquered by the Ikerry family, and the Government of the country above and below the ghauts was concentrated at Nugur, the small towns of Canara rapidly declined as noticed by Buchanan, and Nugur drew to itself not only the whole surplus grain of the talooks above the ghauts, but, as this was insufficient for the consumption of the capital and of the garrisons in the various forts, imported from below.

At that time, there can be no doubt that the Hyderghur was considered the most important ghaut as leading directly from Canara to Nugur and communicating with Mangalore, which was retained under the direct government of the Ikerry family, instead of being entrusted to deputies as was the case with the other petty Jain chiefships.

Although Canara must always have required dry grains, metals, cloths and other produce from the plains, the condition of the ghauts rendered carriage expensive; and the trade must have been limited to the barest wants of the population. The character of the Agoomby Ghaut is described by Colonel Green in the Selections from the Records of the Commissioner's Office, where it is stated that in 1831 no pass in the Western Ghauts was practicable for cattle with loads.

Buchanan gives rates of hire from Nugur to Mangalore by the Hyderghur Ghaut, which are quite incompatible with extensive trade; and tradition asserts that on this ghaut the principal traffic was by head-loads, though a considerable quantity of goods passed down to Oodpee as well as to Mangalore.

At Cooloor, which for centuries has been the annual cloth and cumbly mart for that part of the coast country, and was selected probably on account of the large assemblages at the jatra there, the system of transporting bales down the pass was the same as at Agoomby.

North from that to Honore, the steep of country is too narrow to have afforded scope for much trade in the absence of exporting towns on the coast.

The city of Nugur still existed under Hyder and Tippoo, but its disappearance after the fall of Seringapatam materially affected the interests of the old Nugur principality and certainly influenced the traffic with the coast.

The only grain market of any consequence above the ghaut having vanished, and there being no important towns in the country below, the ports were the only remaining places to which the ryots could carry their grain.

For many years, prices were low and the country suffered greatly, but the development of the export trade has been steady owing to an increasing demand in Malabar and many other places; and of late years, high prices have created an unlimited demand at all the ports from Gairsoppa to Gungoli. I have no returns of the exports by sea to refer to; but it is sufficient to compare the statement given in Buchanan's Vol. III, pages 196—290, with the account of the Gairsoppa merchants to myself, to be convinced of the fact.

By that statement, the value of the whole export trade of North Canara, including the talooks of Ancola, Honore and Cundapoor, was only Rs. 3,31,532, of which rice was Rs. 1,41,837 and paddy Rs. 19,523, against an estimated export at present of 6,00,000 worth of grain from Honore alone.

I have already endeavoured to ascertain the relative importance as markets of the Canara ports and of the ghauts generally under the altered circumstances of the present day; and shall now refer to their present condition, omitting Gairsoppa, Cooloor and Agoomby.

The Heenee and Govardhanghery Ghauts, which seem to be of nearly equal importance are used almost exclusively by ryots. Their general features have been described by Colonel Cotton. Since he visited the Heenee Ghaut, however, the upper part of it has been improved by the Jain potails of Wattakay, who are large exporters of grain, and much interested in the pass.

The original ghaut called the "Ranee Marga" or Queen's road, follows a projecting spur terminating in a rock called the "Guddee Kulloo" or throne rock, from a legend of Chennamaji of Ikerry, who visited the place, having sat there and surveyed the conquests of her ancestors in the valley of Gairsoppa and along the coast. From this point, the path formerly went straight down the face of the mountain; but the old track has been now abandoned, and a new trace taken along one side of the spur, so as to avoid the sudden drop at the end. A still greater improvement might be made by a further alteration. The main spur projects from east to west: the path as at present improved goes down the south side of the spur. The potail who accompanied, took me to the north side, in which direction there is another ridge leading to the north branches of the main spur, doubling the length of available ghaut face, and making it possible to lay out at a comparatively small outlay, what would perhaps be one of the easiest ghauts in the whole range.

*Putgoopa.
Kirwargy.
Hossahully.
Jallah.
Marbudee.
Malalee.
Avinhully.
Edmanee.

The Heenee Ghaut is the outlet for the entire grain of the *maganies at its head, and for a proportion of those shewn below. It is considered to possess several advantages over all the others, of which the chief are that water is obtainable throughout the season; that along the approach to it, straw is procurable when the grass fails; that it is less stony than some others, and the distance to

Gairsoppa from the foot is inconsiderable.

I believe that if the ghaut was as easy as the present Gairsoppa Ghaut, much of the traffic of the latter would come to it, as the Gairsoppa Ghaut is not in reality as shewn in Major Sankey's map, but as in the map forwarded, and passing through Mulle Mane considerably to the north of the falls, and is at least 20 miles long, with no forage procurable.

The Goverdanghery Ghaut seems to be the only practicable descent between Heenee and the fort of Goverdanghery. As the stream which passes ^{Gairsoppa} flows ultimately into the Gairsoppa river, I thought it possible that an entirely new line might be found by following its course—a line which would combine the advantages of ^{Hyderghur} Heenee and Goverdanghery Ghauts; but I heard that the stream terminates in a waterfall with a drop of some height and rock on both sides. The present ghaut might, however, I think, be much improved by commencing the descent from some point on the Nugur side of Goverdanghery, instead of from the Droog itself, which stands on the extreme western point of a range running for about $2\frac{1}{2}$ or 3 miles east and west.

*Kurroor.
Soulbad.
Sowuntancuttay.
Avinhully.
Jallah.
Honur.
Murbudee.
Malalee.
Edwane.

The ghaut is used by the ryots of the maganies detailed in the *margin, and, though very stony, is liked on account of its shortness.

Colonel Cotton mentions in his diary another small ghaut, of which he says, "near Kanoor, there was in former times a ghaut which half way down divided into branches, leading north and south." The northernmost line went

to Someshwar, the southern line to Seerully and Bhutkul.

The lines are these:—From Kanoor, two start south-east, separating almost immediately. The northern line, known as the Goondalkutté Ghaut, leads down to Moordeshwar. The southern or Surlholle Ghaut to Bhutkul, being joined by a small feeder from Ganupgar at a village called Hoolguddé. Both are unimportant, but the former has been lately repaired by the Bombay Government at the representation of the merchants of Moordeshwar, who hoped to divert to themselves some of the grain now passing by Goverdanghery down to Gairsoppa, in exchange for salt produced at the koties of Hebbaly, Seerully and Bulsay.

The work was commenced in 1867, and about $6\frac{1}{2}$ miles repaired at a cost of 2,430 Rs., by the revenue authorities; since which, the whole of the ghaut has been improved.

The distance from Moordeshwar to Kanoor is 15 miles, of which 6 is within the Mysore boundary; but the actual length of ghaut is not more than 6 miles, of which only $1\frac{1}{2}$ mile lies in Mysore. Though not stony, the pass is steep and difficult, and badly supplied with forage and water.

This ghaut, the chief communication with Bhutkul, may be estimated at about 6 miles in length. The boundary between Mysore and Canara is unsettled owing to a coomri dispute, but it seems not improbable that in ancient times the Jain chiefs of Hadwolly had possession up to the head.

There are several old fortifications on the ghaut, the last erected being a small redoubt, said to have been built in Hyder's time. There is a temple to Gunputty on the ghaut, and a fountain discharging into a large stone, though said to have been pillaged from Hadwolly by the Ikerry princes, and to have been left there in

transit to Nugur. As a curious instance of retribution, the gilt cupola of the Nugur davasthan was afterwards robbed by the Mussulman conquerors, and carried to Butkhul, where it adorns the majid.

The ghaut is not very steep, but about $2\frac{1}{2}$ miles of it are exceedingly stony, part having been originally paved, and the rest very rocky.

The length from the foot to Bhutkul is about 9 miles over steep laterite ridges.

The road passes Hadwolly, the capital of the Byra Devè Princesses, mentioned by Buchanan, Vol. III, page 109, which still contains the ruins of her palace, traces of many houses, and several Jain temples.

The Bombay Government in 1864 spent 1200 Rs. in improving this part of the line, and called on the merchants of Bhutkul for a contribution; but as they were not inclined to give anything, the matter seems to have dropped. As the line descends by the side of a ravine, and not straight down the face of the mountain, the ghaut might be more easily improved than the Carnee and some others.

The traffic on the Hogawaddy Ghaut consists now almost entirely of paddy, carried down from the maganies of Soulbad, Kurroor, Jalla, Honur and Avinhully, and the salt trade seems to have been quite diverted into the improved ghauts.

The old shanbogue who kept the sayer accounts at the ghaut from 1834, informed me that the Cooloor Ghaut has engrossed all the regular carrying traffic; that in former days, the Hogawaddy, which was always superior to the Carnee Ghaut, was used by Lumbadies, and other salt carriers from Coomsee, Shikarpoor, and further east.

I ascended the Carnee Ghaut from Bydoor, starting at 5-15 a. m. and reaching the village Carnee at 9-30. The ghaut seemed to be about 4 miles in length, reckoning from the foot to a fortified gate at the top of the pass, from which there is

The Carnee Ghaut.

a descent again on the Mysore side.

The ghaut is almost in its original state. It has never been paved, and in many places, the path goes through narrow crooked passages, which scarcely admit a bullock at a time. It is steep, stony, and bad, and seems to be scarcely used after February, as the streams dry up, and water fails. The Bydoor merchants spend a few rupees now and then on the worst places, but the ghaut appeared to me the least

*Soulbad, Kurroor, Nadwad.

*maganies close to Carnee, all the ryots within reach of the other ghauts preferring the Cooloor and Hogawaddy.

Major Sankey has denounced this ghaut, but its condition is bad beyond any description.

The Hyderghur Ghaut, known indiscriminately as the Hyderghur, Hoolical and Hossangady Ghaut.

From the village of Hossangady at the foot, to the boundary barrier, known as Kurlapana Bagh, the road is wide, and in fair order. The worst part of the ghaut is from this point to the Ani-geri, or elephant drop. Hence to Hyderghur, it is not so bad, and it is fairly passable from the latter place to Hoolical. As before mentioned, it must have been the most important pass in the days of the Nugur dynasty; and till the Agoomby Ghaut was opened, it was the thoroughfare for pilgrims to Oodapee, for whose benefit, Poorniah kept up the chutter at Hoolical.

Although the ghaut is badly planned, more care seems to have been taken in its construction, than in that of any other of the old ghauts. This circumstance,

however, has now made it the worst of the whole, as the pavement has become broken up by a long series of monsoons, rendering it nearly impassable. The condition of the steep paved part is frightful. The pony I had with me, only scrambled up with the greatest difficulty, and risk of injury; and it is hard to say which is worst, the places where the pavement had been broken up, or where it is entire.

In one case, an animal's legs are cut and bruised among the sharp slabs tilted up at all angles, or in the other, they can scarcely keep their footing on the steep slippery causeway. The "Elephant Drop," where, by tradition, one of the Nugur royal elephants rolled down, was formerly passable only by a gallery, or balcony of planks, but was improved by some of the rocks being blasted off at the recommendation, I believe, of Colonel Walker.

At present, even this spot is scarcely passable, being ^{an} ascent of several steep steps formed of large blocks of loose rock, most of which have been displaced. Some repairs were executed in 1805, when His Highness the Rajah came up from Oodapee, but on the whole the ghaut must have been deteriorating for many years.

It is the only communication with the coast, for the country round Nugur, and for part of the Kowlidroog talook, and its improvement is most anxiously desired by the people of Nugur and Cundapoor. In describing the special requirements of the Nugur talook, I shall endeavour to explain fully the cause of this anxiety, and the advantages likely to result from improving the ghaut.

The Nugur talook, from its position, is very unfavorably situated with respect to markets. Its productions, in the words of the inhabitants, are, rice to eat, water to drink, and fuel to cook. To which may be added sooparee, which with paddy are the only exports. It is further from Gairsoppa, than any other talook within the influence of that market; many of the maganies are not well placed as regards the Cooloor Ghaut outlet. The Agoomby Ghaut is too far south to benefit the talook.

The proportion of garden land to paddy cultivation in the talook, is not such as to afford a market for the surplus grain, as is the case in the maganies of Kuroor, Bramunwadee, &c., in Saugur; and there is no wahlia or garden country of other talooks, in the immediate vicinity.

*Moognad.

Belloor.

Hosnadoo.

Hoomcha.

Yedoor.

Bagayet.

Kadoor.

Kirevurghy.

Hoorly.

Seetoor.

Almaney.

Argah.

Mudwunknad.

Agrahar.

Janee. . .

For these reasons, the inhabitants of the tract of country round the old capital generally, but specially that between Nugur and the ghauts, which are difficult of approach on the east side, as also some of the maganies of the Kowlidroog talook, are entirely dependant on the Cundapoor market for a sale of their grain.

At Hoolical two roads meet, by which a great part of the grain of the maganies *marginally mentioned, including some of Anantapoor, is brought to the head of the ghaut.

One of these roads leads from Yedoor, the other from Nugur, the latter bringing the grain from Nugur and places east of it, and also that contributed by another road, by which the produce of part of Argah, Nonaboor, Hoomcha, &c., is carried to Hoolical. If we examine the state of prices in the country dependant on the outlet, it is found that the ryots get less for their grain, than those of any other

locality, and this seems fully accounted for, by the great obstacles to traffic opposed by the condition of the Hyderghur Ghaut.

Reckoning by the local candy of 50 seers, the price at Byloor, the nearest market below the Hyderghur Ghaut, was shewn to me to be exactly double that above the ghaut, when I was there. Paddy was selling round Nugur at 5 candies per pagoda, while at Byloor the price was 2½.

This difference was exceptionally great owing to the cattle disease, which has stopped traffic; but it is considered that on an average of a series of years, the difference is one-third.

This may be taken as an illustration of the loss to the country by the impassable state of the Hyderghur Ghaut; for the average difference of price above and below, representing the cost of maintaining carriage, and removing the grain to the coast, proves that one-third of the crop of every year is expended in carriage for about 36 miles: I tested this by enquiries in almost all the maganies I visited, and found that while there is not much difference in the price at the coast markets, grain was cheaper round Nugur than any where else.

At Luchsumpoor near the Cooloor Ghaut, a sooparee growing neighbourhood, the price was 4 candies per pagoda, and at other places the difference was less; till at the head of the Heenee and Goverdanghery Ghauts, the price was the same as that at Gairsoppa. In fact, grain was brought at Mavinahola to be carried down the Cooloor Ghaut at 4 candies per pagoda, while selling near the Hyderghur at 5.

The reasons assigned are—1st, that the ryots find by experience that their cattle are so injured by the journey, that they prefer to sell to a few influential men, who keep a good many cattle, rather than take down their grain themselves; and second, that no carriage can be hired, except at a very high rate.

One potail told me, that the damage to cattle was so great, that he preferred to send his grain down on hired bullocks at the rate of 8 annas per candy, than use his own, as he found that they were fit for nothing else for a fortnight after the trip, without taking into consideration the numbers lamed, strained and otherwise injured. Moreover it is necessary to have a large stock of bullocks, as it is only possible to put on half the ordinary load.

The rate for hired carriage is quite beyond the usual rate of any other locality along the ghaut, being 8 annas per candy weight of Nugur, against 5 annas above the Cooloor Ghaut. The natural rate about the Carnee and Hogawaddy Ghauts seems to be 4 annas, when not artificially raised by the cattle disease, though the ryots generally carry down their own grain as they invariably do in the neighborhood of Goverdanghery and Heenee.

The most convincing proof, however, of the effect of the state of the Hyderghur Ghaut, and the cost of carriage, and consequently on prices, is the acknowledged result of the improvement of the Augoomby and Cooloor Ghauts.

Before the Cooloor Ghaut was improved, the rate of hire for carrying grain by pack bullocks from Cooloor Cuttè to Wandasa, was 10 annas per candy. It is now 5 annas 4 pie, called tenke, or one-third of a rupee, being a reduction of one half.

A still greater benefit has been conferred by making the ghaut practicable for carts.

Formerly, bales (called undigas) of cloths, &c., each being half a bullock load,

were carried down by coolies from Nugwoddy to Cooloor at 1 rupee per undiga; while the present charge for a cart carrying 5 bullocks loads from Saugur to Cooloor is 4 rupees as below.

Former rate.	Rs.	Present rate.	Rs.
1 Bullock hire from Saugur to Nugwoddy	3	Cart from Saugur to Cooloor with 5 bullock loads	4
1 Rupee for each $\frac{1}{2}$ load to Cooloor	2	Or As. 12—9½ per bullock load.	
Total...	5		

The charge for carrying down bales at Augoomby was half a rupee per undiga, being cheaper than at Cooloor, as there was a colony of Pariahs who made a regular trade of it.

The Nugur talook is also greatly in want of communications by which its sooparee, the only other export, can be conveyed away in carts.

The sayer returns shew that two-thirds of the sooparee, or from 18 to 20,000 maunds, are carried to Beeroor, all of which passes through Shimoga, either by a long detour *via* Anantapoor to Coomsee over a very trying road for cattle, or by Musroor and Ayanoor. The remainder goes to Bellary by Anantapoor.

The same causes which operate unfavorably as regards the exports, make it difficult for the inhabitants to obtain what they require from the open country. The talook is separated from Ayanoor, the nearest point on the line of trading towns of Ayanoor, Namtee, Tōminkutté, &c., from which supplies would pour in, if communication was easy by a range of hills through which at present there is scarcely any passage lower than Musroor, and carts cannot yet pass from the next opening at the Mudduck tank by Shikarpoor and Anantapoor.

There is no market in the talook, and the people have either to resort to Teerthhully, or to the distant santés of Avinhully, Culsee and even Siralcope. The consequence is, that Nugur is said to be the dearest talook in the division as regards all midan articles, and it will probably remain so till communications are opened sufficiently to enable a market to be established, and till merchants find it worthwhile to have depôts in the town of Nugur, or elsewhere.

I therefore consider that the primary wants of the Nugur talook are easy communications with the Cundapoor market, Beeroor and Bellary, for its exports; and with the open country to the east, to let in a supply of dry grains, cloths, &c., from the most convenient points.

For these reasons, the lines mentioned by Major Sankey, from Teerthhully to Nugur, and Nugur to Saugur, seem to me of secondary value, and the most beneficial would be:—

1st. A line from the Mudduck tank beyond Shikarpoor to the foot of the Hyderghur Ghaut.

2nd. A line from Ayanoor through the Musroor hills, which would be continued till it struck the first mentioned line at Cooloor Kutté; thus serving both as an approach to Nugur and a feeder to the Cooloor Ghaut.

The advantage of this line to the Cooloor Ghaut are shewn by the fact, that I met at Nugwoddy 13 carts with cloths to the value of at least 15,000 Rs. in transit from Kurnool to Cooloor jatra. The carts had brought a stock from Namtee to

Hoomch Kutté round by Musroor, part had been sold there, and the rest with a fresh stock had been brought to Cooloor, to reach which they had to go round by Anantapoor.

While these communications would be of incalculable value to the talook, there is no great difficulty to be overcome, except the formidable undertaking of a new ghaut. Major Sankey has described the proposed line, which I found to be in every respect superior to the old track. It appeared to me that, contrary to the usual rule, the most difficult part would be in the lower portion of the ghaut, which is rocky and steep; and that the upper part would be easily worked out.

The town of Nugur has been supposed to be almost inaccessible, but Major Sankey has dispelled the idea, and after carefully examining the localities described, I can fully confirm his ~~assuming~~ ^{assessing} that an excellent road can be made through the old capital with perfect ease, and comparatively small cost.

From the rising ground at Cooloor Kutté, where the proposed line from Ayanoor would meet one from Anantapoor to Nugur, it is at once evident that the existing causeway has been led over the line of hills between that place and the town of Nugur at a much higher point than is necessary; and examination shews that an opening leads to the stream partially spanned by the ruined bridge called Gunjee *Gurjee* Setwa.

This is without doubt the proper entrance to Nugur, but the bridge which was never completed is now almost in ruin and it would be essential that it should be re-constructed simultaneously with the road, as the banks of the stream are steep, and the ford would not be a good one. Probably some of the existing piers could be utilized for an iron lattice superstructure.

The line from Ayanoor to Cooloor Kutté is equally favorable; I crossed the range of hills in two directions, 1st from Musroor to Comsee; 2nd from Ayanoor to Hoomcha Kutté, sending my sheristadar by two others.

The villages passed are given in the margin.*

The route should, I think, have in view the connection of Ayanoor, where there is a weekly market rapidly increasing, and which is the terminus of the Honully—Namtee road, and Hoomch Kutté, which I have no doubt, hereafter, would be an excellent place to establish a market for the Nugur talook, and I would give the preference to the route *via* Owka &c, as the best, for reasons which I can give in greater detail, if necessary. Ultimately a direct line might be taken to Shimoga from Shirgiry.

It is not very easy to make an accurate estimate in money of the value of these proposed communications, but some facts are evident enough.

The ryots pointed out to me, that the advantages of improving the Hyderghur Ghaut would be:—

* From Hoomchutté *via* Owka to Ayanoor:—
Owka Hootully.
Bidiyahully.
Wudahosully.
Koorunhully.
Belloor.
Goobiga.
Adinacotigy.
Noody.
Jundihully.
Shirgiry.
Ayanoor.
From Ayanoor to Hoomchutté *via*
Harohitloo:—
Doogly Monay.
Audguddee.
Muthlee.
Cndaygudoy.
Harohitloo.
Nerlay.
Culeoppa.
Gundermully.
Hoomchutté.
From Musroor to Coomsee *via* Chordy:—
Korgey.
Lingadahully.
Goondoor.
Chordy.
Coomsee.
From Musroor to Coomsee *via* Ayanoor:—
Kagee Hosully.
Ayanoor.
Coomsee.

1st. That bullocks would carry down double what they now do.

2nd. That ryots with few bullocks, would be able to take down their grain,

instead of selling it on the spot to potails and others, who can afford to keep pack cattle.

3rd. That there would be a saving in time, as there are now unnecessarily two halts between Nugur and Hossangady, owing to the badness of the ghaut.

4th. That buyers would come up from below the ghaut, and there would be more competition.

If the improvement on the Cooloor Ghaut has had the effect of lowering the cost of carriage one half, it is not unreasonable to expect that a like result would follow from a new ghaut at Hyderghur, and that the difference of price above and below the ghaut, would be diminished from one-third to one-fifth or one-sixth.

The introduction of carts on the transport of sooparee would also be great, and a rough calculation has been made of the quantity of midan produce required for the consumption of the talook, which is supposed to amount to about 2,58,553 maunds, for the transport of which, at 5 maunds per bullock, 51,710 bullocks would be needed; if an average is taken of the distance from which produce is brought, and the price set down at Rs. 1-8-0 per bullock load, the total cost of carriage amounts to 77,566 per annum.

The substitution of carts would probably effect a saving of at least half, or say Rs. 35,000.

Whether a new ghaut at Hyderghur would be sufficiently advantageous to Canara to induce the Madras Government to share the expense, is impossible to say. The merchants of Cundapoor are very anxious to have it opened, and seem to think that trade would spring up between the Cundapoor talook, and the open country of Mysore and Dharwar to the east of the mulnád, in addition to the probable increase of supply of grain.

I have not sufficient information to give an opinion on the point, but it is certainly remarkable that the Cundapoor talook is at present dependant to a great extent on and for supplies brought down by sea from Coopta, to which they are forwarded from Dharwar.

Although ^{however} known, it may be doubtful whether the Madras Government would incur the expense. I think the advantages so great to the Nugur talook, and the claims of the ryots of that part of the country so strong, that if difficulty arose on that point, the Mysore Government might undertake the additional 3½ or 4 miles required to open the ghaut throughout.

Major Sankey has enlarged upon the signs of decay that meet the eye in the neighbourhood of Nugur, and though I do not follow him in all his conclusions, I am convinced that the talook has passed through a long and dreary period of poverty and depression, and is, at this moment, for want of proper communications, unable to participate fully in the advantages of the rise in prices of the articles it produces, while it suffers from the same cause by an enhancement of the cost of the articles imported for the consumption of the inhabitants.

When Nugur was the capital, there was a steady demand for grain close to every ryot's home. Pack cattle even were few, because grain could be carried by head loads, and sold in small quantities as occasion required, and it is universally asserted that prices were high. It may be said that there is no means of proving this; but however difficult it might be, in ordinary cases, to assert the state of prices

at so remote a date, the concurrence of opinion is remarkable, and the condition of mulnád at different times, is from the nature of the country more easily ascertained, than that of any other part of Mysore.

The agricultural population can never have been numerous, as the valleys only can be cultivated, the productions are limited, the seasons and consequently the crops vary less, there are no large towns, and the markets are few.

The town of Nugur and the garrisons absorbed all the surplus grain; sooparee being comparatively neglected as the price was low, and probably the trade in the hands of a few men. The price obtained for paddy was a pagoda for 4 candies, or even 3, equivalent to from 50 to 37½ seers per rupee. Prices remained much the same in Hyder and Tippoo's time, because a considerable number of troops, peons, &c., were maintained; but after the fall of Seringapatam, Nugur rapidly sank, and grain soon fell ruinously low.

In Buchanan's time, paddy was at 6 candies per pagoda, but it went down to 8, or 100 seers per rupee, being a fall of 50 per cent. The lowest price seems to have been 14 candies or 175 seers per rupee. Nugur was not singular in this respect.

Volume III, 280.

A great fall in the value of agricultural produce took place in Canara between 1800 and 1848, as noticed by Mr. Blane, the Collector, in a report on that province, and throughout the Madras Presidency, there was till within the last few years great agricultural depression from this cause, as shewn in Mr. Dalrymple's memo on the famine.

The ports on the coast, however, have of late years been gradually drawing to themselves the grain from above the ghauts, and the exports from Mysore must have increased steadily, since the advance of prices consequent on the enhanced demand along the Malabar coast, and deficient harvest elsewhere.

The Nugur talook alone seems to have lagged behind the rest of the country. The ryot in some places now gets less for his grain than he did 150 years ago, and only one-sixth more than he did when Buchanan visited Nugur; while the price of cumblies, cotton cloths, dry grains, and all other articles he requires, has risen enormously, and the hire of Canara coolies, who annually work in the Nugur sooparee gardens, has gone up from 1a. 7p. per diem, which was the rate 25 years ago, to about 4a. a day.

I would not infer that the condition of the ryots is worse than in old times, as this would be contrary to the voluntary declarations of many who at once admit that they are better off, and that the standard of living is generally higher; but I think that the improvement of their condition is not what it should have been, if more had been done in the way of roads.

The revenue drawn from the Nugur talook since 1834 has amounted to Rs. 65,05,911-9-8, and the only return has been the practical protection of the people from punder and oppression.

Altered political circumstances doubtless rendered the abandonment of Nugur inevitable, and the often repeated observation, that Asia is covered over with decayed capitals and ruined palaces, is true in this instance as in other parts; for remains of old cities exist from Siréy to Halébid. The seat of Government was removed, and with it went the prosperity of the country dependant on it, for Nugur was unable to obtain footing as a mercantile town between the plains and the coast, nor

indeed does it appear to have ever had that character. Certainly the routes supposed by Major Sankey to have been the old commercial lines of the country, were not used for that purpose, as, until the line of fortifications became ruined, there was no way of passing outside by the Hilgoongee bridge; and the Yarigee bridge, which, from the flight of steps leading down to it, seems to have been only intended for foot passengers, never was finished. The tradition regarding these bridges is, that they were both built by a Mussulman, Asaph of Tippoo, for convenience to the garrison during the rains, and that his proceedings being disapproved, he committed suicide.

The feeling that they can justly claim some return from the Government is universal, and the wishes of the people are unanimous as regards the Hyderghur Ghaut and the approaches to Nugur. Should these communications be opened out, there is every probability that many of the old houses would be re-built, and that trade to a great extent would revive. Of the general benefit to the talook, direct and indirect, there can be no doubt, and I would therefore most urgently plead, that the same advantages which have been for long placed within the reach of the inhabitants of more fortunate parts of the country, be extended to the ryots of the obscure and neglected talook of Nugur.

(Signed) J. T. McGOUN,
For Superintendent of Nugur.

No. 2599.
271.

MYSORE PUBLIC WORKS DEPARTMENT,

CENTRAL OFFICE.

Dated the 28th May 1867.

From MAJOR R. H. SANKEY, B. E.,
Chief Engineer of Mysore.

To The Secretary to the Commissioner for the Government of the
Territories of His Highness the Rajah of Mysore.

SIR,
In accordance with the promise contained in my letter No. 3058—404 of the 9th October 1866, I have the honor to report the results of my late tour through the western parts of Nugur, undertaken in January and February; and in so doing, would express my regret that occupation on other matters since my return, has unavoidably prevented my submitting this report at an earlier date, and further that I should be obliged to treat even now, the important subject of communications through this long neglected but most interesting part of the province, in a very imperfect manner.

2. The route I followed is shewn by a green line on the accompanying sheet of the Indian Atlas. Captain Lindsay and Mr. McKennie accompanied me from Chickmoogloor *via* Baulay Honoor to Hurihurpoor, from which place I went with Captain Palmer to the Augoomby Ghaut round by Kowlidroog to Nugur, and the Hossan-

gady (or Hyderghar) Ghaut. Starting again from Nugur northward, we visited the Cooloor Ghaut and Coondapoor on the coast. Returning by the same route, we struck off *via* Honnaur, Carroor, Goverdanghery Ghaut to Gairsoppa, from which place the route lay up the Gairsoppa (or Hosalumaki) Ghaut by the Falls and Talgooppa to Sangur. I left Captain Palmer at the latter place, and struck off by Sorub, Siralcope, the Mudduck tank, and Shikarpoor to Honully, thus completing the portion of my tour directly adverted to in this report.

3. I have endeavoured to make the actual present state of the communications in Nugur intelligible by shewing in full thick red lines, the provincial roads under the department which are completed, or nearly so; in double red lines, those of a

lower class executed by this department or from plough tax funds (either finished or well in hand) under the direction of the Deputy Superintendent; and in double dotted lines the roads or ghauts I would venture to propose, and which it appears to me, should now be taken up if possible at once. The figures showing the various heights of different points above sea level ascertained barometrically, will it is hoped aid in the consideration of the subject.

4. The condition of all this part of the country has already been so graphically described by Captain (now Major General) F. C. Cotton*

and by many others, that were it not for some apparently fresh information, which Captain Palmer and I have been enabled to collect in regard to the characteristics of country in the vicinity of the old city of Nugur, it would suffice simply to say that such and such roads can and should be made. As the matter stands, however, I trust I may be pardoned for a slight digression in elucidation of the subject generally.

* See collection furnished to this office under Secretary's Docket No. 102—21 of the 7th May 1864.

5. This portion of the province though teeming with natural wealth, and formerly the seat of a powerful independent native Government, has long been neglected, and now stands as an absolute bar to that free intercourse between the coast and the interior, which is so essential to the prosperity of the country lying on either side of it.

6. All acquainted with this province are aware that the Nugur forests produce spontaneously and in abundance, cardamums, pepper, wild cinnamon, gambouge, resins, &c.; that the finest of betel, rice, sugar, with fruits and vegetables of all kinds, are reared there; that coffee is now forcing its way into its most hidden depths; and that tea, chinchona, with many hitherto untried staples will probably follow; it is only therefore natural to find that the Superintendents, who at various times have been in charge of this division, have devoted their best endeavours to the establishment of a system of communications. As above mentioned, Captain Cotton drew continued attention to the subject, and Mr. Bowring not only travelled through the whole tract, but devised a net work of roads to be executed from the plough tax funds. The Madras Government has also done all in its power to aid in the work, executing among other works the Cooloor Ghaut, the approaches to which on this side still remain unfinished.

7. The result of all this combined effort is shewn on the accompanying map, and though unquestionably much good has thereby resulted, the effects on the whole are by no means commensurate. Excepting just along the tracks of the main roads, the country appears to be going back instead of forwards, and to be more and more deserted by the inhabitants from day to day. In fact, without the adoption of some comprehensive scheme for calling back its lost prosperity, it is much to be feared that large portions must return to the possession of wild beasts. A few facts will speak for themselves. At Baulay Honoor, in the country around which it is said there are exactly "9,000 hills and 18,000 devils," there used according to tradition to be a great city. There are certainly remains shewing at least extensive occupation of some kind. Now there is hardly a hut. Nugur, which according to the reports given by Buchanan, had 20,000 houses, and became "a town of great magnitude and commerce" under the Ikerry Rajahs, and which, even so late as Hyder's time had a palace, mint, arsenal, and manufactory of arms, is now reduced to some 300 houses, and even this small number is gradually diminishing. Kowlidroog exhibits the same spectacle. Ruins and decay are on all sides, and soon it will cease to exist even as a village.

9. Though the reasons for all this have long been recognized and stated, by those who are much better acquainted with the country, and much more able to speak with effect and certainty than I am, it may nevertheless not be out of place for me to advert briefly to the causes of decay which have been sufficiently powerful to defeat the efforts of past years to restore prosperity.

10. It would not of course be safe to conclude that all the former prosperity of this part of the country had a real and durable basis, but be this as it may, the chief cause of the deterioration of this tract was, it can scarcely be doubted, the disappearance of the old Ikerry Raj from the city of Nugur. Here was collected the trade of the coast and the upper country. It was doubtless in recognition of its

excellent position in this respect, that Sivuppah removed the seat of Government from Ikerry, and accordingly we find that in those days the Hossangady pass leading from the coast was (as stated by Buchanan) one of the best in the Western Ghauts.

11. Among other remembrances of this ghaut road, is still pointed out at a place $1\frac{1}{2}$ miles from the top, the spot where one Rama Chennamajee's charity existed in olden times, and where sweetmeats and refreshments of various kinds were given gratis to the weary travellers—not the only encouragement to trade it may be assumed.

12. This ghaut road, which, although in those days comparatively good, was never of course a properly traced or constructed line in the modern sense; but like everything else here, it has suffered considerably from neglect, and is now a very breakneck affair. As rather quaintly observed in a petition given me by some of the Nugur trades people. "On this ghaut there is a place called Ani-geri (elephant drop) where one bullock may go, but if two be allowed to go there is great danger."

13. Without however pursuing the subject further, I think it may be assumed that with the cessation of the Ikerry Raj, and the city of Nugur as the centre of trade, the deterioration of this tract gradually set in; this then is apparently the first cause.

14. In its days of prosperity, an enormous alienation of the very best lands in the country seems to have taken place in the shape of grants for agrahars, and to this in the next place must apparently be attributed much of the present state of matters. It would be too much to expect that the owners of these delightfully shady and rich retreats, each of the very garden of Hesperides, should court official enquiry, or wish to be disturbed by modern notions of development. Captain Cotton has, however, remarked so much on the general ignorance of the native officials as to the actual state of this part of the country, that it is only necessary for me here to point to a class of men who, though perhaps actuated by no evil motives whatever, have had all their instincts enlisted on the side of keeping away intrusion of all kinds.

15. To this as much as any thing else, I cannot help thinking is attributable, the fact of this part of the country becoming the gigantic "sleepy hollow" we now find it. When I asked the amildar of the city of Nugur, why paved roads had been made over the part of the hills on all sides, instead of level ones round their bases as they might have been, he answered that they were made so in order "that horses might not come." Again, why he had not shewn Mr. Bowring when he was there, or any Superintendent, the stone bridge which Captain Palmer and I found on the stream between Nugur and Futtehpatt, he said, "he had not been asked about it" and so on. He was perfectly civil and obliging, yet the exertion of even going with us as far as Hossangady Ghaut was too much for him. All we met were pretty much of the same calibre. Hence with the combined efforts of ignorance, occasioned by self interest on the part of the leading natives, and by the gross superstition of the lower orders, this portion of the country has come to be looked upon with indescribable horror by outside natives, as a land of darkness and infested with troops of demons.

16. Again, either from the neglect of much of the previously cultivated land arising from the above, or from some hitherto unexplained cause, the tract is apparently much more unhealthy than it used to be in former days.

17. With labor almost unattainable, and engineering difficulties of no ordinary kind to contend with, and further with many urgent calls for outlay in other directions, it was only natural that in the schemes hitherto undertaken, and in great portion developed, economy had to play a principal part. Easy routes and lines of country have been taken, instead of those most essentially called for by the condition and requirements of trade. The city of Nugur was thus left wholly out of these schemes, whereas to my mind it should have formed the centre and main-spring of all that was done, and everything so far as I can now judge depends on restoring it, as much as possible to its former position at least in the matter of trade.

18. This was the main point elicited by my enquiries on the spot. The Nugur merchants before alluded to, in their petition "humbly beg to state that there being no roads from here to Anunta-poor, from here to Teerthhully, and from here to Cundapoor in the Canara zillah, we suffer great inconvenience of * * * and we are obliged to bring our things in bundles on heads with greatest difficulty from Saugur, Theerthhully, &c. * * * Every year we are paying yaroo kundayem on account of road repairs in this talook, but we see no roads existing."

19. The same opinions I heard everywhere expressed above the ghauts, and on my proceeding to Cundapoor on the coast, I found the same to be the prevailing idea there. Mr. H. Sewell, the Deputy Collector, (with head quarters at Cundapoor) wrote as follows in reply to my enquiry:—"I have been at Hossangady lately, and the traffic on that ghaut (by bullocks of course) struck me as being greater than on the Cooloor or Augoomby Ghauts in spite of the bad road. If it was opened out, I am sure it would be of the greatest possible benefit * * * I should decidedly think that if the communications with the three main ghauts, Cooloor, Hossangady, and Augoomby were made perfect first, the other ghauts might be allowed to wait."

20. Spite of the fearful state of the present native Hossangady Ghaut, Captain Palmer and I found several hundreds of bullocks, with only a man's load each, half slipping, half rolling down the dreadful road, or struggling up unladen, shewing a vitality in the trade that baffled every impediment. Numbers of the poor beasts break their limbs, and numbers more die. All the animals we met had the most careworn faces, and were altogether so miserable, that a single glance was sufficient to shew that their strength had been entirely overtaxed.

21. Major H. M. Elliott, Deputy Superintendent of Shimoga, informs me that from some returns prepared a few years ago by Mr. Numboor Krishniah, 72,449 bullocks made use of this ghaut in 1845-46; 58,348 in 1855-56; while the amildar and other well informed people put down the yearly number now making use of it at from 20 to 25,000, the traffic consisting of grain, paddy, piece goods with a little sugar, coffee, and iron. Shewing the effect of outlay on repairs, he also mentions, that while owing to the bad state of the roadway in 1849-50, the returns gave the total number of bullocks at only 29,779; the next year owing to attention being then given to the work, the number rose to 63,376, and the year following to 71,046 * * *. The conclusion naturally drawn by this officer is, that if this "ghaut is only kept in moderate repair," the people will flock to it.

22. I not only entirely concur with the joint opinion of Major Elliott and Mr. Sewell, but as before observed, I would make Nugur the centre from which communications should radiate in every direction, and that this is quite feasible, I shall now endeavour briefly to show.

23. The city as may be at once seen on reference to the map, is situated in a kettle of hills by which it is commanded on all sides. The bad defensive position led, I have no doubt, to the real gates being placed at Futtehpatt to the north, Kowlidoorg S. E. and Hyderghur S. W., thus barring all access at considerable distances from the central fortress, and the roads to which were purposely led over the brows of the intervening hills, to allow of point after point being defended if requisite. The place having in fact been selected chiefly with a view to trade, its weakness in a strategical point of view had to be corrected by the creation of powerful outworks (independent fortresses in fact) and difficult approaches. These approaches, which are all shewn by the double black lines in the Atlas sheets, consist of a series of steep ascents and descents, for the most part paved with round smooth hard stones, and the nature of which will best be gathered from the fact, that all our horses knocked their shoes off in seven days. Once in Nugur in fact the only wish one could possibly have, was to get out of it safely and quickly. For myself at least I did not feel the slightest wonder, at its having been left entirely out of the divisional system of communications.

24. Pack bullocks being the only locomotive agency over the whole country in olden days, it would be quite compatible with these fearful approaches to believe that Nugur had been the great centre of trade in these parts, but my impression is that these roads were not the ones used for traffic. In fact I think that trade must have come in by level roads leading north towards Saugur, and south east towards Teerthhully and Baulay Honoor, in exactly the directions I would propose now to open communications.

25. Captain Palmer and I, as I find noted in my journal 30th January, inspected the banks of the "main stream of the valley with the object of discovering whether it would be possible to take a road along its right bank, and out through the gap towards Northern exit from the basin. * * *

"Mavinhulla instead of carrying the line as now over Futtehpatt * * * not only does there exist no engineering difficulty, but to all appearances the new road can be traced at almost a dead level round the west base of the hill, but in actual length it will be found as short as any road with easy gradients taken over Futtehpatt Hill." This observation made after cutting our way through jungle along the right bank of the stream, has been more than realized by a subsequent examination of the same ground, made jointly by Captain Palmer, and Major H. M. Elliott after the ground was cleared.

26. These officers not only found their way up the valley by a perfectly level road, but discovered some way down, and spanning the stream, an old stone bridge buried in the depths of the jungle and which probably had not been used for a century or more. It was partly destroyed, but consisting like others in the city of Nugur of stone piers and girders, it will require no great expense to repair and turn to account. In fact it apparently lies in the direct line to Saugur via Mullally and Avinhully.

Again turning to my journal I find what on the same morning "wishing to settle the other point, viz., the possibility of finding a line S. E. towards Teerthhully, we turned back and rode some 3 miles along the stream in that direction. The result was quite favorable, both right and left banks being level and practicable for a cart road, though of course rough in places and covered with jungle. At two miles

“from the junction of the streams, we found a capitally executed bridge consisting
 “of stone girders and cut stone piers, the existence of which does not appear to have
 “been known before. This our guides called the Hilkoonjee bridge, which though
 “exposed to centuries of neglect, is now perfectly good, and requires very little to
 “make complete. It has nine openings each $8\frac{1}{2}$ feet wide, and piers 15 feet high
 “by 6 feet thick. The roadway is 12 feet wide, but the length of the piers will
 “admit of this being extended to 18 feet, which is quite ample.

28. Captain Palmer has since followed up the indication thus given, and not only found that a level line is obtainable here, but, what was almost unexpected, that a gap exists through the chain of hills N. E. of Kowlidroog which will allow of the road shewn by the double dotted red lines, being taken almost at a dead level through to Teerthhully. It would appear by his account that the saddle shewn in the map has not only no existence, but that it is a paddy flat. Not only does no engineering difficulty whatever appear to interfere with these northern and south-eastern approaches to Nugur, but the roads themselves are perfectly level and, what is almost more to the purpose, the two chief bridges are ready made to hand and only call for trifling outlay. I am satisfied, moreover, that these latter works must have been somehow connected with the old commercial routes to Nugur, though long buried in the jungle, and one at least of them entirely forgotten.

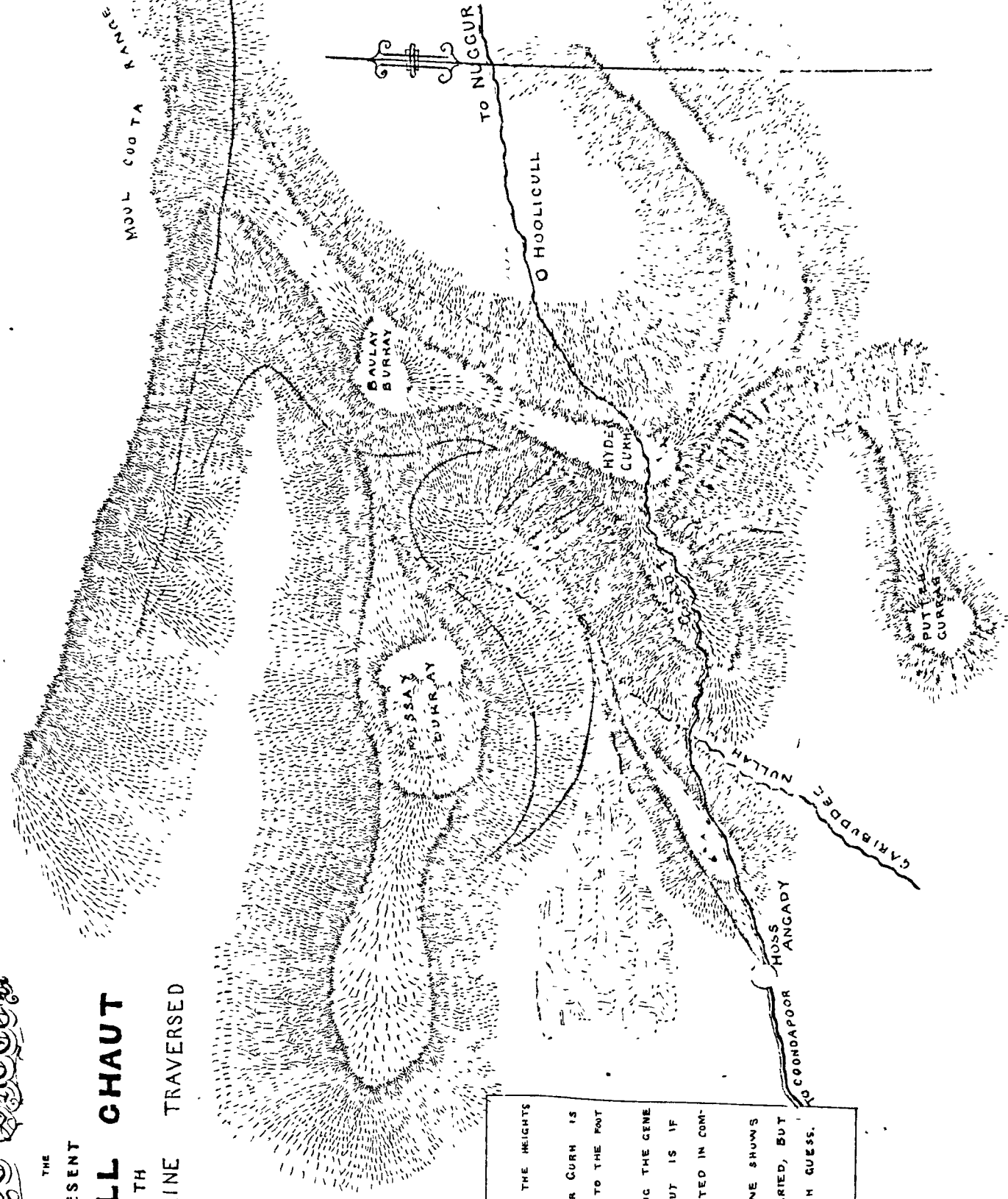
29. The present S. W. approach to Nugur is very much the same as the others, destructive to human patience and bullock existence. Yet there is a new and easy line to the westward, as shewn by the double dotted red lines on the map. It will be observed that there is actually no difference of level between the Nugur bungalow and Hoolical, the point east of Hyderghur, (the top of the Hossangady Ghaut) nor excepting at one place, is there the slightest difficulty about gradient in this new line. The credit for selecting this is I believe entirely due to a fine old potail Soobanah, who not only took us over the line but shewed us the direction it would be advisable to take in constructing a new Hossangady Ghaut suitable to cart traffic, and which I shall now advert to.

30. Any detailed description of the old ghaut, and the new line which it appears desirable to follow, would be out of place. I shall therefore confine myself to some brief observations, on the accompanying eye sketch of the ghaut mountains at this point, and to which I would request a reference.

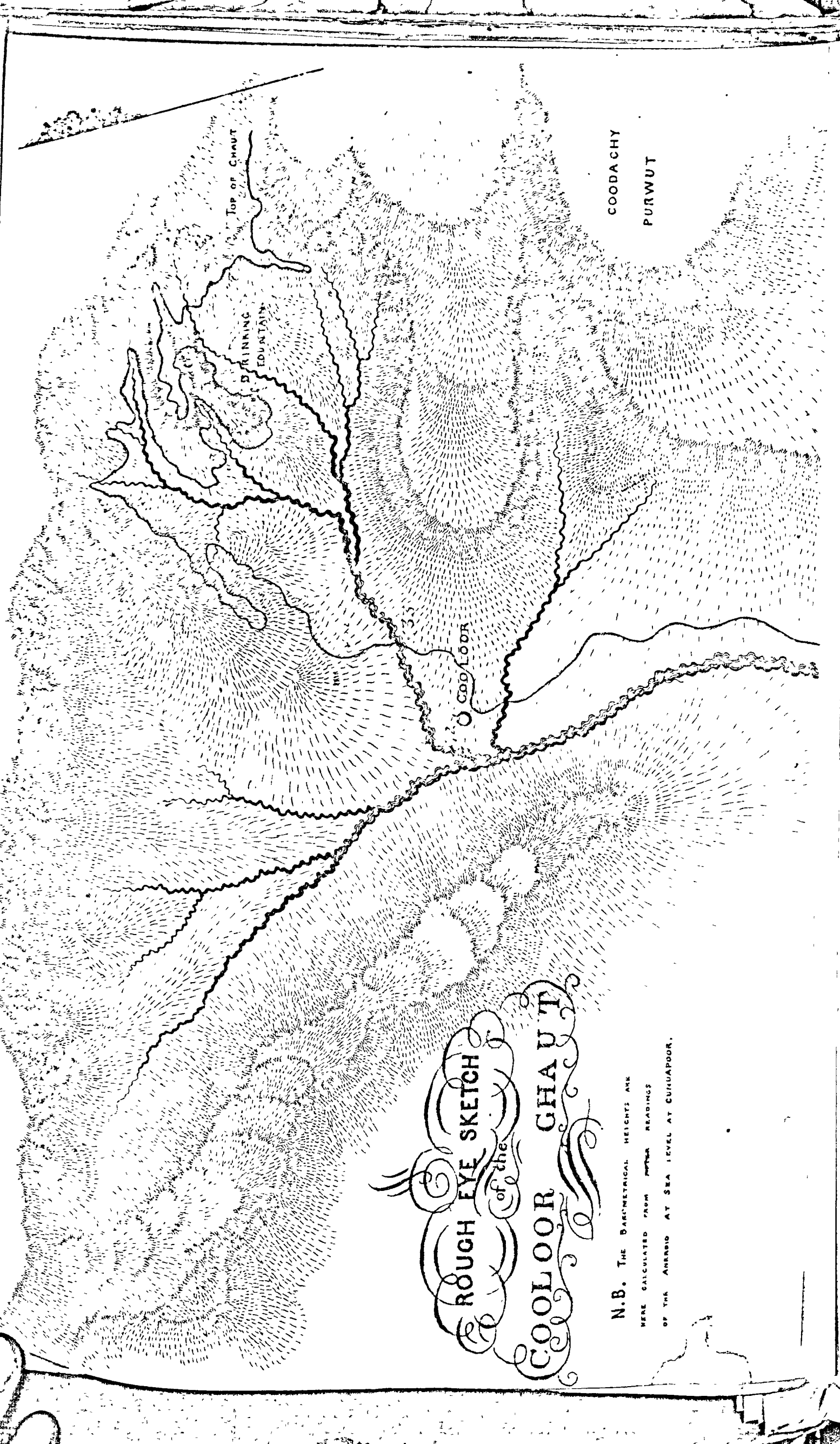
31. Here it will be noted that while the old road rises 120 feet from Hoolical to Hyderghur—which is a simple fortified barrier at the top of the mountain—the ghaut takes straight by a long spur towards Hossangady, wriggling like a snake down some 1600 feet in $3\frac{1}{2}$ miles, with gradients chiefly ranging from 1 in 3 to 1 in 6, the surface having been originally paved throughout, but now in dreadful disorder.

32. Precipices right and left prevented all lateral expansion for zigzagging along this line, but it was clear from the nature of the ground traversed on our return (shewn by the black dotted line) that these could be avoided, and so far as could be judged, a beautiful ghaut, with little rock and no precipices whatever, could be taken at 1 in 22 if requisite, along the course of the red line which emerges at a much better point as regards Nugur than Hoolical. Of course a prolonged study of the ghauts in this neighbourhood may lead to a modification of this proposal, but I am quite satisfied that the line now indicated, will work out into a very fine road fit for cart traffic.

OF THE PRESENT HOOLICULL CHAUT WITH ALTERNATIVE LINE TRAVERSED



N.B. THE FIGURES IN RED SHOW THE HEIGHTS ABOVE SEA LEVEL BY AMERID
FROM HOOLICULL TO HYDER GURN IS ABOUT 1½ MILES, AND FROM THAT TO THE FOOT 3¼ MILES MORE.
THE DOTTED LINE SHOWING THE GENERAL ROUTE WE TOOK FOR NEW CHAUT IS IF ANY THING A LITTLE EXAGGERATED IN COMPARATIVE LENGTH.
THE CONTINUOUS RED LINE SHOWS HOW THE CHAUT MIGHT BE CARRIED, BUT OF COURSE THIS IS ONLY A ROUGH GUESS.



33. Probably half the line (some 7 miles from top to bottom) will lie in Mysore, and half in Madras. As seen in the map, no Madras road at present leads from Cundapoor—or rather from tide water—to Hossangady, the question of making a ghaut Madras side.

with proper approaches from the west affects that presidency as well as Mysore.

34. Having now endeavoured to show the desirability as well as practicability of establishing a system of communications radiating from the city of Nugur, I beg to offer a few remarks as to the extension and connection of these lines, with the net work of roads already existing in this province.

35. The first and most important is the projected northern outlet to Nugur, which, while joining the main eastern approach to the Projected Roads, North and East. Cooloor Ghaut at Mullalee, can be prolonged to Saugur, which it has long been considered desirable to unite with Nugur.

36. The ground is all easy, and the Ikerry hills (which are the only ones met with) are much easier than would be supposed from the map, where they are made to look much too formidable. At no distant time it may be considered desirable to give Nugur even a more direct connection with Shimoga, than that leading through Anantapoor, by taking a line through Hoomshee which is rather an important place; but I hesitate to propose such a road at present, as the Shunkur range of hills running north and south through Coomsee, would require an undue outlay to cross. Some heavy ghaut work will probably in fact be required here.

37. It will also be quite easy in future to connect Nugur if desirable direct with the Cooloor Ghaut, by a road passing straight over Caulsossy Pett, as after traversing this line we found no engineering difficulty whatever to exist. The topography of the atlas sheet near the village of Bysa is defective, there being an outlet to the Nugur valley in this direction over a low saddle. For a considerable distance along here, there is a traced road—another of Le Hardy's I presume.

38. It is understood that the Deputy Superintendent has quite lately, with the Executive Engineer, connected the trace for a plough tax road through Mavinhulla-Mullalee with Lukshmipoor, which is the termination of the southern branch of the approaches made by the Madras Government to the Cooloor Ghaut.

39. This latter work which has been very skilfully traced and well opened, (see annexed eye sketch) only needs to be metalled and to have some rock removed, with a little widening in places, to make it quite fit for cart traffic. As yet it has hardly ever been used by wheeled vehicles, but as the bridging of the approaches in both sides is now being completed by the Madras Government, it will soon by means of the road through Mavinhulla be placed in complete rapport with the Mysore system, and though undoubtedly very inferior in position, so far as I can judge, to the Hossangady Ghaut, must undoubtedly prove a great artery of trade. Tide water is reached at Wondasa, and two or three hours convey passengers or goods to Cundapoor by water from that place.

40. This disposes of the northern approaches to the city of Nugur. Regarding that which I have proposed to lead out south-east towards Teerthhully, it may be observed that it is one of the roads specially asked for by the Nugur trades people, and

its execution as before mentioned will be singularly easy, there being apparently no engineering difficulties whatever to contend with. So far as I can judge however, its chief value in a combined commercial and administrative sense, will be ensured by this being made a thorough line *via* Teerthhully, Coppa, Buggounjee, Baulay Honoor, so as to fall into the Chickmugloor-Wastarah road, thus connecting the head quarters of the Cudoor district with its north-western talooks.

41. As it will be perhaps more convenient to view this latter position of the line from the Chickmugloor side, I would now solicit a reference to the map on which the proposed road is shewn.

42. In days gone bye Captain Le Hardey traced a road across the mountains in this direction to Hurihurpoor, and ever since pack bullocks have apparently with their usual pertinacity, and in spite of most serious obstacles, been forcing their way across this difficult country. Captain Palmer explored this route three years ago, and not long since Captain Acton endeavoured to get a grant for a road. Some funds from the plough tax having at length become available, Captain Lindsay, the present Deputy Superintendent, has devoted much time and attention to good purpose in smoothing the bullock track, and the result is already most encouraging.

43. I find that Captain Acton in his No. 130 of the 9th February 1865 to the Superintendent of Nugur calls this road "one of the most crying wants of the province," and states his opinion that if a tramway were made to Hassan and Chickmugloor, the construction of this road would pay as by it "all the coffee, spices, sooparee, betel and timber" would be brought in. To more purpose he shews that wretched as the existing communication was, it was used by 36,000 pack bullocks in the year, and that the traffic amounted to 57,580 maunds, of which 44,500 consisted of sooparee.

44. When to this is added the fact that during a considerable portion of the year, the only communication between the head quarters of the Cudoor district at Chickmugloor and Hurihurpoor, is by the circuitous route *via* Santawara, Terrikeray and Luckwullee, it cannot I think for a moment be doubted that from both administrative and commercial points of view, this road is most urgently called for.

45. If then the connection of Nugur with Teerthhully on one side, and of Chickmugloor with Hurihurpoor on the other as viewed from either terminus, be accepted as absolutely essential, no argument is required in favor of the short connecting link between Teerthhully and Hurihurpoor to establish the through communication. It appears in fact to follow as a matter of course.

46. I shall now therefore without further preface advert briefly to the physical peculiarities of this line, as its construction promises to be more difficult than any of the others above adverted to, and at starting I would solicit a reference to the annexed section, taken with an aneroid along the route followed by Captain Lindsay, Mr. McKennie and myself. The vertical scale I need hardly observe is greatly exaggerated in order to show at a glance the variations of level.

47. The first difficulty starting from Chickmugloor is the passage of the watershed between the northern and southern rivers in the neighbourhood of Wastara, as the fall into the catchment basin of the Budra is both great and rapid. From Dipkul where our camp was (about quarter of a mile from Hoolloor on the map) the

SECTION OF THE COUNTRY

BETWEEN

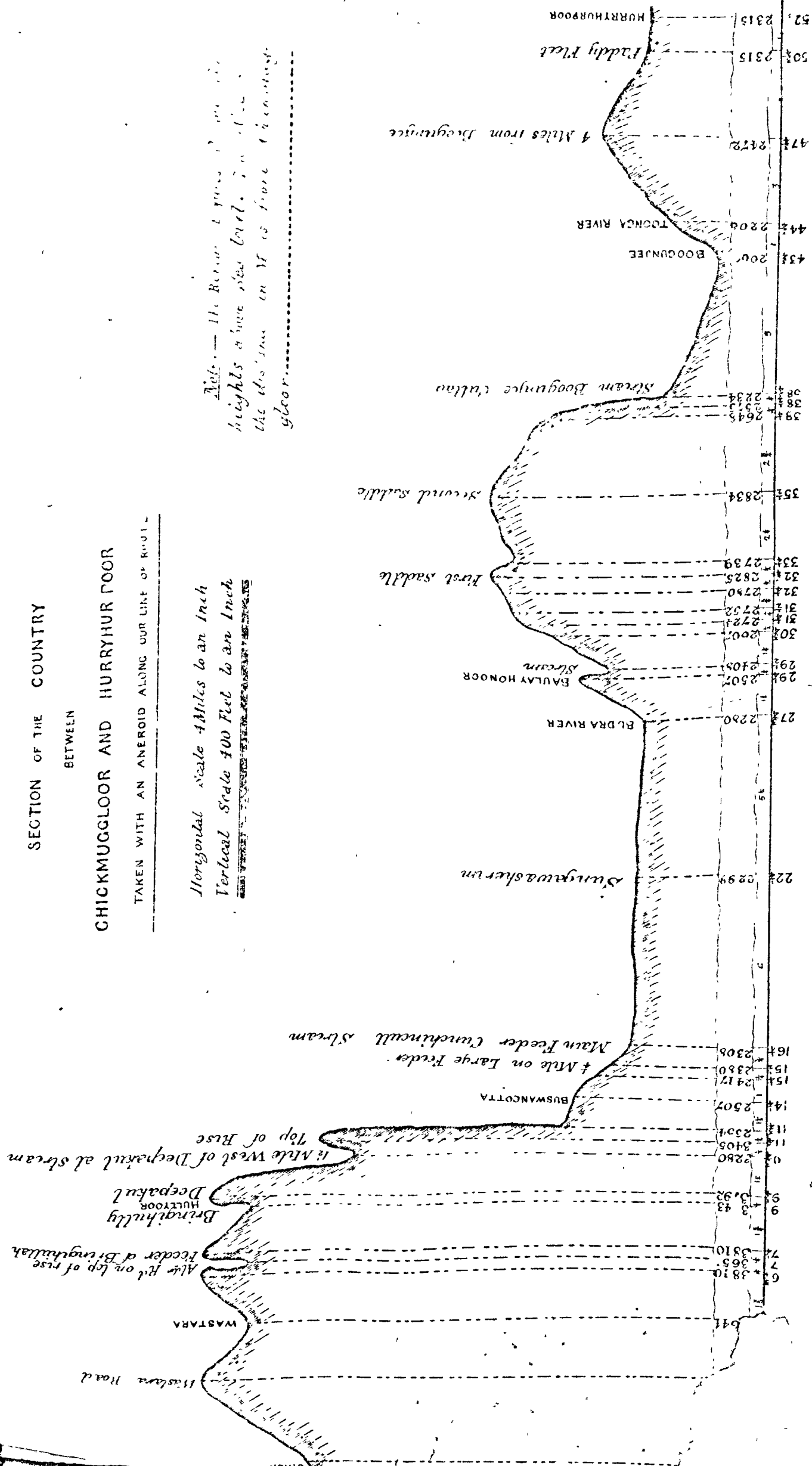
CHICKMUGGLOOR AND HURRYHUR POOR

TAKEN WITH AN ANEROID ALONG OUR LINE OF ROUTE

Horizontal Scale 4 Miles to an Inch

Vertical Scale 400 Feet to an Inch

Note:—The River is shown in blue
heights above sea level. In the
the distance in it is shown the contour
gloor.



descent in $2\frac{1}{2}$ miles to the stream under Cunchindroog, was for instance no less than 1,258 feet.

48. We all agreed in considering that the projected road must take more to the westward, striking the lowest point in the saddle separating the north and south streams; and Captain Lindsay having taken this route on his return to Chickmugloor wrote to me as follows:—"On my way back here, I came over Cunchindroog and "looked down on the valley. It is just as I supposed. The line should be brought "along the base of the droog for about two miles, where it will meet an old trace "leading up a gentle ascent to Aldoor, thus avoiding the whole of the difficult coun- "try about Hooloor."

49. On the strength of this assurance, I have given the trace of the proposed road joining the Wastara road, some miles westward near the Beringahulla. I do not myself imagine that the portion immediately below Cunchindroog will in actual working prove as easy as supposed by Captain Lindsay, but there can be no doubt he is quite correct, as to this being by far the best route to take for any cart-road. I calculate roughly that there will be 5 miles of road-making from the Beringahulla to the saddle, and then 5 miles of ghaut down to the base of Cunchindroog.

50. The foot of Cunchindroog reached, there is no engineering difficulty till midway between Baulay Honoor and Buggounjee, where the high saddle separating the Toonga and Budra feeders at the point has to be crossed.

51. The following extracts from my journal will show the nature of the intervening ground, i. e., from the Line leading to Baulay Honoor. "From this point the road, although winding a good deal, keeps a fair enough "level to the place marked "Busswan Cotta in ruins," at which place, or rather a "hamlet hard by, are met the first signs of civilization in the shape of a few paddy "fields.

52. "A mile more of the same undulating road brings one to an open rising "ground covered with paddy fields, and a quarter of a mile further on to a consider- "able feeder of the Busswan Cotta Hulla, where a bridge of 3 spans of 25 feet each "would probably be required.

53. "Three quarters of a mile in advance, the Busswan Cotta Hulla itself is "crossed, and here as I roughly judge an iron lattice bridge of 100 feet span will be "required. The forest passed through contains some fine shafts of Nundy (*Lager "stramia Micro-carpa*), Muttu (*Terminalia alota*), Honay, (*Pterocarpus marsupium*), "Beety (*Dalbergia latifolia*), and other timbers with which I am unacquainted.

54. "The road still follows after this the course of the stream up to Sangwesh- "waram, undulating over forest-clad spurs but pretty straight, and crossing no stream "to speak of.

55. "Leaving Sangweshwaram the line crosses a number of low spurs, and es fairly straight for Baulay Honoor over ground which though undulating, its no engineering difficulty for about 5 miles, where the Budra is reached. "No stream is met with in this portion requiring a greater span than 25 "all this tract being reserved as royal forest, must eventually prove most "when the road affords the means of working it.

57. "The Budra at Baulay Honoor presents no obstacle during the dry weather, the depth not being over $2\frac{1}{2}$ or 3 feet at the ford, and during the monsoon a ferry could be easily worked.

58. Regarding the ground in advance of Baulay Honoor, I find I have noted that, "generally for $5\frac{1}{2}$ miles out of that place there is no serious engineering difficulty, but that the descent from this point (i. e. the top of the saddle before adverted to) to Buggounjee very considerable care will have to be taken with the trace, there being a fall of 600 feet between the saddle and the plain of the Toongar river."

* * * * *

59. "The ascent from Baulay Honoor to this cannot I think be avoided, as it is to all appearances the lowest point of the watershed of the Toonga and Budra rivers, running direct north-east from the great Calasa peak, and must therefore be worked up to.

60. "The forest here becomes exceedingly grand, and the road or rather track very steep down the northern slopes, and round the spurs of a high peak north of the saddle. Hardly a ray of sun-light penetrates to the road in this portion, and there can be no question that much careful study, of all the features of the adjoining ground will be necessary, before the final trace for a cart road can be determined upon."

61. Once the descent into the plain of the Toonga is accomplished, there remain no engineering difficulties, and my own opinion is that after reaching Buggounjee—which is a well to do place with about 25 very comfortable houses built after the Malnaad fashion, and where halut on betel to the extent of 25,000 Rs. is taken yearly—the road instead of crossing the Toonga should hug the right bank of the stream to Cooppa, and thence proceed direct to Teerthhully.

62. This arrangement I think desirable, as if ever the Toonga be bridged at Hurrihurpoor on the through line to Augoomby, the work would in that case hully, and am not satisfied as to which bank of the Toonga the road should follow, but in any case there can be no serious engineering difficulty, whatever the decision arrived at hereafter on this point.

63. Having now attempted to describe the system of roads which I would venture to propose for the earliest possible execution, it will no doubt be noticed that the system itself, while tending to restore the city of Nugur to its former position as a commercial centre, in nowise touches the portion noted on the map as the Ikerry (now the Sangur) talook,—nor again the great mountainous track S. E. of Augoomby embracing Kig, Nemaaur, Sringeri, the Calasa peak, and away south to Ballalraydroog and the Boond (or Codakull) Ghaut.

64. Regarding the capabilities of the Ikerry talook for development, serious differences of opinion exist. Captain Cotton in para 9 of his Diary of February 1845 says, after ascending the Gogdanghery Ghaut "it (the road) makes a slight descent to the fine open valley of Curroor. In this our tents were pitched, and the servants of the Nugur division had an opportunity of learning that what

"always hitherto considered a dense and feverish jungle, was a clear undulating grassy field, with only wood enough to give the cattle shelter and the people fuel, and make it one of the prettiest countries ever seen." Again para 10. "Our ride next day was through a country of the same character very thinly peopled but capable of bearing any population. This too was thought to be a jungle, and when my friend LeHardey taxed a chokedar stationed in the open valley with having complained that he was buried in a dense unhealthy jungle, his answer was "it is all the same whether there are trees or not, the devils are as thick as they can stand" by which it is clear the inhabitants have done their best to give their country such a character as shall deter all strangers from locating in it."

65. Buchanan however takes a very different and I cannot but think a more correct view of the state of matters here. In chapter VIII page 258 he observes "The amildar, who is a man of plain manners and good sense, says that in this neighbourhood dry grains have been often tried but have always failed, and that the goodness of the soil is only apparent, for in general it is very shallow and placed on a substratum of laterite which renders the soil above it very unproductive of grain. Even rice thrives ill, although the deepest and richest soils are reserved for its cultivation."

66. This certainly agrees with my own observations as I find noted in my Journal 9 February. "Curroor is beautifully situated on open swelling ground, and has some fine doopuda trees (*vateria indica*) under which we encamped. From it lead country tracks to the Goverdanghery, Hogawaddy and Carnee passes, up and down which it is said that from 50 to 100 laden bullocks pass daily, although none of the paths have been repaired or have had any attention paid to them. The people here say the ground is unfit for dry crops, and that only now and then in favorable seasons a little raggy is raised on the ground forming the margins of the paddy flats, never on the high ground. The soil too slightly covers the laterite to allow of any moisture being retained after the monsoon, and even the grass grown all over the hills is sapless and without any nutritive qualities."

67. From the washing down of the soil during past ages into the valleys, these latter in their natural condition have a very fair forest growth; the whole taken with the round grass-covered knolls, presenting much the appearance of the top of the Neilgheries.

68. A close inspection, however, shews that excepting in these spots where a deposit of soil of some depth has taken place, and much of which (was originally no doubt forest) is now under rice, the ground is extremely poor. Further,—the whole of this tract being more or less out of the line of trade, it would not I think be desirable to spend money on opening it with a system of roads. As Major H. M. Elliott in writing to me says, "somehow or other the people don't fancy Batcull as a market, and prefer going the longer journey to Gairsoppa spite of every thing."

69. The only point in fact in these regions that naturally attracts attention is Gogdanghery, Heenee and the Hussulmukky), within the reach of 18 miles from Honnaur on the coast, has been marked by nature. The vast ruins of the ancient native town on the left bank fully attest this fact. Colonel Yule in his "Cathay and the way" owing about Honnaur, the port of Gairsoppa, in describing "Ibu" 14th century, page 416. "Next day they came to Honawar

"or Onore) a city governed by a Mahomedan prince of great power at sea; apparently a pirate like his successors in later times, but an enlightened ruler, for Ibu Batuta found in his city twenty three schools for boys, and thirteen for girls, the latter a thing which he had seen no where else in his travels."

70. Fully recognizing the reasons urged by Captain Cotton, the Madras Government had an excellent ghaut traced and opened up, taking much the direction of the old Hossulmukky Ghaut, and bifurcating near its head towards Siddapoor in the Bilgee talook of Dharwar, and again towards Talgoopa in the Saugur talook of the Nugur Division.

71. At the transfer of North Canara to Bombay, the ghaut fell into the hands of that Government, and from what I was given to understand on the spot, the entire maintenance of the ghaut (15 miles to the junction and 17 miles to the Falls) is now made to depend on the proceeds of a toll placed near the foot, and farmed out I believe for Rs. 1,500 per annum.

72. This will probably account for the state in which I found this well projected and highly important work. The roadway in many places is fast going to ruin, and numbers of the temporary drains are in such a dangerous state, that it is clear the bandymen had themselves in several cases to execute their repair before venturing across. One fact will suffice to shew the dreadful condition of this ghaut. For our works at Talgoopa, shells have to be brought for lime from Gairsoppa at the foot of the ghaut 24 miles off, and for this distance the bandymen demand 8 Rs. and 8 days for each trip, with a load too of only 25 maunds or 625 lbs; the reason assigned being the bad state of the road and the numerous broken drains.

73. Regarding the other two ghauts the Goverdanghery and Hinny (the former of which alone I traversed), I need hardly say they are both used by the irrepressible bullock, who has in his eye much more the gratuitous and plentiful supply of grass and water than the scientific arrangement of the gradients. I do not in the least advocate the opening out of either ghaut in the present state of matters for cart traffic, but it nevertheless appears well worthy of consideration whether a small yearly sum should not be devoted to these and all other pack bullock ghauts, simply to remove absolute obstacles to this species of traffic, and obviate as much as possible the necessity of so appropriately applied to this species of work, I have been given to understand that the men engaged in the trade would willingly submit to a small toll to cover the requisite repairs.

74. I shall now briefly advert to the second tract of country, mentioned in paragraph 63 as being omitted from my present scheme of roads. A glance at the map will shew what a vast jumble of hills there lies about Calasa peak as a centre, and I fancy very few, excepting Captain J. J. J. the Sringeri Swami, and the tigers which infest the forests of this tract about it. For myself I only know that looking down from the top, whole belt lying between that point and stretching away from it, appears an undulating plain covered with forest, and presenting no to the road-maker, but beyond are the sharp ridges of Calasa and which certainly judging from the height of the Bababoodens cannot be feet above sea level.

75. Dense forests clothe the bases of these mountains, holding out endless promise to some pioneer of civilization yet to come, but the grass-covered hills emerge from these at such steep angles that beautiful as the whole is artistically, it must be pronounced decidedly "ugly" in an engineering sense. To be brief I would rather leave it for some future Chief Engineer to deal with. Even the present projected system of roads, is more probably than I shall ever see carried out.

76. Before offering an opinion as to the actual extent of work projected, and the mode of carrying it into execution, it appears desirable to show concisely the present state of the communications, whether completed or in hand in this portion of the Nugur Division.

77. With regard to the main lines centering in Shimoga, the road to Hurihur, along which all the traffic of Chituldroog and Dharwar passes to Mangalore, is in fair order and only needs a bridge at Honully, and a partial retrace of the Malla Bonoor Ghaut to make it very complete. Its continuation *via* Mundgudda and Teerthhully to Augoomby is bridged throughout; much of it is in excellent and most in very fair traffic order. Regarding the Augoomby Ghaut I have already reported in my No. 723-64 of the 6th February 1867, the road-way though narrow and defective in portions is susceptible of improvements which are now being estimated for. It will never however be thoroughly satisfactory.

78. The second through line centering in Shimoga and leading on one side *via* Benkipoor and Terrikery to Bangalore, and on the other *via* Coomsee, Anantapoor, Saugur and Talgoopa to Gairsoppa, only requires the restoration of the Wurda bridge at Saugur (a work that should be finished in a month or six weeks) with the completion of a few drain bridges, to make it a fairly complete communication fit for traffic at all periods of the year.

79. The third road from Terrikery to Augoomby *via* Luckuwulli and Copp, is also in good order. It unfortunately crosses both the Toonga and the Budra and at these places is unbridged. The only other stream which may now be said also to be practically unbridged on this road is the Begar stream, half way between Hurihurpoor and Augoomby. The Executive Engineer has orders to prepare a design for this work, for which possibly an 80 girder may be requisite.

80. Regarding the branch line from Terrikery to Chickmugloor *via* Lingudhully and Santawara, an estimate for raising the whole of this in class is now being worked out, and the new ghaut at the last named place will soon it is hoped be opened for traffic. From Chickmugloor by Wastara and Moodghery to the Bhoond Ghaut, the road though sufficiently good for fair weather traffic requires much rectification, and an estimate for this—with the completion as far as possible of the Bhoond Ghaut—is now under preparation for next Budget.

81. Of the cross roads shewn by double red lines on the map; most of these have only lately been commenced from the plough tax funds, excepting two, viz., that connecting Yedhully and Mundgudda, and that leading from Teerthhully by Hoomsheo of which are being completed by this Department. Viewing the whole of the existing communications, it will not I think be that they will be complete in every respect throughout in two and at the end of that time the Toonga and Budra rivers,

where crossed by the Terrikery-Angoombee road, and the Toonga Bhudra at Honully will alone remain to be bridged.

82. In carrying out the system of new roads proposed, I think that considering the heavy demands for works in other portions of the province, it will be necessary to adopt the principle of leaving all the lines which present no engineering difficulty to be dealt with from the plough tax funds, (excepting of course important bridges) while the actual ghaut and difficult parts are alone taken up and executed from the Budget of this Department.

83. Moreover as the strength of a chain must be tested by that of its weakest link, it should I think further be recognized, that while it will be quite sufficient to finish all the roads in the flat to third or even fourth class standard, the ghaut portions—which must in all cases limit the load carried by each cart along the whole line—should be made as complete as possible, i. e., properly bridged, drained and metalled throughout.

84. The actual lengths of the new roads thus classified would, so far as I can judge, be nearly as follows:—

Lengths in miles.		I. Actual ghaut roads to be undertaken by the Department of Public Works—			
				Miles.	Total Miles.
(a.)	Half of Hossangady Ghaut, the lower half being executed by Madras	..	..	3	5
	Portion on east face of hill, say	..	..	2	
(b.)	Cunchiculdroog Ghaut.	..	..	5	9
	Allagaishwara Ghaut, S. E. of Buggounjee.	..	..	4	
(c.)	Crossing Ikerry range, say.	..	..	3	3
Total of actual ghaut work 17 miles.					

II. Difficult portions of road other than actual ghaut work which it may nevertheless be desirable for the Department of Public Works to execute, say in all 15 miles.

III. Exceptional bridging also to be taken up by the Department of Public Works. It is impossible to estimate this in the present state of information, but it cannot on the whole of the lines (omitting of course the crossing of the Toonga and Budra rivers) amount to more than 500 feet.

IV. The total lengths of the several roads will be—

(a)	From Wastarah <i>via</i> Coppa and Teerthhully to Nugur	80
(b)	Nugur to Hoss Angady	20
(c)	Nugur to Saugur	30
(d)	Anantapoor to Lukshimpoor	25

Total.. ..155 miles.

Deducting heads I and II from this total length, viz., (155—32) = 123 miles to be constructed from the plough tax funds.

85. The probable cost may be assumed at 10,000 Rs. for each ghaut road; 3,000 Rs. for each mile of otherwise difficult lines; foot of special bridging (all of which must be iron lattice work or and Rs. 1,000 a mile for third or fourth class road executed from under the Deputy Superintendent, the result of which will be—

I Debitable against Department P. W.		Rupees.
17	Miles of Ghaut road at 10,000 Rs. ..	1,70,000
15	Do. of difficult portions at 3,000 ..	45,000
500	Running feet of special bridging 1,50,000 at ..	300
Total Rs.—		3,65,000
		Rupees.

II. Debitable against Plough Tax 1,22,000

122 miles at 1,000 Rs. a mile

86. If the work be spread over five years, the yearly charge against the Department Public Works would be 73,000 Rs. and against Plough Tax 24,500 Rs., sums which will appear moderate enough for insuring such great and lasting results, and which I would submit every effort should be made to ensure within the period specified.

87. Among the several subsidiary considerations it may be as well to state at once: I, that a specially selected officer will be required for tracing and estimating these lines, with at least too thoroughly trained and trustworthy surveyors; II, that early arrangements would have to be made both on the coast and in Mysore for raising the requisite labor Corps, there being no indigenous labor; III, that shelter be erected at suitable places for all concerned, and every precaution adopted for obviating the extreme unhealthiness of the climate; IV, that double travelling allowances and other indulgences be guaranteed to every man employed.

88. Until the scheme itself meets with approval, it would of course be out of place to consider the details of these several requirements, but I would nevertheless press most earnestly on the Commissioner's consideration, the necessity of at once moving the Government of India to extend the privileges already granted to Coorg in regard to travelling allowances, to at least men engaged in mulnaad talooks of the Shimoga and Cudoor divisions, the present expenses of travelling being double if not treble those in other parts of Mysore. Our subordinates in many places can get little or nothing to eat, and often not a bullock, cart, or cooly to carry their baggage. Without shelter, and with fever and empty stomachs, it is not wonderful that man after man has taken to drink. From death, desertion, sickness and misconduct not a single old incumbent is now to be found, and all look with horror on the thought of being sent to these places. I cannot therefore disguise the fact that the very first consideration in endeavouring to open up this part of Mysore, is the improvement of the condition of the subordinates selected for the work, and next the instilling of a more friendly bearing into the minor revenue officials than at present exists.

89. If the Commissioner approves generally of the scheme I have ventured to bring to his notice, I would suggest a reference to the Governments of Madras and Bombay on the points specially adverted to.

90. I would now willingly conclude, but cannot forego the opportunity of bringing to notice a want which I have no doubt has been felt by every revenue as well as Public Works Officer whose business has lain in this part of the country, namely, that of a topographical survey. Captain Cotton in advertising to this says, "that which cut so fine a figure on the printed map the Indian Atlas in market towns of some respectability; but had the survey order of a Railway Company to give fictitious value to the deceived me more completely. The country is a ruin along each town seemed poorer than the last."

W. H. 4/5/68
 Pressy Dept. 1882 L. 153.

91. In travelling through the Ikerry talook, I searched in vain for a single name of a town excepting those of Honnaur and Carroor; and whether it be from the utter disappearance of many hamlets, or from other cause, they have either certainly now no existence or are unknown by the names on the map. In fact in this respect it is almost entirely worthless.

92. With reference to the accuracy with which the topographical features have been delineated, two instances will suffice:—

I. The locality of the world renowned Falls of Gairsoppa is not indicated, and the features of all the ground to the south are so far as I can judge entirely wrong.

II. Running the finger along our road from Talgoopa straight to Saugur, the map is found to shew two great spurs of the Ikerry range crossing the line; I think I can safely say that these spurs have no earthly existence. There is not I think in fact a rise of 20 feet in the whole of this portion of the road.

93. Wherever I have gone I have found the grossest and most palpable blunders in the topography of this, which is our only recognized map at present, and the evils resulting in an engineering sense have been immense: I therefore do not hesitate to solicit the earnest consideration of the Commissioner as to the necessity there exists for an entirely new topographical survey of Mysore, and most especially of all the portions adjoining the Western Ghats. A new and accurate survey would be a boon to all engaged in planting and trade, as also of the utmost value to every administrative department in the province.

I have the honor to be, &c.,

(Signed) R. H. SANKEY, MAJOR, R. E.,
 Chief Engineer of Mysore.

BANGALORE,
 28th May 1867.

General No 2193 1868/69.
 Civil Works No 54
 Communication

Mysore Commissioner's Office.
 478

The Secretary to the Government of India
 Public Works Department
 with the Governor General
 Head Quarters. Simla.
 Camp Bagapilli
 13th July 1868.

Sir, I have the honor to submit, for the orders of His Excellency the Viceroy and Governor General in Council, the marginally noted correspondence relating to the best means of improving the communications between certain fertile talooks of the Hill Country of the Nagar Division, on the one side, and the western coast and the Plain talooks of Mysore on the other.

2. These letters will be found very interesting, and well worth perusal, while I find it impossible to condense the information given in them into a brief summary, which might place the whole subject at a glance before the Government. Indeed, the question has occupied attention for more than 30 years, and although, owing to the construction of the Gairsoppa and Colloor ghats by

From Chief Engineer
 No 2566 of 28th
 May 1864.
 To the Secretary
 to the Government
 of India
 No 90
 of 25th May 1868.
 From the
 12th of 18th June 1868.

St. M. Government, and the Agumbe
ghat by the Mysore State, trade, has
received a certain impetus. It must
be admitted that much remains
to be done, and that while a certain
line of country has benefitted,
secluded talooks, such as Nagur
itself, are even worse off than before.
The reason of this will be apparent
on an inspection of one of the maps
submitted by Captain Kay, which
shows that, notwithstanding the
existence of the three ghats above
mentioned, the country to the
immediate north and south of
these, is so hilly and rugged,
that the people find it more to
their advantage to take their
produce down the old precipitous
passes near the heads of which
their villages lie, than to attempt
to cross the difficult ground
intervening between them and
the ghat roads. This is a fact
to which I can bear personal
testimony. It is equally certain
however, that it would be pre-
mature, if not inadvisable, to
attempt to put in order all
the old passes down which a small

traffic finds its way to the coast,
and as the expense entailed in
constructing ghats is enormous,
owing to the difficulty of the work,
and the dearth of labor, it is es-
sential to select that parti-
cular pass in the first instance
which is most urgently demand-
ed by the people, and in the
formation of which, as a ghat
road, all parties agree.

3. There is no difference of opinion
on this point, as the Chief Engineer
and the Nagur Superintendent,
both consider that the Kydegar
or Kosumgarai ghat, is that which
should be taken in hand, and
in this opinion I fully concur.
In older times, this and the Bidli
ghat were the principal passes
to the Western coast. Of late years
the following made roads have
been constructed 1. Gairsofpa
or mailman. 2. Collo. 3. Agumbe
4. Kodakul or Ponda ghat 5. Marm-
jerabad, the first three being in
the Nagur Division, and the other
two in the Ashtagram Division.
As regards the latter Division,
I am not prepared to say that

anything further is required. The
passes now brought to notice, which
lie between the first three Ghat
roads, are, 1. Kinnee. 2. Gowardhungeeri.
3. Kogawadi. 4. Carnee. 5. Nyder-
gark. Of these, probably the Kinnee
and the Kogawadi, are the easiest,
and the Nydergark the most difficult;
but many circumstances, men-
tioned by Captain Kay, combine
to make it desirable that the
Mysore Government should un-
dertake the construction of this
Ghat before any others. It will
be seen that owing to the pecu-
liar position of Mizurik stands
at a great disadvantage, com-
pared with other Talooks, being
at present cut off from all approach
by boats on every side save one, to
which even access is difficult,
and the consequence is, that
grain sells at half the price
which it fetches below the Ghats,
and that imports cost probably
50% more than they do in adjacent
Talooks. The people complain
loudly of their impoverished con-
dition, and accuse the Government
of neglect in not giving them

510 5
them those benefits of easy com-
munication which have been
extended to others in more
favored positions.
4. Major Sankey's letter touches
upon the wants of the whole Mysore
Division, comprising the Shroongu
and Luddoor Districts, whereas
Captain Kay confines his re-
marks to the former District
only, being desirous of making
more extended enquiries into
the trade and resources of the
latter. I need not therefore here
enter in detail upon the require-
ments of Luddoor, though I am
quite in accord with the Chief
Engineer, that a line from
Kurikurpon to Mastara, would
be of essential service, and that
it should be undertaken as
soon as circumstances will
admit. Some useful work on
this route has been done by the
Deputy Superintendent, with a
view of making it practicable
by pack bullocks, but nothing
ulterior has hitherto been
attempted. It is possible that
a complete investigation of

this part of the country by professional agency, may affect the selection of the particular lines by which the Nagar produce should be taken eastward. but it is certain, that in regard to the communication westward, the Hydergush Ghat, is the crying want of the Talook.

5. I think Captain May has shown in page 16. what lines might be most advantageously taken up in connection with this Ghat, and that of Coloor already open, viz:

1. A line from the Muddak Tank beyond Shikarpoor, on the Bombay frontier, to the foot of the Hydergush Ghat, and

2. A line from Ayanoor through the Musoor hills, to be continued till it strikes line 1. at Coloor Kuski, thus forming an approach to Nagar, as well as a feeder to the Coloor Ghat. I concur in these proposals, which are shown in the map furnished by him. These lines, with the exception probably of the piece through the Musoor hills, could be constructed by the Civil

Officers, on the trace being approved by the Executive Engineer. The portion through the hills, as well as the Hydergush Ghat, would be carried out by the Public Works Department. The additional line, suggested by the Chief Engineer, from Nagar Southwards to Beerthalli and thence to Harriharpoor might be taken up subsequently.

6. In para 82 Major Hankay has laid down what I consider a necessary principle for constructing roads in the Malabar or Hill Country, namely, that lines presenting no engineering difficulty should be dealt with from Local Funds excepting of course important bridges, the actual ghats and difficult portions of the road being left with the Public Works Department. I should not hesitate to ask the Government to allow me to supplement the Local Funds from State revenue, should it be determined that the Civil Officers

can economically spend more than the Local Funds will bear at the rate of 1,000 per mile, for construction, given in para 85 which seems to me a fair rate. 4. It is impossible however to give any accurate idea of the probable cost of the project mentioned above in para 5, but it would perhaps entail an expenditure of 1,50,000, which is not a very large sum, considering the effect which the work would produce upon the District, and the benefit it would confer upon the people, who have not reaped the advantages derived by professional traders from the main lines of through communication.

8. In para 84 Major Stanley adverts to some important considerations, which have my support. 1. a Special Officer will be required for tracing and estimating the lines, with one or two trained Surveyors. 2. for that work special labor

labor will be required. 3. Some shelter should be provided for guarding against the climate which, at certain seasons, is extremely feverish. 4. Double travelling allowances should be given. The Chief Engineer has not exaggerated the difficulty in procuring labor and supplies; but I feel sure that, if the principle referred to in para 6 is acted upon, the Superintendent will feel it both a duty and a pleasure to afford every possible assistance to the subordinates of the Department, and will see that their comfort is duly provided for. As it would be a work of supererogation for me to repeat what has been so ably put forward by the Officers, whose letters I submit. I shall content myself with drawing attention to the drafts furnished by them, and to the returns which Captain May has procured from the Collectors of Canara. The question I am grappled with, only cannot

the physical features of the
Country and existing commu-
-nications are carefully stu-
-died; but I trust that the
information now submitted
will enable the Government
to issue instructions for pre-
-paring the requisite estimates,
when no time will be lost in
getting the work put in hand.
10. The 4 accompanying maps
to be obligingly returned.

I have &c
Signed J. Bowring
Commissioner.

No 1352.C.

Government of India
Public Works Department
Establishment.

To The Commissioner of Mysore
Mimla 2nd October/68.

For In continuation of Public
Works letter No 520 C. dated

the 20th ultimo, regarding the
proposals for improving the
Communications between
certain talooks of the hill
Country of the Chuggur Division
on the one side, and the western
Coast and the plain talooks
of Mysore on the other. I am
now directed to communicate
general approval to the recom-
-mendations of the Chief Engineer
made in paras. 84 and 88 of
his Report, and referred to in
para. 8 of your letter No 2193/67
dated the 13th July last viz:-
I. Appointment of a specially
selected officer with 2 thorough-
-ly trained and trustworthy
surveyors to trace and estimate
the Lines.
II. Introduction of early mea-
-sures both on the Coast and
in Mysore for raising the re-
-quisite labor corps.
III. Erection of shelter at suit-
-able places for all concerned.
and adoption of every precau-
-tion for obviating the

extreme unhealthiness of the climate.

IV. Grant of double travelling allowance and other reasonable indulgences to every man employed.

This approval must however be considered, subject to orders on the formal applications, that will, under the usual rules, have to be submitted for sanction before they can be carried into effect.

2. I have also to state that if it is desired to begin to undertake the labor, before commencing the work, it will be necessary to submit an Estimate or Tabular Statement for sanction.

I have &c
Signed C. Dickens (all R.A.)
Secy: to the Govt of India.
Price 1/6

Wm Wiersma Colonel R.E.
Offy: Secy: to the Commissioner
in the P. & O. Dept

1868

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6393

5911
Myson Commissioners' Office
Public Works Department

To The Secretary to the
Government of Madras.

Ref: In reply to your letter No. 3445
of 3rd November 1868, on the subject
of the completion of roads leading
to the head of the Kaloor Ghat,
I have the honor, by desire of the
Commissioner, to inform you
that the subject of roads leading
to the ghats in the Nuggur Di-
vision of Mysore, is now under
serious consideration, and I
am directed to forward for
the information

Commissioner's letter No. 2193 dated
13th July 1868
Major Hankey's printed Report No. 2588 of 28th May 1867
24th Captain Hay's Report No. 1352 &c.
26th May 1868
Government of India
dated 2nd October 1868

of the Madras
Government, a
copy of the Commis-
sioner's letter
on the subject
to the Supreme
Government, covering reports
from Major Hankey R.E. and
Captain Hay, Superintendent
of Nuggur, on the same subject.

The reply from the Government
of India is also sent.

I have the honor to be

Sir,

Your most Obedt^t Serv^t

Bangalore W. W. W. Wilson Colonel R.E.
13th Coyth Offg. Secretary to the Commissioner
in the Public Works Dept^t

61B

P.W. 1868 D. 4457

Mysore Commissioners Office
Department of Public Works

187067
63931868. No. 4457

From
The Secretary to the Commissioners

Mysore
To the Secretary to the
Government of Madras

Dated 13th November 1868.

Despatched
Enclosed 16

Enclosures No. 2.

Subject

Replies to letter No. 3445
32
of 3rd November 1868, regarding
the completion of roads
leading to the Dead
Nylon that and
forwards copies of
certain correspondence
on the subject.

No 3813-7- Decr 1868
with an order

Enclosed

For the Secy to the
Govt of Madras

Ordered the record -

No 3813-7 3817

To the Secy to the Govt

Secy to the Govt

10/11/68

20th Nov 1868 R. 272

6

Aug 4457
of 1868} *Madras.*

PUBLIC WORKS.

Superintending Eng.
7th Division
&c. &c. &c.

th.

Rec

Encl.

th Dec 1868, No. 3813

Nos. 153 & 154

Letter from the Supt. to the
Commissioner regarding the con-
struction of roads leading to the
Robert Ranch - recorded.

20th Nov 1868 R. 27