

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 1776	<u>Press</u> <u>Mis.</u>
29.31	
Dated	2 - 8 - 1867.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Revenue Department,
2nd August 1867.*

Read the following papers :—

No. 29. Proceedings of the Board of Revenue, dated 15th April 1867, No. 2,381.
Read the following letter from the Acting Collector of Kurnool, to the Secretary to the Board of Revenue, dated 29th March 1867, No. 69 :—

1. I have the honor to forward a copy of General McLeod's letter, with its enclosure, for the information of the Board, and await their instructions regarding the prevention of cultivation in the neighbourhood of the Military limits.

2. I was unwilling to forward this till I could obtain some satisfactory information on the subject; the result of my enquiries I have condensed in the form of the accompanying Statement, which shews the account of cultivation, wet and dry, between the Hindry and the Tungabudra in the town of Kurnool, the dates from which it has come into the possession of the present holders, distinguishing Inam from Sary or Government land, as well as the situation of each portion of cultivated ground.

3. From this account, it will be seen, that the land is held on different tenures and not newly; and I find that of the 216.61 acres formerly held, Inam 141.61, Government 75, and partly cultivated as dry, 73.92 acres have been converted into wet; of which 45.4 acres are Inam, and 29.88 are Government.

4. Previous to the supply of water from the canal, the lands, though then generally held on the same tenures as at present, were not so much cultivated.

5. In the abstract of his report, I observe, Doctor Jackson says, fever prevailed "from October 1866 to February 1867," and then "abated." Making it appear that directly the cultivation was over or, I suppose, the crops taken in, the fever abated. He further states that it was remarked, "that immediately the wind set in either from the south or west the fever abated; no fresh admissions occurred, but immediately it returned to the N. N. E., the admissions were 6, 7 to "8 daily."

6. I infer from this that Doctor Jackson drew his inferences from Military statistics only, because they certainly are not borne out by general facts. In

	Deaths.
December 1866	490
January 1867... ..	250
February	189
March	200 up to 25th.

Though the number of deaths is slightly decreased, the fever, I believe, is worse than formerly.

the first place, taking the town of Kurnool generally, the fever can never have been said to have abated in February, and in the second, the wind does not seem to have had any effect, for the wind now prevailing is from east to south-west, and the fever is worse in the

town than it was before February, as the death returns shew.

7. The only thing that can be said regarding the cultivation here is that Acres 5-15 have been newly brought into cultivation within the last three years, and that a portion of the former cultivation has been converted into wet.

8. From my experience I do not think that there is more cultivation within the limits of the town of Kurnool, than at any other station; for example, Rajah-mundry, Cocanada, Nursapur, Ellore, Masulipatam, Bezwada, Guntoor, Nellore, Cuddapah, and in those stations where fever does occur, it is seldom or never attributed to the cultivation.

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9. It appears to me that there is always a desire of laying the blame on something, and here, because fever has prevailed, as Doctor Jackson presumes, only during the cultivation season, and when the wind was from N. N. E., he attributes it all to the cultivation.

10. The Municipal Commissioners are doing their best to clean the "dirty town of Kurnool," and I trust the improvements sanctioned* by Government G. O., dated 1st March 1867, No. 335. in Mr. Ellis's Report will convert it into a new town.

11. Should, however, the Government be prepared to enforce the discontinuance of the cultivation this year, or from the commencement of Fusly 1276, (July 1867,) it will be necessary to pay the cultivators the value of their crops; and if it is found, according to Doctor Jackson's recommendation, that fever does not return after the cessation of cultivation for one year, and the Government enforce the land from ever being cultivated again, it will necessitate the purchase of the whole of the Inam lands and compensation either in land or money to all the cultivators of Government lands, for there is no available land near, which could be given in exchange.

12. This sum would have, I imagine, to be met from the Military Budget, for it will be incurred only for Military purposes.

13. If this cultivation causes fever, it is probably owing to its being new cultivation, and if such is really the case, its feverish effects will be diminished yearly, till gradually it would lose all its feverishness, and be in no respects worse than those stations I have above enumerated.

14. This would certainly be a less costly experiment than that advocated by General McLeod supported by Mr. Jackson, and undoubtedly more practicable.

I leave the whole matter in the hands of the Board, and trust I may have such instructions that I may be in a position to furnish General McLeod with a reply to his letter.

From Major General W. C. McLEOD, Commanding Ceded Districts, to the Collector of Kurnool, dated Bellary, 13th March 1867, No. 29.

1. As the fever, which has so long prevailed at Kurnool, has unquestionably engrossed your attention, I am certain that any remarks having reference to the subject, emanating from high Medical authority, will be acceptable. I therefore do myself the honor to enclose an extract from a letter from Doctor Jackson, Deputy Inspector General of Hospitals, Ceded Districts, who lately visited Kurnool with me, in consequence of the continued suffering of the Sepoys from the epidemic, to the Head of the Medical Department.

2. Though I am not disposed to attribute the outbreak of this fever wholly to the cultivation round the lines of the native troops, because it is likewise prevalent in other portions of your district, yet I think the state of the place as described by Doctor Jackson may have greatly aggravated the disease.

3. It, therefore, becomes a matter for your serious consideration, whether the cultivation as carried on during the last season should be allowed to continue. I believe I am correct in stating that Kurnool has been always found, until lately, a healthy station, and free from fever.

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2nd August 1867.*

Extract from the Report on the prevalence of Fever in H. M.'s 28th Regiment, Madras Native Infantry at Kurnool, by J. M. Jackson, Esq., Deputy Inspector General of Hospitals, dated Bellary, 7th March 1867.

"In November when I proceeded on tour of inspection, the Medical Officer, Doctor Day, attributed it to the sudden rise of the Tungabudra river, some four feet beyond the usual boundary, and the unusual force of north-east wind which prevailed a greater part of the day; this might have in a measure accounted for the fever, but I was more struck with the amount of cultivation that had sprung up, wet and dry, within Military limits, or indeed all that large open space between the Hindry and banks of the Tungabudra, which formerly had been an open maidan; the cholera being so high that it was impossible to see people passing along, and in many places reaching above the heads of horsemen, and this extending close up to the hedges of gentlemen's compounds; indeed, the truth is, the gentlemen's dwellings and Sepoys' lines are situated in the midst of this cultivation, and the river in front and rear; it is conclusive to my own mind, that if all the space I have noted were left uncultivated and the earth never turned up, as in days of yore before the Irrigation Canal was established, nothing more would be heard of fever, such as prevailed from October 1836 to February 1867; this space being all cotton soil had become covered over with stubble grass, sand and fine earth, which had become spread over its whole surface; thus there was no effluvia or unhealthy gases thrown off from beneath, and no fever prevailed; but last year when all this land was ploughed up and brought into cultivation about the middle of the year in September the fever began, and has continued ever since; when the crops were gathered in, and the space was left open, the fever abated.

I think it will be well worthy of trial preventing the ground from the Hindry to the banks of the Tungabudra with the Irrigation Canal, Judge's house, and Travellers' Bungalow on one flank, and the Sepoys' lines, Barracks, and Hospital on the other flank, being kept free of cultivation this year, and if there should not be a similar visitation of fever next year, I think it would be as well to prevent it altogether in future. I cannot but think earth being turned up, particularly black cotton soil when fever is prevailing, can have no other than an injurious effect. I much regretted to see close to the Church, not far from the Sepoys' lines, that ploughing for this season had commenced, and I am fully impressed, that if allowed to go on to the same extent as last year, there will be a repetition of the prevalence of fever.

"It was remarked by all the residents, that immediately the wind set in either from the south or west, the fever abated, no fresh admissions occurred, but immediately it returned to the N. N. E., the admissions were 6, 7 to 8 daily. To the westward of Kurnool, there is little cultivation. To the south, the Hindry drives it from the town, and cultivation is at some considerable distance. To the north cultivation on both sides of the Tungabudra, as I have already said, from the bank of one river to the other. To the east is the dirty town of Kurnool, intersected with high walls and filthy compounds, needing much attention by the authorities."

ENCLOSURE No. 2.

ABSTRACT.—Memorandum shewing the lands situated between the rivers Hindry and Tungabudra, in the village of Kullur, Ramulota talook, for Fusly 1276.

1. The Inspector General of Hospitals and the Sanitary Commissioner will be requested to favor the Board with their remarks on Deputy Inspector General Jackson's proposals.

2. If there be in the Collector's Office any plan of Kurnool and its environs, the Collector is requested to forward it at once, marking the present cultivation and occupancy on it, and reporting the probable cost of purchasing all the private and Inam lands.

*Proceedings of the Madras Government, Revenue Department,
2nd August 1867.*

No. 30. Proceedings of the Board of Revenue, dated 19th July 1867, No. 4,566.
Read again letter from the Acting Collector of Kurnool, dated 29th March 1867,
No. 69, recorded in Board's Proceedings, dated 15th April 1867, No. 2,381.

Read also the following letters.

From the Acting Collector of Kurnool, to the Secretary to the Board of Revenue,
dated 4th April 1867, No. 75.

With reference to my letter, No. 69, dated 29th March 1867, on the subject
of the cultivation about the town of Kurnool, I have the honor to forward a copy
of Mr. Blane's letter* to Major Luard,
commanding the station in 1840, which
will clearly shew that the cultivation near the Fort is not an entirely new thing.

ENCLOSURE No. 1.

From T. L. BLANE, Esq., Commissioner, to Major G. F. LUARD, Commanding Kurnool, dated
9th October 1840, No. 262.

In acknowledging the receipt of your letter of this day's date, I have the honor to inform you
that I am not aware of any place in the immediate vicinity of the Fort where ball practice could
be carried on with safety without the erection of butts, and, considering the level nature of most
of the country about, and the high state of cultivation in which the ground about the Fort is, ball
firing on the plain would, in my opinion, not only be most dangerous, but destructive of the crops
now on the ground. There may, possibly, be some place where practice could be carried on against
the walls of the Fort, but not having my attention directed to the subject, I have not taken the
pains to look for any such place. The most appropriate place that I am aware of is the ground to
the east of the village of Kerapur against the strong hills which rise behind it, but this must be
about two miles from the Fort. If you can yourself point out any spot where you consider ball
firing can be practised with safety, I shall be happy to go and see it at any time.

From the same Officer, dated 17th May 1867, No. 132.

1. With reference to the Proceedings of the Board of Revenue, dated 15th
ultimo, No. 2,381, I have the honor to state that there is no authenticated plan of
Kurnool and its environs in the Office,

* Sent by banghy.
but I submit a tracing* from the plan,
prepared by the Settlement Department, of a portion of Kurnool and Kallur, which
is all I can procure at present.

2. The enclosed is a statement shewing the extent of Circar and Inam land
under cultivation, surrounded by the Hindry, Tungabudra, and the Irrigation
Company's Canal. Inam and private wet lands are marked with a large A., and dry
with D. near the numbers of the fields.

3. This statement embraces only the field cultivations, and not the small
patches cultivated in the compounds of gentlemen's houses, with flowers or vege-
tables, which in all measures about 8 acres.

4. A patch of ground, measuring 4 acres and 23 cents, which is a portion of
the village site, was cultivated this year with English and country vegetables by
the Sepoys of the 28th Regiment, N. I. stationed at Kurnool, without any permis-
sion from the Revenue authorities, under the impression that it is within the limits

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of the alleged Military Cantonment, but this cultivation can be put a stop to, as no
Puttahs have been issued for the land. I do not, however, recommend this course,
for it is nearly the only means of recreation afforded for the Sepoys during nearly
nine months of the year, and produces the only certain supply of European vege-
tables to the consumers in this station.

5. The estimated cost of purchase was arrived at from the sales of adjacent
lands; as stated by the owners, but there are many patches of land granted in the
time of the Mussulman Government which the owners would be excessively loth to
part with.

*Statement shewing the extent of Circar and Inam land under cultivation between the
Hindry and Tungabudra rivers in Fusly 1276.*

	Item.	Extent.	Assessment.	Cost.	Average per acre.	Remarks.
		A. C.	RS. A. P.	RS. A. P.	RS. A. P.	
Circar.	Wet... ..	20 43	20 11 0	3,932 8 0	192 7 10	The high value of Govern- ment irrigated lands com- pared with that of the Inam lands, is due to the fact that the former is good save in close proximity to, the vil- lage always cultivated with paddy and a small portion with sugar-cane, whereas the latter is poorly, scatter- ed with burial places.
	Dry... ..	20 15	14 9 2	272 14 8	13 8 0	
	Total...	40 58	35 4 2	4,205 6 8		
Inam.	Wet... ..	51 9	18 10 6	5,814 0 0	112 4 0	
	Dry... ..	91 13	8 12 6	1,377 10 7	15 2 0	
	Total...	142 22	27 7 0	7,191 10 7		
	Grand Total ..	182 80	62 11 2	11,397 1 3		

KURNOOL,
17th May 1867.

(Signed) E. TURNER,
For Collector.

ENCLOSURE No. 2.—Plan.

From the Officiating Secretary, Sanitary Commissioner, Madras, to the Secretary
to the Board of Revenue, dated 15th May 1867, No. 101.

I have the honor, by desire of the Sanitary Commissioner, to forward with
reference to the Proceedings of the Board of Revenue, No. 2,381, dated 15th
ultimo, the accompanying copy of an
Copy of Report on the station of Kurnool. Inspection Report by the Honorable
Mr. Ellis on the Military and Civil station of Kurnool.

ENCLOSURE No. 1.

ABSTRACT.—Copy of Report on the station of Kurnool.

From the Collector of Kurnool, to the Secretary to the Board of Revenue, dated
7th June 1867, No. 159.

1. In reply to the Board's Proceedings, dated 8th May 1867, No. 2,837, I
have the honor to forward a statement shewing the extent of cultivation under
the Irrigation Company's Canal from the Anicut at Sunkasala down to Kurnool.

*Proceedings of the Madras Government, Revenue Department,
2nd August 1867.*

2. It will be seen from the statement that the great portion of the land has been cultivated with wet or dry crop for a long time before the canal was opened, and that the increased area since brought under cultivation is very trifling, measuring but 17 acres and 71 cents.

3. There is no dry land which is watered from the canal.

Statement shewing the extent of cultivation under the influence of the Irrigation Canal from Sunkasala to Kurnool.

Circar or Inam.	Present irrigable area.		Deduct.						Remainder waste land newly cultivated since the formation of the Canal.		Dry crop land watered from the Canal.	
			Land originally wet.		Dry crop land converted into wet since the formation of the Canal.							
	Acres.	Assessment.	Acres.	Assessment.	Acres.	Assessment.	Acres.	Assessment.	Acres.	Assessment.		
Circar...	592 46	RS. A. P. 562 1 4	43 94	RS. A. P. 58 11 0	533 1	RS. A. P. 498 1 11	17 51	RS. A. P. 5 4 5	...	...		
Inam ..	651 53	569 8 2	177 17	287 7 3	374 15	301 10 6	... 20	0 6 5	...	...		
Total...	1,150 98	1,151 9 6	221 11	346 2 3	912 16	799 12 5	17 71	5 10 10	...	...		

Kurnool,
7th June 1867.

(Signed) T. A. N. CHASE,
Collector.

From the Officiating Secretary to Inspector General, Indian Medical Department, to the Secretary to the Board of Revenue, dated Fort Saint George, 18th June 1867, No. 2,173.

1. I have the honor, under instructions from the Inspector General, Indian Medical Department, to acknowledge the receipt of your Memorandum No. 577, and to inform you that the Proceedings* of the Board, referred to therein, do not appear to have reached this Office.
2. The Inspector General, however, desires me to direct your attention to paragraphs 5 and 6 of his letter,* printed with the Proceedings of Government, Military Department, No. 1,547, of 29th April last, for the expression of his opinion on the subject of cultivation in the neighbourhood of Kurnool.

1. The foregoing papers will be submitted to Government, with reference to their Order, dated 6th May 1867, No. 1,020, Revenue Department.

2. The irrigable area within the influence of the Irrigation Company's Canal from Sunkasala to Kurnool is 1,151 acres, of which 221 acres have always been wet, and 912 have been converted into wet since the formation of the canal. The total wet cultivation is thus 1,133 acres. In Kurnool itself the wet cultivation is 71½ acres and the dry 111, and the estimated value of these lands is given as Rupees 11,397.

3. The plot of land mentioned in paragraph 4 of the Collector's letter should be reserved for Soldiers' gardens.

*Proceedings of the Madras Government, Revenue Department,
2nd August 1867.*

No. 31. ORDER THEREON, 2nd August 1867, No. 1,776.

Miscellaneous.

Communicated to the Military Department.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Military Department.
,, the Board of Revenue.

Erd. S. T. Augustin.

INSPECTION REPORT

UPON

THE MILITARY AND CIVIL STATION OF

KURNOOL,

BY

ROBERT S. ELLIS,

SANITARY COMMISSIONER FOR MADRAS.

Situation and general description. The town of Kurnool is situated in $15^{\circ} 48''$ north latitude, and 72° east longitude, upon land bounded by the junction of the rivers Hindry and Toongabudra; its elevation above the level of the sea is 900 feet. It is situated from Bellary 95 miles, from Hyderabad 128 miles. Its distance from Madras is 300 miles, and the Railway to Cuddapah at present brings travellers within 123 miles of Kurnool; when the Railway is extended to Ghooty, troops for Kurnool will only have to march 62 miles.

2. The following remarks are quoted from the topographical Reports of the late Medical Board:—

“ In reference to the surrounding country, Kurnool is placed in a hollow, the view to the eastward being terminated by a low range of hills about five miles distant, on the west the ground gently rises for about a mile and a half, when the view abruptly terminates: on the north it also rises gently from the Toongabudra, to about the same distance; and on the south the view is bounded by a wedge-shaped hill, about four miles distant. From the base of this hill the country slopes gently to the Hindry and Toongabudra.

Rivers. “ The Toongabudra, upon the south bank of which the Fort and pettah are built, rises in the western ghauts, and shortly after receiving the Haggree, becomes the boundary stream between the Kurnool country and the Dooab, it then runs in a direct course east until it reaches Kurnool, where it unites with the Hindry, and winding to the northward falls into the Kistnah at Coodelysingham, about fifteen miles below the town. The rise of its waters is very sudden, and its fall is equally rapid, but for the greatest part of the year it is a turbid stream, the bed consists of sand and pebbles, and opposite the town it is very rocky. The banks are low, and when full, it is about 900 yards in breadth, having a depth of water of from 15 to 25

"feet; the stream is rapid, but is fordable from the end of December to the end of May, when it becomes clear, and is then 300 yards in breadth, and little more than knee deep."

"The Hindry is a small, rapid river which has its source to the south-west of Kurnool; it also rises and falls very suddenly; its bed is of yellow sand and rock, and though occasionally not fordable, it is for several months of the year a mere brook."

"After the subsiding of the Hindry and Toongabudra, in November, extensive sand banks are left, on which, besides vegetables of different kinds, melons of superior quality are grown. The melon-beds are made by digging trenches about the beginning of December, and mixing regur or black soil with the sand; and the fruit becomes ripe about the middle of February. When the Toongabudra is first flooded, the melon-beds are all swept away, and a stratum of mud is deposited on the sand close to the walls of the Fort and pettah; this however soon dries, and by subsequent rising of the river, is swept away."

3. There is evident inaccuracy in the report of Mr. Glaisher on this subject as contained in the Parliamentary Report on the Health of the Army in India. The Returns supplied by the Collector of the district are equally erroneous, and the only reliable Returns available were those supplied to me by Mr. Wright of the Revenue Survey, and Mr. Knorpp, one of the staff of the Chief Engineer of the Madras Irrigation and Canal Company. According to these Returns the rainfall would appear to be as follows:—

1862.....	27.96
1863.....	18.19
1864.....	25.81
1865.....	20.46
1866.....	25.78
(to 18th November.)	

This gives an average rainfall of 23.64 per annum.

4. The climate of Kurnool is generally found to show a high temperature in the months of April, May, and June. In July the temperature is usually variable, ranging from 75 to 87°. In August frequent showers are usual, and heavy rain is occasionally witnessed. September and the first half of October are cloudy and hazy in the mornings, the evenings are generally still, close and oppressive, and the thermometer ranges from 76 to 88°. November and December are usually cold and bracing, the thermometer occasionally falling as low as 64° in these months. The weather from January to April gradually increases in heat, until the hot weather may be fairly said to have set in, the prevailing winds are west and north-east.

5. The houses of most of the Europeans are situated at some distance from the town proper. This portion of the station has, during the last two or three years, been brought under cultivation, both wet and dry. The irrigation water flows through a number of badly-made earth channels, and there are a good many pools of water about the civil portion of the station. The fever, which has recently declared itself among the European residents, may perhaps be in a measure owing to the recent cultivation and to the deficiency of drainage which allows of

the water accumulating in these parts, where it stagnates and is wasted. There is not so great an objection to dry cultivation in the neighbourhood of civil and military stations, and the plantation of trees is a positive benefit. But it has been frequently remarked that in tropical and semi-tropical climates, the first turning up of virgin soil for cultivation produces an outbreak of malarious disease, and to this might, under other circumstances, be attributed the recent severe outbreak of fever in all parts of the civil and military station, and town of Kurnool. But it must be remembered that fever of exactly the same type has for months prevailed throughout the district, where the extraordinary adjuvant causes of malarious disease, such as clearing jungle or disturbing virgin soil, have not been recently created.

6. The Fort, the position of which is indicated in the accompanying plan, was formerly 879 yards long (north to south) and 689 broad (east to west); it was surrounded by walls of sand stone 17 feet high and 9 feet thick. Of these walls, only a portion now remain. The Toongabudra river runs on the northern and eastern faces of the Fort,

Alterations in the Fort.

and outside the Fort enclosure on the south and west runs a deep, dry ditch. Of the original wall, only a portion now remains; the Rampart from the Flagstaff bastion and Powder Magazine to the north-west bastion has been removed, the debris having been used to fill up the ditch formerly running outside it, to the benefit of the Military General Hospital, which now obtains the influence of prevailing winds. Additional ventilation from the south has been also afforded by the removal of the curtain wall passing south and south-east from the Flagstaff bastion towards the adjoining bastion directly south of the Hospital.

7. The Fort has therefore, to a very considerable extent, lost its defensive character, and the Major General Commanding the Division does not deem it requisite to retain any further portion of the protecting ramparts and curtain walls. These are in many places dilapidated and are now no means of defence, as the Fort is fully opened on the western side.

8. I would therefore strongly urge the demolition of the ramparts and curtain walls and the filling up of the surrounding ditch. The ramparts on the river face should also be removed and the bastions alone allowed to remain. On some of these there are houses occupied by Europeans and these may, for the present, be allowed to remain, but I trust these also will eventually be thrown down and all Europeans be moved to the high ground lying to the west of the station.

9. Much improvement to the health of the population of the Fort may be fairly anticipated from the demolition of the now existing impediments to ventilation. The ditch of the Fort is, as may be expected, a great source of nuisance from its constantly containing stagnant water and decomposing filth of all kinds.

LINES OF NATIVE INFANTRY REGIMENT.

10. The regimental lines are situated on a plain, about 300 yards from the site of the old west gate of the Fort, with which there was formerly a communication by means of a cause-way. The parade ground is contiguous to the lines between it and the Fort. The village

Regimental Lines.

of Avapettah lies between the lines and the Toongabudra. Their length is 371 yards from east to west and 170 in breadth; the streets and their measurements are shown in the accompanying plan.

11. The Russalah lines, now in a ruinous condition, were situated a little to the north of the Hindry. This mounted Police is very much reduced in number and will, I believe, eventually be abolished.

The accompanying plan shows their relative position, as regards the Native Infantry Lines, &c. &c.

12. The lines of the 28th M. N. I. were visited on the evening of 15th November, in company with the Major General commanding the Division, Colonel Babington, commanding the Regiment, Major Moberly, the Superintending Engineer of the Division, and Dr. Jackson, the Deputy Inspector General of Hospitals, and my Secretary.

13. The lines are well laid out in parallel streets with neat huts with stone and mud walls, and the usual yards. The streets have had, for the last two years, regular drainage for storm water, and the house sewage flows into them through small side drains consisting of earthen pipes, or simple covered channels through the road-way. The large street drains are of stone masonry, but are in more than one respect faulty. They are square in section and at their out-fall are much too deep. Both these peculiarities prevent their being kept clean with facility, and I would strongly recommend that they should be re-laid at the same slope as at present, but that the commencement of each drain should be as nearly as possible on the level of the surrounding ground, instead of, as now, at a depth of nearly a foot below it. I would also suggest that in lieu of the present shape — they should be shaped thus — and composed as far as possible of long slabs placed horizontally instead of being made of small slabs nearly square in outline.

14. The angle of these drains should be closed with hydraulic cement, and to ensure cleanliness they should be flushed out daily.

15. Compliance with these suggestions need not be attended with expense or difficulty, for stone is abundant, and there is a plentiful supply of water. The drainage of these lines should be systematically effected and their construction placed under the care of the Engineer Officer in charge of Kurnool, while the Regimental authorities should be held responsible for the conservancy. Care should be especially taken in the re-construction of these drains to ensure the water, or water and sewage being discharged at some distance from the lines of the Regiment and so as not to interfere with the cleanliness of the adjoining bazaars and the purity of the water of adjacent wells and reservoirs. At present the main drainage of the lines runs to a spot to the north where it is discharged, so as to flood the main street of the adjoining village: while one drain empties itself close to a large water reservoir. The sweet water wells and the water reservoirs of the Municipality generally at Kurnool, should all be protected from percolation from any filthy neighbourhood.

16. For the conservancy of the lines of this Regiment, eight toties are kept for their families by the men of the regiment, each house in the lines paying one anna or more, this sum being calculated by the rank of the tenant and the number of his family.

17. In addition to this, one cart and eight sweepers have been recently sanctioned by Government for the general conservancy of the lines, and this establishment should be sufficient to ensure cleanliness in the lines.

18. The strength of the Regiment was, at the period of our inspection, 673. The number of huts in actual occupation is 704, some of the residents being relations of the sepoys. There are also spaces of various sizes available for the construction of 24 more huts. Some of these spaces are neatly planted and all are scrupulously clean.

19. To the south-east of the lines a space of ground, the property of Government, and about five acres in extent, is now devoted to Native Soldiers' Gardens. These have, however, only been in existence since the end of August, about three acres are now under actual cultivation, and the remaining space has been only recently enclosed.

20. It is not intended to extend the space of ground devoted to this purpose. Eighty-four men have gardens and seem to enjoy them as means of recreation and to appreciate the pecuniary profits arising from them. They sell the vegetables in the bazaars and to the European residents.

21. The whole space is divided into eight equal parts, one part is allotted to each company, and the space provided seems sufficient.

22. The gardens are drained into a channel at the side of the public road; a good deal of swamp is occasioned by this. The out-fall of this water should be carefully arranged when the systematic drainage of the whole station is carried out. Water is freely supplied from a channel that affords water to the town of Kurnool.

23. In the gardens we saw Knoll-khole, Cabbage, Beet-root, Cucumber, Radish, Carrots, Lettuce, Chillies, Turnips, Peas, and country vegetables, and a good number of the commoner varieties of flowers. The gardens were very neatly laid out under, I believe, the supervision of an officer of the Regiment, who has shown a good example to the men by laying out the grounds about his own house with considerable taste.

24. The Barracks of the 28th Native Infantry are situated in the Fort, near the old western gate; and facing the drill ground; the building is 170 feet long, with a verandah at each side, and is capable of containing a sufficiency of arms for the regiment.

The accompanying plan shows the dimensions and arrangement of this building.

25. The Guard Room is small, dark and ill-ventilated, while two swamps in immediate proximity to it are highly objectionable. These should, without delay, be filled up and the Guard Room itself should be enlarged. This can be done without difficulty as there is abundant space to make the required addition and the swamps can easily be

filled up by levelling the adjoining old walls which now obstruct ventilation; the swamps themselves are likely to promote miasmatic disease.

26. The privy for the use of the Guard is in the middle of a pool of water during the rains and is liable to be flooded on the slightest rain. A new privy should be erected and suitable arrangements made for its proper cleansing.

Privy for Guard.

Inequalities of the surface of adjoining ground.

27. The numerous pits to be found here should be filled and the whole surface of the ground levelled.

SOLITARY CELLS.

28. Close to the Military Hospital there are two solitary cells now repaired. They were recently built by the Municipality to re-place two old cells standing upon ground which they were anxious to enclose within the limits of the People's Park. The new cells were ill-constructed and they are now in a ruinous condition. In rebuilding these cells care should be taken to separate the latrine accommodation from the cells. The form of construction adopted is that upon which I have had to comment unfavorably at other stations. Cells thus constructed are invariably found to be extremely offensive when opened early in the morning.

HOSPITAL.

29. The Hospital, which is specially intended for the Native Infantry Regiment, contains one large ward for native soldiers, and one ward intended for European patients; these are chiefly soldiers en route for Secunderabad, &c. The following table will sufficiently indicate the capacity of the hospital and the accommodation afforded by it. This hospital has been recently much improved by the demolition of the curtain wall, in part enclosing the old Fort; but considerable improvement in its condition could now be effected by the demolition of the "curtain" now connecting the north-east and north-west bastions, and the materials of it might be used to fill up several swampy places in the immediate neighbourhood of the hospital. A garden might, with advantage, be interposed between the Hospital and the Toongabudra river, and the ventilation of the building would be much improved. The removal of the "curtain" alluded to, is approved by the General Commanding the Division, and that portion of it not required for the filling up of swamps would sell for a considerable amount. The adjoining bastion to the north-west should also be removed and sold.

30. From the unusual amount of sickness at present in the Native Infantry Regiment, the Hospital was, at the time of my inspection, overcrowded as shown in the accompanying tabular statement, but it was clean and free from ill odours.

Table showing extent of present accommodation in Garrison Hospital at Kurnool, including all wards, verandahs and out-buildings.

Block.	Rooms.	HOW OCCUPIED.	Dimensions.			Superficial area of each Room.	Cubic contents of each Room.	Accommodation according to standard prescribed.	Present occupation.	REMARKS.
			Length.	Breadth.	Height.					
1	1	Native Male Ward.....	120	20	22	2400	52,800	24	28	
	1	European Male Ward.....	36	20	22	720	15,840	6	12	
	1	Room for special cases....	12	10	13	120	1,560	1	2	
	1	Do. do. do.	12	10	13	120	1,560	1	2	
	1	Do. do. do.	15	10	13	150	1,950	1	2	
	1	Surgery and Dispensing room.....	44	10	13	440	5,720			
	1	Bath-room.....	13	11	13	143	1,859			
	1	South verandah.....	117	10	13	1170	15,210			
	1	North do.	88	10	13	880	11,110			
	1	East do.	36	10	13	360	4,680			
2	1	West do.	58	10	13	580	7,540			
	1	Cook-room for Natives....	15	8	9	120	1,080			
3	1	Latrine for Natives.....	15	8	9	120	1,080			

31. The ward intended for Europeans, but occasionally used by the Native troops during the prevalence of epidemics, is lofty, and is not deficient in ventilation. But its airiness would be much improved by piercing windows to within four feet of the ground, so as to allow of the access of fresh air from the doors in the adjoining verandah. The hospital generally is a good one, both in design and arrangement, and contrasts favorably with the design of Native Hospitals as seen elsewhere.

Ward for Europeans.

32. The privy is, however, ill-ventilated and should be ridge-ventilated. The sand at present used for deodorizing excreta should be re-placed by dry sifted earth, and care should be exercised that this is used by the patients.

The Privy.

33. The Hospital was, on all occasions of being inspected, extremely clean and the wooden cots were well arranged, the bedding clean though not very good in quality, and it was reported that the hospital was free from bugs during the greater part of the year. The iron cots, for which I believe sanction has been given, had not yet been supplied. It is very desirable that these should be furnished without delay.

Beds and bedding.

34. The two main wards of the Hospital are capable of containing 24 Natives and 6 Europeans. There were none of the latter class under treatment at the times of inspection. The ward allotted to them, as shown in the accompanying plan, has been occa-

Capacity of chief Wards.

sionally used as a cholera ward. It is roomy but insufficiently ventilated for an epidemic ward, for which its position is most unsuitable.

35. An entirely detached ward or two for contagious cases should be erected to lee-ward of the hospital, and provision should be made for separate latrine accommodation for patients treated in contagious wards.

36. The patients are provided with bathing tubs of suitable size and a bath-room. These are, however, little used by Natives. A stone chabootra round a water reservoir of native fashion, which in Kurnool can easily be filled with water supplied by the Irrigation Company, should be attached to this and all Native Hospitals.

37. The removal of a considerable portion of the wall of the Fort lying to the east of the hospital has considerably improved the airiness of the building, and it only now remains to remove similarly the other curtains of the Fort-wall, and the hospital will then be placed upon a good piece of ground well sloped to the river and which can be drained with the greatest facility.

38. The river will then be separated from the hospital by a space of ground (known as the Orange garden) and this and the bank of the river will, if properly conserved, be no longer, as they now are, a source of discomfort, annoyance and ill-health, caused by the nuisance arising from the freedom with which, at all hours of the day, they are resorted to by natives for the purposes of nature.

39. The personal comfort and official efficiency of the Medical Subordinates would in this as in other hospitals be much improved by providing for them suitable residences close to the Hospital where they are employed and to which they have to resort several times daily. The Assistant Apothecary attached to the 28th M. N. I. is compelled to live in a very inferior house, for which he has to pay Rs. 9 per mensem (the Government allowance being 7); a suitable site could, on the removal of the curtain wall of the Fort, be found upon land, which is Government property, lying to the south of the hospital. I would strongly recommend that a suitable residence should be here provided for the Apothecary and one of a proper description built for the Native Dresser or Hospital Assistant.

HEALTH OF TROOPS.

40. I have, in my special Report on the question of removing the troops and civil establishments from this station, sufficiently examined into the general question of the salubrity of the station, and alluded to the fact that epidemic fever of a miasmatic character has during 1866 largely prevailed, not only in the town of Kurnool, but also in all the talooks of the district. I therefore desire simply to record the actual number of Sepoys who have suffered from this disease.

41. That fever has been unusually prevalent during the past year and in 1866 at this station, is shown in the following Memorandum, which exhibits the number of cases

of Fever admitted into Hospital of H. M.'s 28th Regiment N. I., since arrival at Kurnool, up to date.

	No.	Deaths.	REMARKS.
Fever from 19th April 1865 to 31st Aug. 1866.	373	1	
Fever from 1st September 1866 to date.....	684	1	
Total...	1,057	2	

42. Up to the date of my visit but little mortality had followed this large total of cases. The fever has been generally not of a dangerous character, and Cholera has only proved fatal in two cases, while it was epidemic in the bazaar and among Europeans.

The following return shows the number of Admissions and Deaths in the Hospital of H. M.'s 28th Regiment N. I., from the various diseases, from 1st May 1866 to 24th November 1866 inclusive.

DISEASES.	Admissions.	Deaths.	REMARKS.
Fevers.....	764	1	
Diarrhoea.....	39	...	
Dysentery.....	12	...	
Cholera.....	6	2	
Rheumatism.....	45	...	
Veneral.....	6	...	

43. But in this high sick-rate during 1865 and 1866, Kurnool has resembled almost all the stations occupied by the forces constituting the Madras Army. In reporting on the health of the Native and European Forces, Principal Inspector-General Shaw, remarks, that the year 1865 "can scarcely be considered to have been a healthy one. Epidemic cholera and fever have been widely distributed throughout the country; and it is a matter of congratulation that the troops have suffered so little from the various forms of disease that have destroyed large numbers of the civil population." As detailed in my Report on the public health at Kurnool (before alluded to), there was no casualty from either cholera or fever, in either of the Regiments while stationed here for broken periods of 1865.

The following Table exhibits the number of men under treatment, and the nature of the diseases under which they were suffering, on the last occasion of my inspecting the Hospital.

II. M.'s 28TH REGIMENT N. I.

Present state of Sick in Hospital.

	DISEASES.							Total.
	Febris Intermitt.	Dysent. Acute.	Diarrhoea.	Rheumatismus.	Bronchitis.	Abscess.	Ulcer.	
II. M.'s 28th Regiment N. I.	29	2	1	2	1	1	2	38

44. The fever so prevalent at Kurnool this year has not, I regret to say, yet ceased; I have else-where in this Report directed attention to one possible cause of it and its remedy.

RETURN shewing Sickness and Mortality in the 28th Regiment N. I., during the years 1862-63-64-65-66.

Where stationed—	Rangoon,			Kurnool.	
	1862.	1863.	1864.	1865.	1866.
Average daily strength.....	702	658	635	677	636
" sick.....	27	32	26	18	28
Total admissions into Hospital.....	598	461	489	471	823
" deaths in hospital.....	6	8	5	2	7
" admissions from cholera.....	...	...	...	...	5
" deaths.....	...	...	...	...	2
Admissions exclusive of cholera.....	598	461	489	471	818
Deaths.....	6	8	5	2	5
Ratio per thousand of					
1.—Admissions to strength.....	851.85	700.60	770.07	695.71	1294.02
2.—Deaths.....	8.54	13.06	7.87	2.96	11.00
3.—Admissions from cholera.....	...	...	...	...	7.86
4.—Deaths.....	...	...	...	...	3.04
5.—Admissions exclusive of cholera.....	851.85	700.60	770.07	695.71	1286.16
6.—Deaths exclusive of cholera.....	8.54	13.06	7.87	2.96	7.86

45. From the foregoing table, it appears that the admissions to strength were less in 1865 at Kurnool, than in any of the three previous years at Rangoon. But in 1866, owing to the undue prevalence of fever, the admission-rate was higher than in any of the four previous years. Similarly the death-rate was very low in 1865; no deaths occurred in Kurnool, but previously occurring deaths yielded a per mille rate of only 2.96.

46. Only two deaths from Cholera occurred in 1866, when the disease was epidemic in the town of Kurnool and among the European population, and the total death-rate from this disease only amounted to 3.04 per mille of present strength.

47. Notwithstanding the great number of admissions to strength in 1866, the total death-rate amounted only to 7.86 from all causes, except cholera, as against annual death-rates in successive years at Rangoon of 8.54, 10.06, and 7.87, while 1865, the death-rate from the same causes was only 2.96 per mille.

48. From the following table, it will be seen that the forms of disease chiefly witnessed in Rangoon with a damp climate, and at Kurnool, which is exceedingly dry, were widely different; thus Diarrhoea and Dysentery stood high as causes of sickness at Rangoon, but the number of admissions from this cause fell decidedly on the arrival of the Regiment at Kurnool. Again, Atrophy, probably due in many instances to the moral depression consequent on absence from their country, contributed a very large number of the sick, and the causation of this disease is tolerably apparent as being more of a mental than physical nature, when we observe the extremely low rate of mortality witnessed in this disease.

II. M.'s 28th Regiment N. I.

ADMISSIONS.

YEAR.	Fever.	Diarrhoea.	Dysentery.	Cholera.	Atrophy.	Anasarca et Ascites.	Diseases of the Lungs.	Diseases of the Liver.	Rheumatism.	Veneral.	Ulcers and Sores.	Wounds and Injuries.	Diseases of the Eye.	Diseases of the Skin.	Small-Pox.	Dracontinus.	Total.	Other Diseases.	Grand Total.
Rangoon. { 1861.....	124	6	8	5	...	...	15	1	54	14	47	14	3	47	...	...	338	71	409
1862.....	96	33	32	...	24	4	78	...	39	10	136	25	8	63	...	...	558	40	598
1863.....	123	32	20	...	37	3	61	...	41	24	25	15	13	33	...	...	427	34	461
1864.....	220	21	40	...	15	1	63	...	44	23	8	12	4	11	3	...	465	24	489
1865.....	232	10	20	...	4	3	14	...	50	30	13	27	5	25	...	...	433	38	471
1866.....	570	33	11	5	3	1	14	...	58	9	9	39	9	25	...	2	788	35	823
(ten months) { 1st to 24th Nov. 1866..	309	8	2	1	...	...	3	1	6	1	...	2	...	1	...	1	335	...	335
Total.....	1674	143	133	11	83	12	258	2	292	111	238	134	42	205	3	3	3344	242	3586
Proportion per mille of total admission.....	466.8	39.8	37.08	3.06	23.1	3.3	71.9	0.5	81.4	30.9	66.3	37.3	11.7	57.1	0.8	0.8	932.5	67.4	

DEATHS.

1861.....	...	...	...	2	...	...	3	...	...	...	...	...	...	...	...	...	5	1	6
1862.....	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	3	3	6
1863.....	1	2	...	...	1	...	2	...	...	1	...	...	...	...	...	...	7	1	8
1864.....	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	4	1	5
1865.....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2
1866.....	2	...	...	2	...	1	2	...	...	...	...	...	...	...	...	...	7	...	7
Total.....	5	3	...	4	3	2	9	...	...	1	...	...	...	...	...	...	27	7	34
Proportion per mille of total deaths.....	147.05	88.2	...	117.6	88.2	58.8	264.7	...	...	29.4	...	...	...	...	...	...	794.1	205.3	

NATIVE TOWN OF KURNOL.

49. The accompanying map gives a clear idea of the position of the town, and the manner in which the streets have been built. Its situation on the high banks of the

Toongabudra and Hindry rivers, presents great natural facilities for drainage, and it has now, from the works of the Madras Irrigation Company, a good supply of pure drinking water. Very little use has hitherto been made of the natural advantages of the site of Kurnool. It is one of the old walled cities of India, which, by its natural position and its fortifications, was considered in former times a place of great military importance. A numerous population sought refuge within its walls, and a large native town has gradually grown up, cramped for room and crowded in narrow streets and lanes, deficient in ventilation and without any of the conveniences necessary for the health and comfort of a large population. Each native nobleman's house had clustering round it the houses of his dependents, each group being built independently of the neighbouring group, the whole town is therefore a perfect labyrinth of narrow streets and lanes, generally ending in *cul de sacs*. No attempt has been made at systematic drainage, there are no public latrines, market places or slaughter-houses worthy of the name. And although a commencement has been made to distribute the water supplied by the Irrigation Company, such reservoirs as have been constructed, are placed in filthy neighbourhoods, and are subject to rapid contamination by percolation from the tainted soil immediately adjacent to these open cisterns.

50. Every abominable nuisance characteristic of a native town is exaggerated in Kurnool, and it is rather a matter of surprise that diseases should not be endemic in Kurnool, than that they should appear occasionally in a severe epidemic form.

51. Although at present laboring under so many disadvantages, there is probably no town in India which, at a moderate outlay of money, could be so easily improved as Kurnool. Its levels are very favorable for drainage. There is at hand a good supply of pure drinking water. House property is not nearly as valuable here as in other more thriving native cities, so that piercing broad streets and highways would be much less expensive than in most places. The Town's Improvement Act is in force in Kurnool, and the amount proposed to be raised by the Municipality was for the current year 30,000 Rs. to meet all items of expenditure—water-supply, lighting, conservancy, and police—and no doubt many of the nuisances which attracted my attention will be abated when systematic conservancy is introduced by the Municipality. But the current municipal income will be totally inadequate to construct a complete system of drainage, to widen the streets, to erect suitable market places, slaughter-houses and public latrines, and to distribute and protect the supply of water. Nor is it reasonable that the cost of these works, which will be a permanent benefit to the town, should fall on a single generation of rate-payers.

52. The Government have, in their order dated 2nd March 1867, consented "to consider the expediency of aiding the Municipal Commissioners in any well-digested scheme which may be submitted to them for improving the drainage and ventilation of the town," and I trust that no time will be lost in preparing the necessary plans and estimates. All experience in this and in other countries shows the immediate beneficial results of such improvements, and as, I have before stated, no town that I have seen in this Presidency affords greater facility for these public works. I am firmly persuaded that it requires only these sanitary improvements to render it perfectly safe to retain Kurnool as a military and civil station.

53. I have before alluded to the proximity of places used as latrines to the reservoirs holding the water supply for the town. One of the best marked examples of this

is afforded by the Kunchanee Bowry (so called, but really now a reservoir). Close to and lying several feet above this reservoir is a large space used as a latrine by the female inhabitants of this quarter of the town. The condition of this latrine was filthy. The water from the Bowry falls on the surrounding ground, and after flooding it passes down the centre of the streets extending through the district named Gosiwarrah; after cutting up the roadway for nearly quarter of a mile, it passes through a grave-yard and under the rampart makes its exit into the Toongabudra. It is obvious that the advantage of a pure supply of drinking water is destroyed by the position of this reservoir while there is a most unnecessary waste of water. This is by no means a solitary example. Due care should at once be taken to protect the neighbourhood of all these reservoirs.

54. The places denominated 'latrines' in Kurnool have not been constructed with any view to their intended use; they are chiefly open spaces which, by a species of prescriptive right, have been devoted to this purpose for years.

55. Independent of the proximity of water-courses and reservoirs, the latrines are generally ill-placed in situations inaccessible to conservancy carts. They were also, without exception, in a most filthy condition.

I must also bring to notice the filthy practice which prevails of allowing buffaloes, pigs, and other animals to feed on ordure in the streets, and especially in the public latrines of the town. From these loathsome feeding grounds they go and drink at the public reservoirs, and contaminate the water, thereby assisting directly in seasons of epidemics in the rapid propagation of cholera and other diseases. The bye-laws recently passed by the Municipality contain provisions against this nuisance. But constant vigilance will at first be necessary to prevent the continuance of this practice, which has prevailed for many years.

56. Among other sources of injury to public health by offensive smells, the oil mills must be alluded to. They are numerous and situated in the midst of populous districts.

57. It is needless to dwell upon the details of my inspections of the several localities, comprising the whole town of Kurnool. The same defects were witnessed in almost all of them, the streets are badly laid out, the front line of the houses is much broken, wide court-yards are attached to many of the houses, and the walls are extremely high. These latter are generally composed of loose dry masonry, and the lowering of them would cause little expense. These observations apply with peculiar force to the districts of Kogagilly and Bowayara.

58. Boodavaram Pettah is in an exceedingly filthy condition, pigs are in abundance, manure heaps are numerous, and large collections of bandies keep the ground constantly soiled.

59. In this vicinity a tannery is placed near a large chuttrum, and from this a filthy nullah taints the surrounding soil.

60. The grave-yards, which are extraordinarily numerous in Kurnool, are a source of serious nuisance, they are not walled in: they are dilapidated and no one seems responsible for any care being taken to keep them in proper order.

61. Burials in these places have been interdicted for the past two years, but they are still, to a small extent, allowed in the cases of family burial grounds, which are enclosed; even this concession should be, as soon as possible, withdrawn. Intermural burial is entirely opposed to the interests of the public health, and should be suppressed without delay. The native grave-yards generally require to be properly levelled. They might, with manifest advantage, be planted and stagnant water lying near them should be drained off.

Burial grounds.

Native Grave-yards.

62. The Cemetery for the interment of Europeans and East Indians within the limits of the cantonment has been closed, and a new one has been prepared across the river close to the bridge. The ground here enclosed is small in extent and is in an unsightly position between intersecting roads; it is also too close to a bazaar. The Cemetery is well kept, and it is only to be regretted that the site selected was not more eligible.

Cemetery for Europeans.

63. The present condition of the markets requires immediate attention. The meat and vegetable markets are ill-constructed, filthy and ill-drained. At the time of my visit a stagnant pool of sewage filled the imperfectly-made drain surrounding the vegetable market, while the buffaloes were engaged, as elsewhere, in the town in feeding on the ordure, which was freely deposited on all sides. Here, as elsewhere, the reservoir of one of the Irrigation Company's channels was surrounded by liquid mud and filth of all kinds.

Markets.

64. Down the centre of the street which is chiefly the rice bazaar, runs a foul drain, which eventually discharges itself into a quantity of stagnant water close to two large grave-yards. In close vicinity to this spot and purposely constructed for the purpose, is a masonry drain running under the rampart to the river, but it was choked up when first seen. It has since been imperfectly opened.

Foul drains.

65. Although not strictly within my province, I may bring to notice that as at Bellary, a gallows is erected in a piece of waste ground two miles distant from the Jail. I think this should be altered. The distance does not prevent the attendance of crowds of spectators, and unnecessary suffering is entailed on those about to suffer death by the delay caused in reaching the place of execution.

Gallows.

INSPECTION OF THE JAIL AT KURNOOL.

66. This Jail was inspected on 19th November in company with the Collector of the district, and the Superintendent of the Jail.

67. At my desire the prisoners were not liberated from their sleeping wards until our arrival. At 6 A.M. the Jail wards were opened in my presence, and I carefully examined all the wards before the prisoners left them. The wards were, without exception much over-crowded; the actual number of persons in excess of the regulation number to be accommodated, varied from 150 to 233 per cent. The total number of prisoners on the

day of inspection was 479; of these there were 406 male and 12 female convicts; 48 male prisoners were awaiting trial; two insane men were in confinement and 10 male and female debtors were confined within the Jail limits; the civil debtors male, were confined in a building separated from convicts, but the one female debtor was imprisoned in the cook-shed of the female convicts, and in company with the female convicts for whom accommodation could not be found in the very limited space assigned to this class of prisoners.

Jail much overcrowded.

68. The wards for male prisoners are eight in number; of these four are old, and four new. Wards Nos. 1, 2, 3 and 4 are built in pairs back to back. Each ward has a sloping roof ventilated by openings in the roof. The front of the ward (55 feet in length) is composed of a stout wooden palisade, in the centre of which is a door-way. Eight raised sleeping places "pyals" have been built of brick and mud, two at the ends of each ward and six ranging along the palisaded front of the ward. The other prisoners sleep on the ground in the centre of the ward.

Wards for male prisoners.

69. The atmosphere in these wards although they were so over-crowded was pure, and owing to the free access and exit of air ensured by the palisade and the upper openings for ventilation, there was a very marked absence of that sickening odour so frequently observed in jail wards or barracks densely occupied by a large number of persons.

Ventilation.

70. The new cells, Nos. 5, 6, 7, and 8, are of recent construction, having been built only a year ago. Their superficial area is slightly less than that of the old wards, owing to the thickness of the wards which are built of dry masonry 3 feet in thickness. The front walls of these wards are perforated by numerous honeycomb openings. These otherwise ill-constructed wards were, owing to these openings, entirely free from evil smells such as might have been expected from their being much over crowded. The excellent effect of honeycomb ventilation was most remarkable, and is deserving of attention in future alterations of existing buildings which are deficient in ventilation.

71. The usual objectionable arrangement was in force throughout the Jail for the convenience of prisoners requiring at nights, privy or urinary accommodation. The excreta of each prisoner was received into an earthenware chatty provided for each prisoner. This arrangement is not satisfactory: the vessels used for this purpose become saturated with urine, and are very offensive, even when empty. In lieu of these there should be erected in each ward a trough of stone about 12 inches in height, 3 feet long, and 12 inches wide, the bottom of the trough being saucer-shaped. In this about nine inches of carefully sifted clay should be placed each night before the prisoners enter the wards. Prisoners using this latrine should be instructed to pass their excreta into the trough, and to cover the excreta with a handful of sifted earth, which should be placed by the side of the stone trough for this purpose. This plan has been found entirely successful in all the Jails in which it has been tried.

Urinals for night use.

72. The Jail Hospital is a small building, consisting of four rooms, two of which are used as wards, and two as offices. The latter, though small, are sufficient for their intended use.

Jail Hospital.

73. The Hospital wards, which are intended for males only, (no provision having been made for females), are small, ill-ventilated and were much over-crowded. A new hospital should be built and the site of the present hospital would enlarge the area of the ground surrounding the wards. The new Hospital should be placed to leeward of the wards and should provide distinct separate accommodation for male and female prisoners. Separate or special wards should be provided for the treatment of cases of contagious disease, which should not be mixed up with the ordinary cases.

Wards.

74. Until the number to be accommodated in this Jail is definitely fixed by Government, it is impossible to fix determinately the precise amount of hospital space to be provided for this jail. But in fixing it, I would, as in the case of the Bellary Jail, strongly recommend that the standard adopted by the Government of India for the sick of native regiments should be adopted, namely, 99 square feet of superficial area for each sick native.

Superficial area for native patients.

75. Meanwhile, however, a good deal of improvement can be effected. The doors should be re-placed by iron or wooden gratings to open to the outside. The two wards ventilate now into one another through a barred window. This should be bricked up: and the present windows in the outer walls of the wards might, with advantage, be enlarged. These inexpensive alterations would greatly improve the present hospital, which was found very ill-ventilated.

Improvements suggested.

76. The workshop, a dark and not well ventilated building, now used as a prisoners' ward was, like all the sleeping wards, much overcrowded. This building is on the level of the ground and can only be temporarily employed as a sleeping ward.

Workshop.

77. A large number of prisoners, 172, were in seven tents, each of six of these contained 25 prisoners, and 22 were placed in the remaining tent.

78. The use of these tents has been invaluable in the overcrowded state of this Jail, but it must be remembered that at any moment the tents may be required by the Regiment, and the necessary alterations of the Jail should not be delayed.

79. Suggestions for the alterations and for providing temporary accommodation for prisoners at Kurnool have been submitted by me to Government in my letter No. 288, dated 20th November 1866.

80. The cookrooms for males are unnecessarily large, and were not well kept. An absurdly large number of chaffies of all sizes were scattered about these places and the drains in the vicinity of them were ill-kept and offensive. This part of the Jail should be re-constructed: its size much reduced and cooking ranges of approved pattern be introduced in lieu of the present unsightly and wasteful ranges of native pattern.

Cook-rooms.

81. The latrine is simply a portion of the general yard of the Jail, enclosed by a low wall and having about two inches of dry earth spread on the ground. This place is only used by civil debtors, prisoners awaiting trial and by female prisoners, but it should be

Latrine.

eventually re-placed by a dry earth latrine protected from rain by a light roof. In addition to the imperfect construction of the present latrine, its situation, relatively to the hospital is open to objection. It is too close to the hospital and is unduly exposed, and it is highly desirable that a small separate latrine should be provided for females.

82. The general drainage of the Jail is defective, the water channels are square-shaped, are faced with slabs of stones irregularly laid, and allowing freely the escape of water, which sinks into the adjoining ground.

Drainage.

83. The drainage from the cookrooms and from the privy is allowed, after passing under the outer wall to spread and stagnate on the open ground in close proximity to water reservoirs supplying the people of the town with water.

84. The boundary wall of the Jail is in a dangerous condition and requires to be re-built. Space is available on both the northern and eastern sides of the Jail, which might, with advantage, be enclosed within the Jail limits; the exact position of the outer wall must depend upon the decision of the Government as to the enlargement of the Jail.

85. As regards the statistics of the Jail, I may briefly remark, that from 1st May to 31st October 1866, there was not a single admission from cholera. The average daily sick has, during the past seven years, varied considerably, both absolutely and *pro rata* to average strength as shown in the following table:—

Years.	Average daily strength.	Average daily sick-rate 32.7.
1859-60	111	41
1860-61	130 $\frac{1}{2}$	2 $\frac{1}{2}$
1861-62	158 $\frac{1}{2}$	4 $\frac{3}{4}$
1862-63	187 $\frac{1}{2}$	11 $\frac{1}{2}$
1863-64	220	12 $\frac{1}{2}$
1864-65	236	10 $\frac{1}{4}$
1865-66	283 $\frac{1}{2}$	12 $\frac{1}{2}$

86. The actual mortality to strength is as follows from all causes, &c.

Years.	Daily strength.	Deaths from all causes.	Deaths from Cholera.	Deaths to strength per mille from all causes.	Deaths to strength per mille from Cholera.
1859-60	111	9	3	81.351	27.027
1860-61	130 $\frac{1}{2}$	5	1	38.240	7.648
1861-62	158 $\frac{1}{2}$	10	0	63.191	
1862-63	187 $\frac{1}{2}$	11	5	58.666	26.666
1863-64	220	15	4	68.181	18.181
1864-65	236	17	2	72.033	8.474
1865-66	283 $\frac{1}{2}$	15	0	52.910	0
Average...	189 $\frac{1}{2}$	11 $\frac{1}{2}$	2 $\frac{1}{2}$	62.081	12.570

87. It will be seen that the death-rate is high, but this is unfortunately the case in all our Indian Jails. Indeed Kurnool stands in point of salubrity, tested by total mortality from all causes, thirteenth in the whole list of jails, from which Returns have been received for 1865.

88. But the present mortality in jails is but an imperfect test of climate, nor will it be possible to draw reliable conclusions on this subject, until there is a marked improvement in the construction, ventilation, drainage, and conservancy of prisons, and until overcrowding is prevented.

89. Although very imperfect in these respects, the Jail at Kurnool as shown above does not show an unfavorable comparison with other jails; for, notwithstanding the prevalence of Cholera in the adjoining native town, we find that it has, with a total of 1,275 inhabitants, during seven years, only lost 15 patients, that is 11.764 per mille from this disease. From this it may not unreasonably be deduced that there is nothing radically and irremediably wrong in the climate of Kurnool.

CIVIL DISPENSARY.

90. This institution is placed in a building of recent construction in a very central position, and it possesses separate wards for contagious cases or others requiring isolation. The following return shows the capacity of the several apartments in this building, which are also shown in the accompanying detailed plan.

Civil Dispensary, Kurnool.

Block.	Rooms.	How occupied.	Dimensions.			Superficial area of each room.	Cubic contents of each room.	No of patients for whom accommodation can be provided at 99 square feet superficial.
			Length.	Breadth.	Height.			
		Front verandah.....	29-9	11-10	9-10	352	3461	
		Front verandah.....	29-9	11-10	9-10	352	3461	
		Surgery.....	11-10	9-10	10-6	116	1221	
		Special case room.....	11-10	9-10	10-6	116	1221	
		Male ward.....	29-9	17-0	18-0	505	9103	5
		Female ward.....	29-9	17-0	18-0	505	9103	5
		Side verandah.....	17-0	11-10	9-10	201	1978	
		Side verandah.....	17-0	11-10	9-10	201	1978	
		Bath room.....	11-10	11-6	10-6	136	1428	
		Bath room.....	11-10	11-6	10-6	136	1428	
		Back verandah divided into 3 rooms						
		1 Ward.....	16-0	11-6	10-10	184	1993	2
		1 Store room.....	15-10	11-6	10-10	182	1972	
		1 Operating room	23-8	11-6	10-10	72	2948	
		Dead room.....	10-0	8-0	10-9	80	860	
		2 Privies, male & female.	9-9	7-8	10-9	274	803	
		Police ward.....	32-5	20-0	11-0	648	7131	7
		Side room do. do. ...	32-5	10-10	11-0	351	3862	4
		Side room do. do. ...	32-5	13-0	11-0	421	4635	4
								27

91. From this it will be seen that allowing 99 superficial square feet to each patient, the Dispensary is capable of affording accommodation to 27 persons.

92. But from this table it will be seen that the entire accommodation of the Dispensary is not available for the ordinary class of patients who are inmates of Dispensaries. The wards in the detached building, and which were really intended for cases requiring insolation have been assigned for the use of the Police. This is an arrangement which should be discontinued as lessening the general utility of the Institution. A small separate ward for the use of the Police should be built.

93. The present Dead house requires a sky-light and increased ventilation. At present a *post mortem* examination could not be made without keeping the door open, which would make the whole proceeding visible from the hospital.

94. The general arrangements of this Dispensary are good, the wards lofty, well ventilated and remarkably clean, the beds and bedding in good order, although not of a satisfactory description. On each occasion of being visited, very large numbers of out-patients were observed and the arrangements for the examination of, and supply of medicine to, these people seemed to be very well managed by the Medical subordinates in charge.

95. In close proximity to the Dispensary are the out-offices which chiefly consist of old buildings adapted to their present use. The cookroom is modelled on the native fashion, is dark and has no ventilation except by the open doorway. It is in an old gateway which although a characteristic and handsome building must, I fear, be condemned, as impeding the ventilation of the Dispensary and the neighbourhood.

96. The condition of the ground close to the Civil Dispensary is very unsatisfactory. A considerable portion of the outer glacis of the old Fort has been sold for a merely nominal sum. It has been very imperfectly removed in parts, and by the numerous excavations in it, affords shelter for natives, who do not hesitate to convert these hollows into public latrines. On the one side of this glacis is a ditch full of stagnant water; on the other side is a collection of low-lying ground traversed by two large, and now unused grave-yards. The purchasers of the glacis were at my request warned by the Collector to remove the stones and earthwork, and this has, I trust, been done.

97. A foul and offensive drain from the "Rice street" debouches here, and, as before noticed, finds a lodgement for its contents among the many inequalities of ground that lie between it and its exit towards the river. Close to this place but raised above it, is a house now occupied by Mr. _____ and reported to be a hot bed of fever: a fact which could not possibly surprise any one who viewed the sub-lying portion of the town. A large grave-yard, surrounded by stagnant and putrescent water, spaces of ground used as public latrines, and the contents of a sewer, will sufficiently explain the unhealthiness of this portion of the Town.

98. The following statement will show the cost, for a series of year, of maintaining each intern native treated in this Dispensary.

Expenditure.

	RS.	A.	P.		
1861.....	125	4	8	...Dieting sick.	} 86 Patients treated. at 6-7-4 per head.
	207	7	7	...Perishable articles.	
	222	13	2	...Other charges.	
Total...	555	9	5		
1862.....	393	0	9	...Dieting sick.	} 126 Patients treated. at 6-7-0 per head.
	16	1	8	...Wine and spirits.	
	402	6	3	...Other charges.	
Total...	811	8	8*		
1863.....	598	10	0	...Dieting charges.	} 174 Patients treated. at 4-13-6 per head.
	244	7	6	...Other charges.	
Total...	843	1	6†		
1864.....	681	10	0	...Dieting sick.	} 152 Patients treated. at 7-2-11 per head.
	17	4	4	...Wine and spirits.	
	156	13	8	...Perishable articles.	
	236	0	4	...Other charges.	
Total...	1,091	13	1		
1865.....	867	8	11	...Dieting charges.	} 181 Patients treated. at 7-15-3 per head.
	158	0	10	...Perishable articles.	
	56	13	0	...Wine and spirits.	
	357	10	5	...Other charges.	
Total...	1,440	1	2		
1866.....	323	12	4	...Dieting charges.	} 82 Patients treated. at 12-11-9 per head.
	237	10	4	...Perishable articles.	
	11	8	0	...Wine and spirits.	
	471	5	6	...Other charges.	
Total...	1,044	4	2‡		

* Out of this amount Rupees 115-1-8 from the Local Fund.

† 200 Rupees from Government at the rate of 50 Rupees per mensem for Jan., Feb., March and April.

‡ 200 Rupees sent to the Savings' Bank in January 1866.

The Dispensary is usually under no supervision except that exercised by the Surgeon and the Dresser attached to the Dispensary. There is no Dispensary Committee. There were six Life-Governors, which contributed 100 Rupees. Of these five gentlemen, one has since died—and another has left the station having relinquished the public service. The four remaining contributors are still resident in Kurnool. The subscriptions have fallen off greatly and some of the Europeans at the station have ceased to support the Dispensary, but will probably resume their subscriptions now as a European Medical Officer has been appointed as Acting Civil Surgeon, the absence of a European Medical Officer being the reason assigned for the subscription being withheld. I cannot but think this reason for not contributing to a useful charitable Institution very insufficient, for no complaint was made that the Apothecary in charge, Mr. Netscher, had not fulfilled the duties assigned to him with skill and assiduity.

100. The following Return will show the chief forms of disease witnessed among intern and extern patients for nearly six years:—

In-Patients of Civil Dispensary, Kurnool.

ADMISSIONS.

YEARS.	Fever.	Diarrhoea.	Dysentery.	Cholera.	Atrophy.	Anasarca.	Diseases of the Lungs.	Diseases of the Liver.	Rheumatism.	Venercal.	Abscesses and Ulcers.	Wounds and Injuries.	Diseases of the Eye.	Diseases of the Skin.	Small-pox, &c.	Dracunculosis.	Total.	Other Diseases.	Grand Total.
1861.....	4	4	5	3	2	4	...	2	6	5	13	16	2	...	...	...	68	18	86
1862.....	11	3	7	3	2	7	3	3	8	12	16	13	2	3	...	...	100	33	133
1863.....	23	5	2	1	5	15	1	3	14	20	26	15	3	6	...	...	140	41	181
1864.....	17	10	9	12	5	3	1	...	8	14	28	10	2	6	...	...	128	29	156
1865.....	30	11	2	10	3	7	6	1	10	26	18	23	2	5	...	4	161	25	186
1866 (up to 31st Oct. 1866)....	15	2	7	9	2	5	3	2	16	8	9	...	...	...	...	...	78	8	86

Deaths.

YEARS.	Fever.	Diarrhoea.	Dysentery.	Cholera.	Atrophy.	Anasarca.	Diseases of the Lungs.	Diseases of the Liver.	Rheumatism.	Venercal.	Abscesses and Ulcers.	Wounds and Injuries.	Diseases of the Eye.	Diseases of the Skin.	Small-pox, &c.	Dracunculosis.	Total.	Other Diseases.	Grand Total.
1861.....	...	2	3	3	1	1	...	...	...	...	...	1	...	...	...	...	11	2	12
1862.....	1	1	2	7	1	1	1	...	...	...	...	...	...	...	...	...	5	3	18
1863.....	1	3	1	...	2	5	...	1	...	...	...	...	...	...	...	...	14	3	17
1864.....	2	5	...	7	2	...	...	...	...	...	3	1	...	...	...	...	20	4	24
1865.....	3	4	...	5	...	1	2	...	...	1	...	1	...	...	...	...	19	2	21
1866 (up to 31st Oct. 1866)....	3	2	1	4	...	1	2	...	...	...	...	...	...	...	...	...	13	2	15

101. In conclusion, I have to solicit that the following proposals may receive the favourable consideration of Government.

Para.

- 8—9 that certain alterations in the Fort be attended to;
13 that the drainage of the Regimental lines be re-laid; and certain suggestions regarding them be attended to;

(II.) MILITARY BUILDINGS.

- 25 that the guard room be enlarged and the swamps be filled up;
26 that a privy for the guard be erected;
27 that the surface of the adjoining ground be levelled;
28 that the solitary cells be built on better principles and the latrine separated from them;

88-1776.

18

(III.)

Para.

- 29 that the curtain walls [with] the hospital be removed.
- 32 that ridge ventilation be introduced and dry sifted earth be used in privy;
- 33 that iron cots be supplied without delay;
- 35 that a detached ward or two for contagious cases, with latrines, be erected;
- 36 that a stone chabootra or platform be erected round the well in the Hospital compound;
- 39 that suitable quarters for Medical Subordinates be erected.

(IV.) NATIVE TOWN OF KURNOOL.

- 49-56 that a well-considered system of drainage be introduced; that sufficient conservancy establishments be maintained, and a sufficient number of public latrines be built.
- 61 that intramural burials be entirely prohibited, and that disused burial grounds be enclosed.

(V.) JAIL AT KURNOOL.

- 71 that stone troughs for night-use be placed in each of the prisoners' wards;
- 73 that another hospital be built with separate wards for male and females, and that the superficial area of space per patient be regulated at 99 square feet, and that a separate contagious ward be built;
- 75 that the ventilation of the hospital be improved;
- 80 that the space used for cooking for the male prisoners should be considerably diminished, and that iron cooking ranges of improved pattern should be introduced into the Jail;
- 81 that dry earth latrines should be erected throughout the Jail.

(VI.) CIVIL DISPENSARY.

- 92 that hospital accommodation for the Police should be provided outside the limits of the Civil Dispensary;
- 93 that the wards for females should be more isolated from the wards occupied by male patients;
- 95 that the gateway close to the Civil Dispensary should be removed;
- 96 that the surrounding ground be levelled;
- 97 that stagnant water from the neighbourhood be removed by drainage.

R. S. ELLIS,

Sanitary Commissioner for Madras.

2nd May 1867.

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Communicated to the Military

Departments.

W. J. J.

20 Aug 1867

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