

1. Number of pages
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M.R.O. 1-89,000-16-10-20.

MADRAS RECORD OFFICE.

Government of Madras.

Public DEPARTMENT.

G.O. No.	1529	Press Mis.
Dated	5-12-1967	

Not to be folded or roughly handled

No. 125-

Kurunool
Municipal Committee Office

29th November 1867.

From,

J. A. N. Chase Esqre,

President of Kurunool

To,

The Chief Secretary to
Government.

Sir,

Fort Saint George.

I have the honor to forward a copy of
a report on the requirements of the town of Kurunool
furnished by Mr. Latham Chief Engineer of the
Madras Irrigation & Canal Company, and Mr. Anderson
Civil Surgeon, with reference to my letter No. 12
dated 19th September 1867. —

2. They consider that the chief things the town requires
to render it healthy, is more air and drainage.
For this purpose they recommend the destruction of
the walls round the town and a system of sewerage
& drainage. —

3. They have furnished plans & rough estimates
amounting to Rs. 95,000. —

4. It is unnecessary for me to make any comments
on

The Commission on Governmental Organization
will be a better guide to the future of the
subject than the Department of Public Works,
and I request that the report with its
plans and estimates may be forwarded so that
the Department of Education may be better
informed. —

I have the honor particularly to request that
the papers to the Commission forwarded may be
returned to my office.

I have the honor to be,

Sir,

Yours most obedient servant

W. C. C.

For the

1896

1896
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P. 1.
2. 1. 1.

*Proceedings of the Madras Government, Public Department,
5th December 1867.*

No. 40. Read the following letter from the President of the Municipal Commission, Kurnool, to the Chief Secretary to Government, Fort Saint George ; dated Kurnool, 29th November 1867, No. 125.

I have the honor to forward a copy of a report on the requirements of the town of Kurnool, furnished by Mr. Latham, Chief Engineer of the Madras Irrigation and Canal Company, and Mr. Andrews, Civil Surgeon, with reference to my letter No. 112, dated 19th September 1867.

2. They consider that the chief thing the town requires to render it healthy is more air and drainage. For this purpose they recommend the destruction of the walls round the town, and a system of sewerage and drainage.

3. They have furnished plans and rough estimates, amounting to Rupees 95,000.

4. It is unnecessary for me to make any comments on their suggestions, for Government, in paragraph 9 of their Order, 1414, dated 11th November 1867, have referred the subject to the Department of Public Works, but I would request that this report, with its plans and estimates, may be forwarded on to that Department, for such consideration as may be deemed necessary.

5. I have the honor particularly to request that the plan of the town herewith forwarded may be returned to my office.

REPORT of the Special Committee appointed by the Kurnool Municipality to consider Mr. R. S. Ellis' report on the sanitation of the town of Kurnool.

Your Committee were appointed to report upon so much of the Inspection Report of Robert S. Ellis, Esq., Sanitary Commissioner for Madras, dated 2nd May 1867, as applies to the Native Town of Kurnool, viz., paragraphs 49 to 65.

2. The broad facts stated by Mr. Ellis, that a numerous population in a large Native town, cramped for room and crowded in narrow streets and lanes, are without ventilation and any of the conveniences necessary for the health and comfort of a large population ; that the whole town is a labyrinth of narrow streets and lanes, generally ending in *cul-de-sacs* (paragraph 49) ; that in this town every abominable nuisance characteristic of a Native town is exaggerated, so that it is surprising diseases should not be endemic in Kurnool (paragraph 50) ; that the current municipal income, burdened with Rupees 30,000 a year already, will be totally inadequate to construct a complete system of drainage, to widen the streets, erect suitable market places, slaughter-houses, latrines, and to distribute and protect the water supply, and that it is not reasonable that the cost of these works should fall on a single generation of rate-payers (paragraph 51) ; that the grave yards are extraordinarily numerous, and a serious nuisance (paragraph 60) ; that the latrines are chiefly open spaces [amongst the houses or on the walls] devoted to the purpose by prescriptive right (paragraph 54), where buffaloes, pigs, and other animals feed on the ordure (paragraph 55) ; that the meat and vegetable markets are filthy and ill drained, where, as elsewhere, buffaloes may be seen feeding on the ordure freely deposited on all sides. These facts, a nasty and laborious investigation enables your Committee to confirm, and they agree with Mr. Ellis that it is needless to dwell upon further details (paragraph 57) ; yet, should the Municipality or Government think otherwise, more detail can be given.

3. Your Committee urge the necessity of obtaining power from Government to lower the high walls mentioned in Mr. Ellis' report (paragraph 49). The narrow lanes and streets run almost universally between walls 9 or 10 feet high, and these generally enclose yards (probably old encroachments), and are not house walls. In a great many cases they are for mere show ; such part of the enclosure as is out of sight being low or ruinous. These yards, like the houses, are

built, as a glance at the map will show, of a rectangular shape, with the bounding walls always north and south, or east and west. The result of this is that all lanes running diagonally present an aspect utterly preventive of cleanliness. Each side consists of a series of angles of walls 9 or 10 feet high, and the lane is so narrow at intervals that there is barely room to ride through. A Policeman cannot see more than a few yards either way, and cannot see what is going on in the corners until he is opposite them. Each corner is used as a latrine. The heat and stench under a vertical sun is horrible. Such streets are useless for trade, and the enclosures which form them are equally ruinous to health and morality. There is no chance of keeping them clean by means of Police. The only way of obtaining cleanliness and ventilation is to order the lowering of all walls of enclosures to 6 feet or 6½ feet, and to cut off all the angles projecting into the street, paying the proprietors compensation. Power to do this should be vested in the Municipality.

4. With these remarks your Committee pass to the practical part of their report. They agree with Mr. Ellis (paragraph 52) that it only requires these obvious sanitary improvements to render a town occupying such a site as Kurnool does perfectly safe for the troops and civil establishments stationed there.

It is impossible to predict when an enclosed town with a growing population, and with no better sanitation than Kurnool has, or London once had, will be struck with plague or fever. It is none the less certain that the time will come sooner or later. It is prudent to take as a warning the intermittent fever which attacked every Englishman in the station, and reduced the Regiment to 250 invalids on parade, last year, especially since, in a milder but as universal an attack, it is being repeated this year. The general lowering of the system by the poison of malarious annual fever renders a visitation of some infectious pestilence a mere question of time.

5. The two points to which your Committee have especially directed their attention are (1) the drainage, and (2) the ventilation of the town.

6. I.—*Drainage.* Mr. Ellis' report appears to your Committee to give too favorable a picture of the facilities for securing purity of the surface and substratum of the town by drainage. The general slope is favorable; but the subsoil, consisting of hard and irregular rock, difficult to excavate and full of fissures, is the worst possible for sanitation. Drainage water is proved to run in some cases 100 yards through the cracks and beds of the rock, and to reappear in pools at lower levels. In most parts there is really no top-soil.

7. Kurnool is a perfect example of a Mahomedan self contained fortified town. Each house has its cess-pools excavated down through the strata or rock. Every street has its grave yard. Each grave and cess-pit is a centre of putrefaction, radiating round it to a distance depending on the more or less open character of the rock.

8. Along the elevated street forming the chief bazaar, a deep water-course was cut through the rock, continually supplied with water from the canal. There is no doubt that the water therefrom flowed through the rock down the slopes on which the most populous part of the town stands, so much as to fill many grain-stores and cellars, and to call for the interference of the Collector. The effect of this sub-stream must be to spread the putrefaction from every grave and cess-pit it encountered, under the houses and into the cellars, in a way most dangerous to public health.

9. To tap this filtration by drains of slight fall running nearly as contours, would be practically futile. The length and depth of such drains would make them expensive, and as they would not themselves be watertight they would only spread the evil. The excessive cost of excavating and lining them are not the only objections: houses would have to be pulled down over nearly their whole length.

10. The principle of draining down the steepest slope by deep sewers is the one your Committee recommend. V-shaped surface drains will suffice for conducting street sewerage into these. The natural main drainage has been originally selected to form the streets; and in every case the original water course still exists as a street. These sewers may be completely flushed by bringing

water (as already proposed), for a distance under three-quarters of a mile, from the town water supply, along the street running north-west of the Russell Bazaar, and thence along the Big Bazaar. But most of the surface drains will require to be flushed by cart or hand during the dry weather. The sewers will be so small, owing to the rapid fall, as to be comparatively easy to construct, since their course is generally through irregular masses of hard gneiss and quartzite.

11. Open sewers have been adopted where there is no sewerage, or where the sewerage is an insignificant proportion of the expected discharge. The only way of ascertaining very closely the cost of the proposed drains is to have the ground carefully examined in each street, and levels taken, by a professional Engineer. The present estimates are founded upon a close observation of the various streets during, or just after, showers, and upon the knowledge gained by laying down V-shaped drains by the prisoners, paving the neighbourhood of the town wells, &c., and your Committee have confidence in the totals being sufficient and approximate. No estimate is included for the supply channel for flushing, since the Municipality has already undertaken to find funds for the water-supply generally. The Committee recommend that the sewers be made available to supersede the employment of toties, by constructing latrines over them; this, also, is left as a burden on the Municipality. Also, where the Municipality is opening out new roads, the cost of making surface drains is left to them.

12. Under these limitations, your Committee estimate the cost of making 28 chains of open sewers at Rupees 4861; 192 chains of closed sewers at Rupees 51,400; and of above 8 miles of surface drains at Rupees 7000—making, with an allowance of 10 per cent. for supervision and contingencies, a total of Rupees 70,000.

13. II.—*Ventilation, including road round the town.* The breeze is, at present, shut out from entering the mouths of the streets in all the populous parts of the town by the old Government wall (averaging, with parapet, 12 feet high), which runs uninterruptedly round all the river faces of the town. The cost of removing this, so far as it can be removed, without undue interference with vested interests, has been carefully estimated by your Committee; the difficulty of disposing of the rubbish, and the cost of shifting it into hollows, now dangerous to public health, having been carefully considered. The cost will be, including 10 per cent. for supervision and contingencies, Rupees 19,500. The removal of this wall would leave an open space, which would be used for the deposit of all kinds of filth; but this space may be utilized by making a good road round the town on the site of the old wall. Considering the facilities available, and also the expense of the drains, and numerous culverts, your Committee estimate this road, 36 feet broad, to cost Rupees 5500, including contingencies, but not including the cost of buying up about Rupees 5000 worth of houses and property. Your Committee beg to record their thanks to the Collector and Assistant Collector (Mr. Turner) for the assistance they afforded them by personally attending the survey of this work.

14. It will be observed that your Committee have entirely confined their attention to the rectification of the acts or omissions of past Governments. The construction of a covered market, slaughter-houses, latrines, dust bins, and the distribution of the water supply are all pressing works of public benefit and sanitation, which your Committee have left to be the work of the unaided Municipality.

15. Your Committee respectfully recommend that Government be requested to contribute a lakh of Rupees, which will suffice for the works now proposed. Also, since, in practice, the time of the Government Engineer of the District has proved to be too much occupied to admit of his bestowing any of it in guiding the Municipality, it is recommended that an Engineer (an Englishman) be appointed for three years on Rupees 300 a month, and Rupees 50 horse allowance (to be assisted by the Municipal staff as much as convenient), of which salary the Government contribution of a lakh bear two-thirds. The works now proposed should be completed in two years, if no delays occur; but if the other works alluded to as requiring to be done by the Municipality be also pushed forward, it will be prudent and economical to allow three years for the whole.

16. In reference to paragraphs 49 and 53 of Mr. Ellis' report, the recent paving of all the reservoirs has prevented the contamination of the soil with waste water. To carry out the dry

*Proceedings of the Madras Government, Public Department,
5th December 1867.*

earth system by a construction of latrines and by tany-men has proved impossible, on account of the failure of both; but the sewers will afford the means of providing new efficient latrines. All other matters referred to in Mr. Ellis' report are receiving attention by the Commission, and cannot be cleared up by any remarks of your Committee.

P. S.—Herewith are enclosed the following documents :—

- I. Plan of Kurnool Town, showing the projected improvements.
- II. Detail estimate of cost of removing the old town wall.
- III. General estimate of the projected improvements included in this Report.
- IV. to VIII. Five sheets of Sections.

KURNOOL, 8th November 1867.

(Signed) J. H. LATHAM,
Civil Engineer.
(") C. A. ANDREWS,
Civil Surgeon.

No. 41.

No. 1529.

Referred to the Department of Public Works for consideration.

FORT SAINT GEORGE,
5th December 1867.

Chief Secretary.

To the Public Works Department, with plan, sections, and 2 estimates.

Ed. J. H. Burns.

Report of the Special Committee
appointed by the Kurnool Municipi-
-pality to consider Mr. R. D. Ellis'
report on the Sanitation of the town
of Kurnool.

Your committee were appointed
to report upon so much of the Inspe-
-ction Report of Robert D. Ellis Esq.
Sanitary Commissioner for Madras
(dated 2d May 1867) as applies to the
Kurnool Town of Kurnool City paras

49 to 65.

2 The broad facts stated by Mr. Ellis
that a numerous population in a
large native town, cramped for
room and crowded in narrow
streets and lanes, are without
ventilation and any of the con-
-venience necessary for the health
and comfort of a large population
that the whole town is a labyrinth
of narrow streets and lanes,
generally

generally residing in cul-de-sacs
(para 49); that in this town every
abominable nuisance characteristic
of a native town is exaggerated, so
that it is surprising diseases should
not be endemic in Shanghai (para 50),
that the current Municipal Council,
burdened with £1,000,000 a year,
already, will be totally inadequate
to construct a complete system of
drainage, to widen the streets, erect
suitable market places, slaughter
houses, latrines, and to distribute
and protect the water supply, and
that it is not reasonable that the
cost of these works should fall on
a single generation of rate payers
(para 51). That the graveyards are
extraordinarily numerous, and a
serious nuisance (para 60) that the
latrines are chiefly open spaces.
[arranged the houses, or on the walls,
devoted to the purpose by prescription
with.]

right (para 54), where buffaloes
hogs, and other animals feed on the
ordure (para 55); that the markets
and vegetable markets are filthy
and ill drained, where, as elsewhere,
buffaloes may be seen feeding on the
ordure freely deposited on all sides.
These facts a hasty and laborious
investigation enables your Com-
missioners to confirm, and they
agree with Mr. Hill that it is need-
less to dwell upon further details
(para 57); yet should the Munici-
pality or Government think
otherwise, more details can be given.

3 Your Committee urge the neces-
sity of obtaining power from
Government to lower the high walls
mentioned in Mr. Hill's report.
(para 49). The narrow lanes and
alleys run almost universally
between walls 9 or 10 feet high and
these generally enclose yards (probably
old encroachments) and are not
houses

house walls. In a great many cases they are far more than such part of the enclosure as is out of sight being low, or ruinous. These yards, like the houses, are built as a glance at the map will show, in a rectangular shape with the bounding walls always at the end and east, or east and West. The result of this is that all lanes running diagonally present an aspect utterly precluding cleanliness. Each lane side consists of a series of angles of walls 9 or 10 feet high, and the lane is so narrow at intervals that there is hardly room to ride through. A Policeman cannot see more than a few yards either way, and cannot see what is going on in the corners until he is opposite them. Each corner is used as a latrine. The heat and stench under a vertical sun

is horrible. Such sheets are useless for trade, and the enclosures which form them are equally ruinous to health and morality. There is no chance of keeping them clean by means of police. The only way of obtaining cleanliness and ventilation is to order the lowering of all walls of enclosures to 6 feet or 6½ feet, and to cut off all thorough projecting into the street, paying the proprietors, compensation. Power to do this should be vested in the Municipality.

4. With these remarks your Committee pass to the practical part of their report. They agree with Mr. Ellis (para 52) that it only requires these obvious sanitary improvements to render a town occupying such a site as Sharnob does, perfectly safe for the troops and civil establishments stationed there.

It is impossible to predict when

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growing population, and with no
better sanitation than Thurnool
has, or Candamane had, will be
struck with plague or fever. It is
none the less certain that the time
will come sooner or later. It is
prudent to take as a warning the
intermittent fever which attacks
many Englishmen in the station,
and reduced the regiment to 250
invalids on parade, last year;
especially since in a sudden but
unavoidable attack, it is
being repeated this year. The general
lowering of the system by the poison
of malarious miasmata renders
a visitation of some infectious
pestilence a mere question of time.

5 The two points to which, your
Committee have especially directed
their attention are 1. The Drainage,
and 2. The ventilation of the town.
1 Drainage

6 I. Drainage. Mr. Ellis's report
appears to your Committee to give
too favourable a picture of the fac-
ilities for securing purity of the
surface and subsoil of the
town by drainage. The general slope
is favourable; but the subsoil,
consisting of hard and irregular
rock, difficult to excavate and
full of fissures, is the worst
possible for sanitation. Drainage
water is proved to run in some
cases 100 yards through the cracks
and beds of the rock and to re-
appear in pools at lower levels.
In wood parks there is really no top
soil.

7 Thurnool is a perfect example
of a Mahomedan city - contained
fortified town. Each house has
its cess pools excavated down through
the strata or rock. Every street has
its grave yard. Each grave and
cess

cess pit is a centre of putrefaction, radiating round it to a distance depending on the more or less open character of the rock.

8. Along the elevated street forming the chief Way on a deep water-course was cut through the rock, continually supplied with water from the Canal. There is no doubt that the water therefrom flows through the rock down the slope on which the most populous part of the town stands, so much as to fill many grain stores and cellars, and to call for the interference of the Collector. The effect of this subterranean must be to spread the putrefaction from every grave and cess pit it encountered, under the houses and into the cellars, in a way most dangerous to public health.

9 To tap this filtration by drains

³
drain⁵light fall running ⁶heavily ¹²as contours, would be practically futile. The length and depth of such drains would make them expensive, and as they would not themselves be watertight they would only spread the evil. The excessive cost of excavating and lining them are but the only objections; houses would have to be pulled down one, nearly their whole length.

10 The principle of draining down the steepest slope by deep sewers is the one your Committee recommended. V shaped surface drains will suffice for conducting street sewage into them. The natural drainage has been originally selected to form the streets; and in every case the original water course still exists as a street. These sewers may be completely flushed by bringing water (as already proposed), for a distance under $\frac{3}{4}$ mile, from the Town water supply, along the street running north-west of

of the Russell Wagon, and thence
along the Big Wagon. What work
of the surface drains will require
to be flushed by cart, or hand during
the dry weather. The sewers will be
so small, owing to the rapid fall,
as to be comparatively easy to con-
-struct: since their course is generally
through irregular masses of hard
gneiss and quartzite.

11 Open sewers have been adopted
where there is no sewerage, or where
the sewerage is an insignificant
proportion of the expected discharge.

The only way of ascertaining very
closely the cost of the proposed drains
is to have the ground carefully ex-
-amined in each sheet, and levels
taken, by a professional Engineer.
The present estimates are founded
upon a close observation of the various
sheets during, or just after, showers
and upon the knowledge gained
by laying down V shaped drains by
the

The prisoners, having the neighbor-
-hood of the town wells, &c; and
your Committee have confidence
in the totals being sufficient and
approximate. to estimate is
included for the supply channel
for flushing; since the Municipi-
-pality has already undertaken
to find funds for the water supply
generally. The Committee recom-
-mend that the sewers be made
available to supersede the employe-
-ment of Cories, by constructing
labrines over them: this also is left
as a burden on the Municipality.
Also where the Municipality is
opening out new roads, the cost of
making surface drains is left to
them.

12 Under these limitations your
Committee estimate the cost of
making 28 chains of open sewer
at Rs 4,861; 192 chains of closed sewer
at Rs 51,400; and of about 8 miles of
surface drains at Rs 7,000 - making
with an allowance of 10 per cent.
for

for supervision and contingencies
a total of Rs 70,000.

13 2. Ventilation including road round the Town.

The breeze is, at present, shut out
from entering the mouths of the
streets, in all the populous parts
of the town, by the old Government
Wall, averaging, with parapet, 12
feet high, which runs uninterrupt-
edly round all the river faces of
the town. The cost of removing this
so far as it can be removed without
undue interference with vested
interests, has been carefully estimat-
ed by your Committee; the diffi-
culty of disposing of the rubbish,
and the cost of shifting it into hollow
now dangerous to public health, having
been carefully considered. The cost
will be, including to proceed for
supervision and contingencies,
Rs 19,500. The removal of this wall
would leave an open space which
would be used for the deposit of
all

918
all kinds of filth; but this
space may be utilized by making
a good road round the Town on
the side of the old wall; considering
the facilities available, and also
the expense of the drains, and
numerous culverts, your Commit-
tee estimate this road, 36 feet
broad, to cost Rs 5,500, including
contingencies; but not including
the cost of buying up about Rs 5000
worth of houses and property. Your
Committee beg to record their thanks
to the Collector and Assistant
Collector (Mr. Currier) for the as-
sistance they afforded them
by personally attending the survey
of this work.

14. It will be observed that your
Committee have entirely confined
their attention to the rectification
of the acts or omissions of past
governments. The construction of
a

a covered market, slaughter-
houses, latrines, dust bins and
the distribution of the water
supply are all pressing works of
public benefit and sanitation
which your Committee have left
to be the work of the unaided
Municipality.

15 Your Committee respectfully
recommend that Government
be requested to contribute a lac
of Rupees, which will suffice
for the works now proposed. Also
since in practice the time of the
Government Engineer of the Div-
ision has proved to be too much
occupied to admit of his bestow-
ing any of it in guiding them
Municipality, it is recommend-
ed that an Engineer (an English-
man) be appointed for 3 years
on Rs 300 a month and Rs 50
horse allowance to be assisted by
the Municipal staff as much

as convenient). Of which salary
the Government contributes
of a lac bear two thirds. The works
now proposed should be completed
in 2 years, if no delays occur:
but if the other works alluded
to as requiring to be done by the
Municipality be also pushed
forward it will be prudent
and economical to allow 3 years
for the whole.

16 In reference to paras 49 & 53
of Mr. Ellis's report, the recent
paving of all the Reservoirs has
prevented the contamination
of the soil with waste water.
To carry out the dry earth system
by a construction of latrines
and Chis-men has proved im-
possible on account of the failure
of both: but the sewers will afford
the means of providing effi-
cient latrines. ~~After this is referred to in Mr. Ellis's report~~
referred to in Mr. Ellis's report are
receiving attention by the Commission
and

and cannot be cleared up by
any remarks of your committee.

Thurnool (Signed) John B. Latham
8th November, 1867 Civil Engineer
(Signed) Charles R. Andrews
Civil Surgeon

Herewith are enclosed the following
documents

- I Plan of Thurnool Town, showing
the projected improvements.
- II Detail Estimate of cost of
removing the old Town Wall
- III General Estimate of the pro-
jected Improvements included
in this Report.
- IV to VIII Five sheets of sections

(Signed) J. B. L.

(Signed) Andrew

(Enclosure)

Thurnool Municipal
Office, 20th November
1867

J. Chase
President

Sub. Prov. 5th Dec. 1867
In A. 140.

Pro. 11th Nov 367 42-77/8.
28 - " " 1493.

intercepted

N^o. 1529.

Referred to the
Department of
Public Works for
Consideration.

Fort St George
5th Decr 1867

To the P. W. Dept - with clay, sections
and estimates depth 11/2

From Police Dept
The Resident Magistrate
Commissioner
Hume

as Chief Surveyor
to Government
Fort Saint George

Dated 29th November 1867
Received 2nd Decr

N^o. 1257
No 1971
Enclosures 1 ✓

Forwarding report
furnished by Mr. Latham
and Mr. Andrews on
the requirements of the
Army of Hume
together with his opinion
on the subject.

With Dock

4004/