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Local & Munl. (1896) Department.

PRINTED.

G.O., No. 858

DATED 18th May 1896

[Despatch Abstract.]

Inspection Notes.

Recording, with remarks, the Sanitary Commissioner's

------ on the Nellore Municipality.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Sewerage (1) V shaped drain
& laterite are employed
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defective shape, the numerous
holes in the laterite and
inefficient flushing
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source of nuisance.
In Nellore East, the stench
from these drains is very
marked. The house con-
nections also are very
bad. Under section 213,
there is no reason why
the latter point should
not be attended to.
Special arrangements
for flushing the drains
near their heads from
some well should be
arranged for. If
necessary to effect a
junction, small open
drains or pipes should
be laid between the
wells and the drains,
and for the drains
themselves their section
should be altered by
filling

No. 1341 M dated
-1th Sep 1894.

2 Dwellings (a) the house walls are largely used for the drying of cow-dung cakes, contrary to the bye-law adopted by the Council.

(b) Thomaspetta. This pettah was laid out with streets of liberal size originally. Slowly but surely, however, encroachments have been allowed to proceed by temporary buildings and verandahs being made permanent; so that the available road area has been much curtailed. Immediately behind the main street, buildings are being erected without any attempt at order. This is a mistake, for which probably future generation will suffer; in that to secure regular lines of buildings, compensation must be forthcoming

Sewerage

18

Inspection Notes of the Sanitary Commissioner, Madras.

Nellore District

Nellore Municipality

Inspected 11th to 14th November 1895

Population as per census of 1891

Males	14,310
Females	15,026
Total	29,336

The permanent Dinles Coolies are employed in repairing the uneven roads. Portions raised beyond the require-ments will be lowered wherever feasible and measures recommended to permit exit of storm water will be adopted.

Roads and Surface drainage. (a) These are in some places very uneven, and, in others, raised beyond require-ments. As an instance of the latter condition, I may point to the fact that the surface drainage in the Pensioner's lines, not-withstanding the presence of a [illegible] gradient, is [illegible] that the who[le] rainfall [illegible] flooded rendering [the] houses damp and notoriously

notoriously unhealthy.
It would be easy to remedy
this condition by placing
culverts or iron pipes
at suitable intervals
below the road, so as
to permit the exit of
flood water.
(b) In the bazaars, the
surface water drain is
covered at one spot
with boards, at another
with stones, and at
another with boxes. The
culverts connecting
the drains across streets
at right angles are
blocked with silt.
Granting ~~the fact~~ that
these drains do not
transmit sewage but
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Conne

These boards, boxes &c are pro-
-duced by the Bazaar men to show
they belong during sweeping &
Cleaning by the drainers. The G.O.
quoted is being given Effect to
as far as possible.

The delinquents in this respect
are being prosecuted and it is
hoped that the practice will soon
be entirely stopped.

No doubt there has been some
slackness on the part of the Commis-
-sariat in the matter of encroachments
in days gone by directly due to
insufficient out door establishment,
but now encroachments are vigorously
prevented and as to effect this still
more satisfactorily, the Government
will be addressed on the subject of
having this Service strengthened at an
early date.

The drains in the town Excepting one or two Diviver ones, being very old-fashioned with defective levels and Completely devoided of flushers Are indeed more a source of Nuisance. The Drainers Clean and flush them as far as possible Every day. To remedy the defective House Connections pointed out, steps will be taken under Section 213. The suggestion to make Special Arrangements for flushing the drains near their heads from Power used will be Carried out if found feasible. Although the works of altering the section of the Existing Drains and the Drawings pointed out, Cannot be undertaken & Carried out at once owing to paucity of funds, the Council hope to be able to do something in this direction year after year. As the few little drains in Nellore west and the drain leading to drains receiving very little Sewage, the Council do not think it worth while starting a plot for Cultivation as suggested by the Assistant Commissioner Especially when no funds Can be spared for any such Experiment

*Nellore per lineal foot:—
3" 4" 6" 9" 12" 18" 15"
As2/ As3 As4 As6 As10 Rs1 As15

filling with cement con-crete having cement plaster surface, or, if this proved less expensive, Burns' hollow tile drains might be laid upon lime concrete within the existing drains. Were these points attended to, the existing sewerage arrangements would be of considerable sanitary value to Nellore west. The sewage from this part of the town has no definite destination. It is allowed to crawl near the channel or, in wet weather, to find its way into it. Yet, it would, as I pointed out in 1890, be a simple enough matter to start a small sewage plot; where cultivation could be profitably pursued with sewage close to the present point of exit; or, if the expense were not prohibitive, by underpumping

undersyphoning the irrigation channels, and applying the sewage to a plot on the opposite side.

(b) The principles laid down in the above are also applicable to the drainage arrangements in Nellore East.

(c) In carrying out these improvements, it would simplify the work necessary if at least one of the present irrigation channels on the East side were abolished. Both are within 7 or 8 yards of each other, and there seems no *prima facie* reason why the flow should not be united in one channel

4. Water-supply (a) The chief source of supply is the channel from the Nellore tank. This receives a considerable amount of surface washing from inhabited

The question of starting a sewage farm in the Nellore East will however, receive attention of the Council when complete & thorough flushing of the drains in this part of the town on lines suggested by the Sanitary Commissioner in para 3 (a) become possible.

The Revenue authorities will be addressed on the subject.

The channel from the Nellore tank supplies drinking water only to a portion of people of Nellore west and one or two other suburbs and not to the whole town as one might think from the Sanitary Commissioner's notes. There are several good water wells

besides, and a good many people of Nellore East resort to the Suvvapally Channel for their drinking water. Of course by this it is not meant to show that drinking water is ample in this town and that therefore a correct water supply need not be troubled about, but on the contrary to show that the introduction of a correct water supply is the most necessary, since at present the great majority of the people are compelled to look to open channels for their drink of life but the water of which channels is necessarily liable to every imaginable kind of pollution. The Council hopes to be able to take on hand, before long, this very necessary water supply scheme. On the channel pointed out, one or two notice boards are being arranged to be put up to warn the public against defiling the water, and a permanent watchman has also been sanctioned by Government from April next. There is no special well excavated by Dr. Ross near any part of the course of this channel, perhaps the excavation by the Municipality near the old slaughter house is meant. The Council will consider the advisability of improving this well.

inhabited areas as well as sewage. Although an order exists that it shall be reserved for drinking water purposes, the precaution of placing watchmen along the channel to see that the order is enforced is not arranged for. Pending the introduction of a correct water-supply, which I trust the Council now see the urgent necessity for, I consider some means should be taken to temporarily secure that water in this channel shall not be delivered in a dangerously contaminated condition. During 1891, 523 deaths occurred from cholera in this town showing that when cholera is introduced into Nellore, it is an enemy not to be lightly got rid of. The water might be conducted up to the special well excavated by Dr. Ross

near

near the channel in stoneware or rivitted iron pipes — a suggestion made by the Certificated Sanitary Inspector — or, the well might be employed for receipt of filtered water from a surrounding gravel filter. Either mode would secure a better quality of water than that at present in use. But, the success of such temporary method would depend very largely upon the care with which the reservoir whence the supply is brought by this channel, is protected. On my inspection, certain extraordinary evidence to the opposite was presented to me; the revetment of the tank on the town side was so covered with successive deposits of human faecal matter that scarcely a cubit of the length of any single

row

And utilizing it for receiving filtered water from a surrounding gravel filter as suggested, should funds permit. Government will be requested to include the tank and its bund within the Municipal limits.

row of stones down to the water's edge could be distinguished continuously. This was the condition for 150 yards of the bund. Practically, the same condition of affairs was pointed out in my Inspection Notes, embodied in G.O. No. 1802 M. dated 25th November 1890. The excuse forthcoming on behalf of the Municipality is that the tank is outside their limits; but if the source be recognized as a drinking water supply there is available section 277 of the I.P.C, and again section 145 of the Act they administer. The Municipality should bestir themselves about this disgusting and dangerous state of their chief water supply. It is impossible that

some

some arrangement could not be arrived at by which Police Constables could be placed ~~[illegible]~~ at their disposal, irrespective of it being extremely unlikely that the D P W would object to the claiming of a watchman paid by the Municipality to prevent trespass on their land. The tank should be included within Municipal limits. The objection raised to this is that a portion of the Local Fund road would thus fall under the care of the Municipality and add to their expense; but it is a common enough matter for a Local Fund Road to run through Municipal limits, and yet be supported at Local Fund expense, and

This was not attended to.

Immediately on receipt of the "Notes" Orders were issued to stop this practice, And the Collowhere will be filled up Gradually only by Clean Earth.

68

and I see no reason why this should deter the Municipality from asking Government that its limits be extended so as to include the tank and its bund.

(b) Near the market is a collection of huts inhabited by coolies close to the edge of the channel. This certainly cannot aid the chances of water purity. The Council should give these persons a site elsewhere, and remove them without delay.

(c) In my Notes of 1890, I pointed to the most objectionable practice of throwing rubbish close to the channel near Dykes bridge; rubbish is no longer deposited there, but by an extraordinary mode of reasoning the Municipality has placed instead drain sludge! If it is requisite that

this

this portion be filled up, nothing but clean earth should be employed.

(d) Close to Dykes' bridge is a patch of ground evidently forming a favourite spot for easement. Steps should be taken in consultation with the Police to put a stop to this.

(e) <u>Kaja Peer</u> well in the bazaar. This is a step well, and on this account alone is highly objectionable. It receives much filth from the surroundings, and is used for ablution after defaecation which proceeds unchecked in the immediate neighbourhood. On one side is a "dumb-well," which is said now not to receive faecal matter; but as there is no private latrine in the house to which it is attached, I

This is only one of the many spots so used. The Superintendent of Police who was addressed on this subject more than once lent with little effect. The plea put forth is that the Department is too undermanned to assist the Municipality materially in this respect: the Superintendent of Police in his letter No 67 dated 10-2-96 stated that the Police are doing their best and as if to effectually stop being any more bothered by the Council on this subject, wound off by pointing out, in a quasi-Sanitary-Officer like fashion that the latrines are "ridiculously" too few for this town and that the best way of preventing commission of nuisances was to build more latrines and urinals. The only hope of the police doing any real service in this direction seems to lie in moving the Government to enquire through the Inspector General of Police into the plea so often put for the insufficiency of hands and to remedy the evil if proved not to be imaginary.

Steps will be taken to have both these wells closed.

Will be attended to.

As stated under para 4(a), Govt. has sanctioned a permanent watcher whose duty will be to watch this reservoir as well as the Channel from the Nellore Tank down to the Market.

Will be attended to.

I ~~should~~ receive this statement with caution. The proper course for the Municipality to pursue with this well, is to cause it to be shut up permanently (Section 156(2)).

(f) <u>Balaka's well</u>. This is much used. A platform should be supplied, and the parapet should be so altered as to prevent persons standing upon it. It should then be supplied with pulleys.

(g) <u>Moulla tank</u>. A watchman is employed <u>only 4 months in the year</u> to watch this tank. This arrangement is of little use. The man should be employed throughout the year.

(h) <u>Raja Street Moulapettah well</u>. This is a favourite well. The stone beam across it should be removed, so as to prevent persons standing

over it when drawing water. It should be cement lined down to the water level.

(b) Conservancy. (a) Rubbish Conservancy. The condition of backyards shows that a large part of the total rubbish is stored within the Town by private persons. In to an appreciable extent. Several Municipal attempts notwithstanding the fact having been brought to notice by this Office from time to time - although improvement has been effected - quarries were found near habitations in which up to date rubbish is stored

(b) Night soil Conservancy. The latrine accommodation provided is defective both as to number and character. Of 28 latrines, 24 are mere enclosures surrounded either by brick

Large Number of Notices have been issued to parties to Clean their Yards and many defaulters have been prosecuted vigorously as to practice of keeping rubbish in Yards has been already stopped to an appreciable extent. Several of the Quarries Existed in 1890 were Entirely Closed, Action having been taken by the Municipality under Sections 134 & 135 the few remaining and the New ones will be dealt in the Similarly.

The defective latrines are being Gradually replaced by Iron Ones of approved pattern. Provision has been Made to Erect 4 Iron latrines Next year.

Of the 7 Wooden Night soil Carts 6 were replaced this year by six Night Iron Ones of 12 Cft. Capacity At a Cost of Rs 600 & odd. Other or Drays will be purchased Next year So as to Make up the required Number. It is out of the Question to Employ Bullocks to Draw these Carts As the Monthly hire for a pair of Bullocks in this Town is as much as Rs 25. Instead of Bullocks Horse Pearl Gagers Might with advantage be Employed As they will be Available for better Conserving of the latrines &c besides Making 2 trips to the Night Soil Depot. Provision will be made in the Next budget for Iron Conservancy Buckets on Wheels And for Seven Coolies Hand Buckets for the Private Pearl Pugging Staff As Suggested.

brick or katty walls. There are two corrugated iron latrines. "Open space" latrines do not fulfil sanitary requirements, and should be replaced either by the forms advocated by Mr. Donaldson, Calcutta, or the Sanitary Board.

(c) Night soil and rubbish removal. The methods pursued are very crude and unsuitable. There are 7 square wooden night soil carts, in which the faecal matter is placed in layers of straw and 15 rubbish carts. The whole are dragged by men. The Municipality should purchase 12 iron night soil carts of 12 cubic capacity or 8 of 100 gallons capacity. These should be drawn by bullocks, and not less than two trips per day should be made. This provision is the least

that

that can accomplish the work required; and makes no allowance for the conveyance of urine or substances mixed with foecal matter, and presupposes the whole of the carts to be filled to the brim. In addition the private scavengering staff should be provided with conservancy buckets on wheels, in the proportion of one bucket to every 3 men; and for removal of excreta from the houses iron covered hand buckets should be used, instead of the present unsuitable baskets.

(d) All this means expenditure, of course; but if the Municipality is to make any attempt at serving sanitary dictates, it certainly ought to commence to

The minor improvements suggested by the Sanitary Commissioner are being carried out year after year, and as regards the Water Supply and Drainage Schemes the Council intends moving the Government, as soon as the Amended Act comes into force

As desired in their Order No. 38 M. Mis dated 12 January 1875

The work of improving the publish Depot referred to, on the lines suggested, will be taken on hand soon. The Council fears it cannot at present turn its attention to the matter of poudrette manufactory as it would involve an additional staff the expenses of which it is not prepared to meet, especially as a ready sale of the new stuff in this town or its neighbourhood as anything like a remunerative price is extremely doubtful.

to deal with the A.B.C Conservancy. If it cannot meet these demands from current funds, it certainly ought to ask permission to raise a loan. It is out of the question that a Municipality of thirty years standing should not be provided with all things essential for correct conservancy.

(e) Rubbish and night-soil depots. One of these is situated on the Kistnapatam road; the other near the Nunkoor road. The ~~latter~~ former is at present in an unfit condition for its purpose. It could however be rendered of utility if properly drained and levelled. The Sanitary Inspector being a Certificated man, is aware of the method that should be

be pursued in carrying this out, and, as he assures me he has pressed the matter on the attention of the Municipality, I trust that early action will be taken. There is every reason to believe that pondrette would obtain a ready sale in the neighbourhood of Nellore.

(5) Only 842 houses of a total of 1,275 are attended to under the private scavenging system. The attention of the Municipality is invited to G.O. No 749M dated 13th June 1894.

6. Slaughter house (1) This has been lately built. The well water is obviously not used; the butchers resort instead to the foul water of the channel. I advise the Municipality to apply for a copy of the

Attempts are drawn to increase the Number of houses served by private scavenging system strictly according to prosecution of Owners of unclean premises and the Revenue is appreciably increasing Months after Month.

The use of the Channel water has been entirely prohibited now; and the Sanitary Inspector has strict Orders to see that the Sewage Cistern inside the Slaughter house is kept filled with the best water before Slaughter Commences every Morning. Provision will be drawn in the Estimate for a Cart horse and the Sanitary Board will keep applies to for a Copy of the revised Plan.

The Council for the present intends Leasing out the Land around the Slaughter house for Cultivation with the Aid of the Sewage and refuse referred to and if the result is found Satisfactory, will Construct the Premises Experimentally.

The Plans and Estimates for the Stalls were duly approved by the Sanitary Board and the

the revised plan lately issued by the Sanitary Board, which provides for a gutting room and for the distribution of water within the slaughter house correctly protected. This would add very little to the total cost of the existing building, and greatly enhance its sanitary value.

(6) No effort is at present made to dispose with advantage of the refuse and washings from the slaughter house. Suitable ground surrounds the slaughter house, and the Municipality would do well to convert it into a garden for production of vegetables, or other crops, cultivated with the aid of the sewage and refuse.

7. Market. This is a structure upon which

the

the Municipality has spent money fitfully. The first ambition was to secure a surrounding wall and, in obtaining this, little money seems to have been left to build correctly the market. As it stands, it fulfils but poorly its functions. Last year, the Municipality spent Rs 700 upon erecting butchers' stalls. These have earthen floors, and are not provided with drains. The usual want of arrangements as to cleanliness with reference to disposal of meat is found. As to this, the Sanitary Inspector should advise the Municipality. Under G.O. No. 79.L dated 18th January 1896, the Municipality should have consulted the Sanitary Board before spending the sum

improvements suggested should be carried out as soon as possible.

The Council has taken this matter earnestly on hand and hopes to be able to make satisfactory arrangements very soon.

Licenses for skin stores were withheld 2 or 3 years ago, as it was thought undesirable to have them within the town. But it is intended again to insist on their being licensed. Owners of bullock carts also will be asked to obtain licenses. The Sanitary Inspector has been directed to make special inspections of skin stores so as to their sanitary condition.

The Vaccination sheds proposed to be built belong to the Municipality but are the property of the District Board. The Council understands that the District Medical and Sanitary officer has recently—

sum of Rs 700, when doubtless they would have been advised to adopt a plan more in accordance with sanitary dictates.

8. Graveyards. This subject has already been treated in my letter No. 2111/S dated 2nd November 1895, embodied in G.O. No. 2112 Pu dated 17th December 1895.

9. Offensive trades. A considerable number of "cattle yards" bakers and skin stores are neither licensed nor specially inspected as to their sanitary condition. Arrangements should be made to give effect to section 188 on this subject.

10. Vaccination. (a) The vaccination sheds in which the calves are retained are incorrectly built, and

do

do not fulfil require-
ments. The Municipality
should apply to the
Sanitary Board for
suitable plans and,
should in conjunction
with the District Board,
build accordingly.

Addressed the President of the District Board with a view to Alteration of the sheds and building a third one for better accomodation of the Calves.

Of a total of 36 children
up to 10 years of age
met on the streets hap
hazard 77 per cent were
found protected by
Vaccination, and 11 per
cent by small-pox.

The following figures
exhibit the progress
of Vaccination:-

Year	Total births registered between 1st January and 30th June	Number vaccinated	Successfully	Unsuccessfully	Re-vaccinated a second time because 1st operation proved unsuccessful	Successfully	Unsuccessfully	Performed under Section certificate of the last 6 months	Died	Left the town	Unaccounted for	Ratio of vaccinations to births per cent
1895	403	141	-	-	-	-	-	7	78	149	1	34.98

The cooks of the 2 Registrars in Checked by the 2 Sanitary Inspectors regularly, but although Care is taken to see that the sanitary staff do so it is believed that it is possible for improvement in this respect and the Council will consider how to best effect the improvement.

There has been an appreciable increase in the number of prosecutions during the last few months.

11. Registration. This is conducted by 2 registrars on ~~Rs~~ 10 each. Only 20 prosecutions were made during the last year for failure to register. The estimated population at the end of December 1895 was 30,264; but according to municipal registration it amounted to only 29,904. Much more energy on the part of the Municipality in this matter is essential.

Years	Ratio of births per mille of estimated population	Ratio of deaths per mille of estimated population	Percentage of deaths from:- Cholera	Small pox	Fevers	Dysentery & diarrhœa	All other causes
1893	24·2	17·7	-	0·6	28·3	3·4	67·7
1894	29·8	20·2	0·2	1·5	33·4	1·1	63·8
1895	30·2	20·5	-	-	24·5	2·6	72·9

12. Sanitary administration.

(a) More economy might, I think, with advantage be exercised in the matter of office establishment, in view of the pressing requirements of conservancy. The following is the list of employees:—

One manager Rs 40
One Head Clerk Rs 25
One 2nd clerk Rs 20
Two clerks Rs 15 each
One attender Rs 8
Two peons on Rs 7 and Rs 6 respectively.

It seems to me that one manager, one head clerk and one copying clerk, and two peons ought to suffice for requirements. This would set free funds urgently required elsewhere.

The reduction in the Office Estt suggested is not feasible. The system of correspondence, keeping of records &c introduced by Dr. C. D. Maclean and also the introduction of various account forms have considerably increased the office work and the number of hands cannot now be reduced without undoing the system, which is a good one and without impairing efficiency.

(b) In my Review of the Budget of the Municipality, I have already expressed my opinion as to the desirability of a complete alteration of the arrangements of the sanitary staff. It having been decided to procure correct plant for removal of rubbish and night soil, there should be appointed 30 sweepers, 60 totties and 8 peons. Irrespective of this question however, I would advise the Municipality to place the Certificated Sanitary Inspector in full charge of the sanitary staff, in direct communication with the Chairman. At present, I understand that responsibility is divided between two Sanitary Inspectors, one of whom has undergone no sanitary training

The question of re-organizing the Conservancy etc. had engaged the serious attention of the Council for a long time and after mature consideration and with the approval of Government the present change was effected & has been working satisfactorily.

It is true that one of the Sanitary Inspectors has not had the Sanitary training but he has been in charge of Sanitation for some years and discharging his duties efficiently.

The Certificated Sanitary Inspector is in charge of that portion of the town where his attention and advice are mostly needed and it will not be to the advantage of the Municipality to place him in charge of the whole town. The Council intends to submit the newly appointed Overseer to training next year. After undergoing training, he will doubtless be of much use to the Municipality in Sanitary matters also without any additional cost.

training.

W. King
Surgn Lt Col
Sanitary Commissioner

Camp Bellary
~~Fort St George~~
13 ~~Jany~~ Feby 1896

F. No. 7/MUN.

EXTRACT FROM RESOLUTION BOOK OF THE NELLORE MUNICIPALITY.

No. 523 dated 18 March — 1896.

14

Subject or Proposition Read inspection Notes of the Sanitary Commissioner, Madras on his inspection of Nellore Municipality in the month of November 1895 and the replies thereto.

HEAD QUARTER DEPUTY COLLECTOR NELLORE 27 3 96

Resolution Approved.

(Sd) C. J. Saldanha
Chairman

(True Extract)

C. J. Saldanha
Chairman

25/3/96

No. 632 dated 26 March/96.

DESPD 26 MAR 96

Submitted to the Chief Secretary to Government Local and Municipal Department, Madras through the Head Quarter Deputy Collector. Nellore

C. J. Saldanha
Chairman

26/3 To

The Chief Secretary to Govt
L & M Depts Madras
thro' the Hd Qr. Dy Collr. Nellore.

Cur 1637/to the 2-9-6

Desk 30 March 96

Submitted

[illegible]

Nellore Dy Collr

30-3-96

C.R.No 851/E.Y. of 1896.

N.P.

1 April 1896

Forwarded to the Chief Secretary to Government Local and Municipal Department Madras.

COLLECTOR NELLORE 31 3 96

UNDER SECRETARY'S PUBLIC ETC. DEPTS. 3 APL 96

Ag. Collector

31-3-96

15½

LOCAL AND MUNICIPAL DEPARTMENT.

Local & Municipal Dept.
CURRENT No. 1085 M

From

The Chairman, M.C., Nellore.

No. 132

Dated 26-3-96

Received 4-4-96

Enclosures /

SUBJECT.

Submitting Inspection Notes of the Sanitary Commissioner, Madras on his inspection of Nellore Municipality.

902

Roof

No. 858 M., 18TH MAY 1896.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

Inspection Notes of the Sanitary Commissioner, Madras.

NELLORE DISTRICT.

NELLORE MUNICIPALITY.

Inspected 11th to 14th November 1895.

	Males.	Females.	Total.
Population as per census of 1891	14,310	15,026	29,336

Inspection Notes.	Chairman's Remarks.
Roads and Surface Drainage.—(*a*) These are in some places very uneven, and in others raised beyond requirements. As an instance of the latter condition, I may point to the fact that the surface drainage in the Pensioners' lines, notwithstanding the presence of a sufficient gradient, is so obstructed that the whole area during rainfall becomes flooded with water rendering the houses here visibly damp and notoriously unhealthy. It would be easy to remedy this condition by placing culverts or iron pipes at suitable intervals below the road, so as to permit the exit of flood water.	The permanent mile coolies are employed in repairing the uneven roads. Portions raised beyond the requirements will be lowered wherever feasible, and measures recommended to permit exit of storm-water will be adopted.
(*b*) In the bazaar, the surface water drain is covered at one spot with boards, at another with stones, and at another with boxes. The culverts connecting the drains across streets at right angles are blocked with silt. Granting that these drains do not transmit sewage but surface water only, the fact remains that much filth accumulates within the drains which it is impossible for the sweepers to remove. In this connection I advise the attention of the council to G.O., No. 1341 M., dated 27th September 1894.	These boards, boxes, &c., are removed by the bazaarmen to whom they belong during sweeping and cleaning by the drainers. The Government Order quoted is being given effect to as far as possible.
2. *Dwellings.*—(*a*) The house walls are largely used for the drying of cowdung cakes, contrary to the bye-law adopted by the council.	The delinquents in this respect are being prosecuted and it is hoped that the practice will soon be entirely stopped.

Inspection Notes.

(*b*) *Thomas Pettah.*—This pettah was laid out with streets of liberal size originally. Slowly but surely, however, encroachments have been allowed to proceed by temporary buildings and verandahs being made permanent, so that the available road area has been much curtailed. Immediately behind the main street, buildings are being erected without any attempt at order. This is a mistake, for which probably future generations will suffer, in that, to secure regular lines of buildings, compensation must be forthcoming.

3. *Sewerage.*—(*a*) V-shaped drains of laterite are employed. Both on account of their defective shape, the numerous holes in the laterite and inefficient flushing practised, they are a source of nuisance. In Nellore, East, the stench from these drains is very marked. The house connections also are very bad. Under section 213, there is no reason why the latter point should not be attended to. Special arrangements for flushing the drains near their heads from some well should be arranged for. If necessary to effect a junction, small open drains or pipes should be laid between the wells and the drains, and for the drains themselves their section should be altered by filling with cement concrete having cement plaster surface, or, if this prove less

* These cost per lineal foot—

3″	As. 2	12″	As. 10
4″	,, 3	15″	Re. 1
6″	,, 4	18″	,, 1-6
9″	,, 6		

expensive, Burn's half -tile* drains might be laid upon lime concrete within the existing drains. Were these points attended to, the existing sewerage arrangements would be of considerable sanitary value to Nellore, West. The sewage from this part of the town has no definite destination. It is allowed to soak near the channel or, in wet weather, to find its way into it. Yet it would, as I pointed out in 1890, be a simple enough matter to start a small plot where cultivation could be profitably pursued with sewage close to the present point of exit, or, if the expense were not prohibitive, by under-syphoning the irrigation channels and applying the sewage to a plot on the opposite side.

(*b*) The principles laid down in the above are also applicable to the drainage arrangements in Nellore, East.

Chairman's Remarks.

No doubt there has been some slackness on the part of the municipality in the matter of encroachments in years gone by, mostly due to inefficient out-door establishment, but now encroachments are vigorously prevented, and to effect this still more satisfactorily, the Government will be addressed on the subject of having this town surveyed at an early date.

The drains in the town, excepting one or two minor ones, being very old-fashioned with defective levels and completely denuded of plaster, are indeed more a source of nuisance. The drainers clean and flush them as far as possible every day. To remedy the defective house connections pointed out, steps will be taken under section 213. The suggestion to make special arrangements for flushing the drains near their heads from some well will be carried out if found feasible. Although the work of altering the section of the existing drains in the manner pointed out cannot be undertaken and carried out at once owing to paucity of funds, the council hope to be able to do something in this direction year after year. As the few little drains in Nellore, West, and the main bazaar drains receive very little sewage, the council do not think it worth while starting a plot for cultivation as suggested by the Sanitary Commissioner, especially when no funds can be spared for any such experiment.

The question of starting a sewage farm in Nellore, East, will, however, receive attention of the council when complete

Inspection Notes.

(*c*) In carrying out these improvements, it would simplify the work necessary if at least one of the present irrigation channels on the East side were abolished. Both are within seven or eight yards of each other, and there seems no *prima facie* reason why the flow should not be united in one channel.

4. *Water-supply.*—(*a*) The chief source of supply is the channel from the Nellore tank. This receives a considerable amount of surface washing from inhabited areas as well as sewage. Although an order exists that it shall be reserved for drinking-water purposes, the precaution of placing watchmen along the channel to see that the order is enforced is not arranged for. Pending the introduction of a correct water-supply, which I trust the council now see the urgent necessity for, I consider some means should be taken to temporarily secure that water in this channel shall not be delivered in a dangerously contaminated condition. During 1891, 523 deaths occurred from cholera in this town, showing that when cholera is introduced into Nellore, it is an enemy not to be lightly got rid of. The water might be conducted up to the special well excavated by Dr. Ross near the channel in stoneware or rivetted iron pipes—a suggestion made by the certificated sanitary inspector—or, the well might be employed for receipt of filtered water from a surrounding gravel-filter. Either mode would secure a better quality of water than that at present in use. But the success of such a temporary method would depend very largely upon the care with which the reservoir whence the supply is brought by this channel is protected. On my inspection, certain extraordinary evidence to the opposite was presented to me; the revetment of the tank on the town side was so covered with successive deposits of *human fœcal matter that scarcely a cubit of the length of any single row of stones down to the water's edge could be distinguished continuously.* This was the condition for 150 yards of the bund. Practically, the same condition of affairs was pointed out in my inspection notes, embodied in G.O., No. 1802 M., dated 25th November 1890. The excuse forthcoming on behalf of the municipality and thorough flushing of the drains in this part of the town on the lines suggested by the Sanitary Commissioner in paragraph 3 (*a*) becomes possible.

The Revenue authorities will be addressed on the subject.

The channel from the Nellore tank supplies drinking-water only to a portion of people of Nellore, West, and one or two other suburbs, and not to the whole town, as one might think from the Sanitary Commissioner's notes. There are several good-water wells besides, and a good many people of Nellore, East, resort to the Survepalli channel for their drinking-water. Of course, by this it is not meant to show that drinking-water is ample in this town and that therefore a correct water-supply need not be troubled about, but on the contrary to show that the introduction of a correct water-supply is the more necessary, since at present the great majority of the people are compelled to look to open channels for their elixir of life, but the water of which channels is necessarily liable to every imaginable kind of pollution. The council hopes to be able to take on hand, before long, this very necessary water-supply scheme. On the channel pointed out one or two more boards are being arranged to be put up to warn the public against defiling the water, and a permanent watchman has also been sanctioned by Government from April next. There is no special well excavated by Dr. Ross near any part of the course of this channel; perhaps the excavation by the municipality near the old slaughter-house is meant. The council will consider the advisability of improving this well and utilizing it for receiving filtered water from a surrounding gravel-filter as suggested, should funds permit. Government will be requested to include the tank and its bund within the municipal limits.

Inspection Notes.

is that the tank is outside their limits; but if the source be recognized as a drinking-water supply, there is available section 277 of the Indian Penal Code and again section 145 of the Act they administer. The municipality should bestir themselves about this disgusting and dangerous state of their chief water supply. It is impossible that some arrangement could not be arrived at by which police constables could be placed at their disposal, irrespective of its being extremely unlikely that the Public Works Department would object to the stationing of a watchman paid by the municipality to prevent trespass on their land. The tank should be included within municipal limits. The objection raised to this is that a portion of the local fund road would thus fall under the care of the municipality and add to their expense; but it is a common enough matter for a local fund road to run through municipal limits and yet be supported at local fund expense, and I see no reason why this should deter the municipality from asking Government that its limits be extended so as to include the tank and its bund.

(*b*) Near the market is a collection of huts inhabited by coolies close to the edge of the channel. This certainly cannot aid the chances of water purity. The council should give these persons a site elsewhere, and remove them without delay.

(*c*) In my notes of 1890, I pointed to the most objectionable practice of throwing rubbish close to the channel near Dyke's bridge; rubbish is no longer deposited there, but, by an extraordinary mode of reasoning, the municipality has placed instead drain sludge! If it is requisite that this portion be filled up, nothing but clean earth should be employed.

(*d*) Close to Dyke's bridge is a patch of ground evidently forming a favourite spot for easement. Steps should be taken in consultation with the police to put a stop to this.

Chairman's Remarks.

This will be attended to.

Immediately on receipt of the "Notes" orders were issued to stop this practice, and the hollow here will be filled up gradually only by clean earth.

This is only one of the many spots so used. The Superintendent of Police was addressed on this subject more than once but with little effect. The plea put forth is that the department is too undermanned to assist the municipality. Materially in this respect the Superintendent of Police in his letter, No. 67, dated 10th February 1896, stated that the police are doing their best, and, as if to effectually stop being any more bothered by the council on this subject, wound off by pointing out, in a quasi-sanitary-officer-like fashion that the latrines are "ridiculously" too few for this town and that the best way of preventing committal of nuisances was to build more latrines and urinals. The only hope of the police doing any real service in this direction seems to be in moving the Government to enquire through the Inspector-General of Police into the plea, so often put forth, of insufficiency of hands, and to remedy the evil if proved not to be imaginary.

Inspection Notes.

(*e*) *Kaja Peer Well in the Bazaar.*—This is a step-well, and on this account alone is highly objectionable. It receives much filth from the surroundings, and is used for ablution after defœcation which proceeds unchecked in the immediate neighbourhood. On one side is a "dumb-well," which is said now not to receive fæcal matter; but, as there is no private latrine in the house to which it is attached, I receive this statement with caution. The proper course for the municipality to pursue with this well is to cause it to be shut up permanently—section 156 (2).

(*f*) *Balaka's Well.*—This is much used. A platform should be supplied, and the parapet should be so altered as to prevent persons standing upon it. It should then be supplied with pulleys.

(*g*) *Moulla Tank.*—A watchman is employed *only four months in the year* to watch this tank. This arrangement is of little use. The man should be employed throughout the year.

(*h*) *Raja Street Moulapettah Well.*—This is a favourite well. The stone beam across it should be removed, so as to prevent persons standing over it when drawing water. It should be cement-lined down to the water level.

5. *Conservancy*—(*a*) *Rubbish Conservancy.*—The condition of backyards shows that a large part of the total rubbish is stored within the town by private persons. In Moulapettah, notwithstanding the fact having been brought to notice by this office from time to time—although improvement has been effected—quarries were found near habitations in which up to date rubbish is stored.

(*b*) *Night-soil Conservancy.*—The latrine accommodation provided is defective both as to number and character. Of twenty-eight latrines, twenty-four are

Chairman's Remarks.

Steps will be taken to have both these wells closed.

Will be attended to.

As stated under paragraph 4 (*a*), Government has sanctioned a permanent watcher whose duty will be to watch this reservoir as well as the channel from the Nellore tank down to the market.

Will be attended to.

Large numbers of notices have been issued to parties to clean their backyards and many defaulters have been, and are being, prosecuted vigorously, and the practice of heaping rubbish in backyards has been already stopped to an appreciable extent. Several of the quarries noticed in 1890 were entirely closed, action having been taken by the municipality under sections 184 and 185; the few remaining and the new ones will be dealt with similarly.

The defective latrines are being gradually replaced by iron ones of approved patterns. Provision has been made to erect four iron latrines next year.

Inspection Notes.

mere enclosures surrounded either by brick or tatty walls. There are two corrugated-iron latrines. "Open space" latrines do not fulfil sanitary requirements, and should be replaced either by the forms advocated by Mr. Donaldson, Calcutta, or the Sanitary Board.

(*c*) *Night-soil and Rubbish removal.*—The methods pursued are very crude and unsuitable. There are seven square wooden night-soil carts, in which the fæcal matter is placed on layers of straw, and fifteen rubbish carts. The whole are dragged by men. The municipality should purchase twelve iron night-soil carts of 12 cubic feet capacity or eight of 100 gallons capacity. These should be drawn by bullocks, and not less than two trips per day should be made. This provision is the least that can accomplish the work required, and makes no allowance for the conveyance of urine or substances mixed with fæcal matter, and pre-supposes the whole of the carts to be filled to the brim. In addition the private scavengering staff should be provided with conservancy buckets on wheels in the proportion of one bucket to every three men, and for removal of excreta from the houses iron covered hand-buckets should be used, instead of the present unsuitable baskets.

(*d*) All this means expenditure, of course; but if the municipality is to make any attempt at serving sanitary dictates, it certainly ought to commence to deal with the A, B, C of conservancy. If it cannot meet these demands from current funds, it certainly ought to ask permission to raise a loan. It is out of the question that a municipality of thirty years' standing should not be provided with *all things essential for correct conservancy.*

(*e*) *Rubbish and Night-soil Depôts.*—One of these is situated on the Kistnapatam road; the other near the Nunkoor road. The former is at present in an unfit condition for its purpose. It could, however, be rendered of utility if properly drained and levelled. The sanitary inspector, being a certificated man, is aware of the method that should be pursued in laying this out, and, as he assures me he has pressed the matter on the attention of the municipality, I trust that early action will be taken. There is every reason to believe that poudrette would obtain a ready sale in the neighbourhood of Nellore.

Chairman's Remarks.

Of the seven wooden night-soil carts, six were replaced this year by air-tight iron ones of 12 cubic feet capacity at a cost of Rs. 600 and odd. One or more will be purchased next year so as to make up the required number. It is out of the question to employ bullocks to draw these carts as the monthly hire for a pair of bullocks in this town is as much as Rs. 25. Instead of bullocks more scavengers might with advantage be employed as they will be available for better conservancy of the latrines, &c., besides making two trips to the night-soil depôt. Provision will be made in the next budget for some conservancy buckets on wheels and for iron covered hand-buckets for the private scavenging staff as suggested.

The minor improvements suggested by the Sanitary Commissioner are being carried out year after year, and as regards the water-supply and drainage scheme the council intends moving the Government, as soon as the amended Act comes into force, as desired in their Order, No. 38 M., Mis., dated 12th January 1895.

The work of improving the rubbish depôt referred to on the lines suggested will be taken on hand soon. The council fears it cannot at present turn its attention to the matter of poudrette manufactory as it would involve an additional staff, the expenses of which it is not prepared to meet, specially as a ready sale of the new stuff in this town or its neighbourhood at anything like a remunerative price is extremely doubtful.

Inspection Notes.

(*f*) Only 842 houses of a total of 1,275 are attended to under the private scavenging system. The attention of the municipality is invited to G.O., No. 749 M., dated 13th June 1894.

6. *Slaughter-house.*—(*a*) This has been lately built. The well-water is obviously not used; the butchers resort instead to the foul water of the channel. I advise the municipality to apply for a copy of the revised plan lately issued by the Sanitary Board, which provides for a gutting room and for the distribution of water within the slaughter-house correctly protected. This would add very little to the total cost of the existing building and greatly enhance its sanitary value.

(*b*) No effort is at present made to dispose with advantage of the refuse and washings from the slaughter-house. Suitable ground surrounds the slaughter-house, and the municipality would do well to convert it into a garden for production of vegetables, or other crops, cultivated with the aid of the sewage and refuse.

7. *Market.*—This is a structure upon which the municipality has spent money fitfully. The first ambition was to secure a surrounding wall and, in obtaining this, little money seems to have been left to build correctly the market. As it stands, it fulfils but poorly its functions. Last year, the municipality spent Rs. 700 upon erecting butchers' stalls. These have earthen floors, and are not provided with drains. The usual want of arrangements as to cleanliness with reference to disposal of meat is found. As to this, the sanitary inspector should advise the municipality. Under G.O., No. 79 L., dated 16th January 1891, the municipality should have consulted the Sanitary Board before spending the sum of Rs. 700, when doubtless they would have been advised to adopt a plan more in accordance with sanitary dictates.

8. *Graveyards.*—This subject has already been treated in my letter, No. 2111-S., dated 20th November 1895, embodied in G.O., No. 2112 M., dated 17th December 1895.

9. *Offensive Trades.*—A considerable number of "cattle yards," bakeries and skin stores are neither licensed nor specially inspected as to their sanitary condition. Arrangements should be made to give effect to section 188 on this subject.

Chairman's Remarks.

Attempts are made to increase the number of houses served by private scavenging system by strictly resorting to prosecution of owners of unclean privies and the number is appreciably increasing month after month.

The use of the channel-water has been entirely prohibited since; and the sanitary inspector has strict orders to see that the larger cistern inside the slaughter-house is kept filled with the well-water before slaughter commences every morning. Provision will be made in the budget for a gut-house, and the Sanitary Board will be applied to for a copy of the revised plan.

The council for the present intends leasing out the land around the slaughter-house for cultivation with the aid of the sewage and refuse referred to, and, if the result is found satisfactory, will conduct the business departmentally.

The plans and estimates for the stalls were duly approved by the Sanitary Board and the improvements suggested will be carried out as soon as possible.

The council has taken this matter earnestly on hand and hopes to be able to make satisfactory arrangements very soon.

Licenses for skin stores were withheld two or three years ago, as it was thought inadvisable to have them within the town. But it is intended again to insist on their being licensed. Owners of bakeries also will be asked to obtain

Inspection Notes.

Chairman's Remarks.

10. *Vaccination.*—(*a*) The vaccination sheds in which the calves are retained are incorrectly built and do not fulfil requirements. The municipality should apply to the Sanitary Board for suitable plans and should, in conjunction with the district board, build accordingly.

Of a total of thirty-six children up to ten years of age met on the streets haphazard 77 per cent. were found protected by vaccination and 11 per cent. by small-pox.

The following figures exhibit the progress of vaccination:—

licenses. The sanitary inspector has been directed to make special inspections of skin stores, &c., as to their sanitary condition.

The vaccination sheds referred to do not belong to the municipality but are the property of the district board. The council understands that the District Medical and Sanitary Officer has recently addressed the President of the District Board with a view to altering the sheds and building a third one for better accommodation of the calves.

Total births registered between the 1st January and 30th June 1895.	Number vaccinated.		Number vaccinated a second time because first operation proved unsuccessful.		Postponed under medical certificate at the end of six months.	Died.	Left the town.	Unaccounted for.	Ratio of successful vaccinations to total births per cent.
	Successfully.	Unsuccessfully.	Successful.	Unsuccessful.					
403	141	..	..	..	7	78	149	1	34·98

11. *Registration.*—This is conducted by two registrars on Rs. 10 each. Only twenty prosecutions were made by the municipality during the last year for failure to register. The estimated population at the end of December 1895 was 30,264; but according to municipal registration it amounted to only 29,904. Much more energy on the part of the municipality in this matter is essential.

The work of the two registrars is checked by the two sanitary inspectors regularly, but although care is taken to see that the existing staff does its best, it is believed there is room for improvement in this respect and the council will consider how to best effect the improvement. There has been an appreciable increase in the number of prosecutions during the last few months.

Years.	Ratio of births per mille of estimated population.	Ratio of deaths per mille of estimated population.	Percentage of deaths from				
			Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa.	All other causes.
1893	24·2	17·7	..	0·6	28·3	3·4	67·7
1894	29·8	20·2	0·2	1·5	33·4	1·1	63·8
1895	30·2	20·5	..	..	24·5	2·6	72·9

12. *Sanitary Administration.*—(*a*) More economy might, I think, with advantage be exercised in the matter of office establishment, in view of the pressing requirements of conservancy. The following is the list of employés:—

	Rs.	
One manager	40	
One head clerk	25	
One 2nd clerk	20	
Two clerks	15	each.
One attender	8	

Two peons on Rs. 7 and Rs. 6, respectively.

The reduction in the office establishment suggested is not feasible. The system of correspondence, keeping records, &c., introduced by Dr. C. D. Macleane, and also the introduction of various account forms, have immensely increased the office work and the number of hands cannot now be reduced without undoing the system, which is a good one, and without impairing efficiency.

Inspection Notes.

Chairman's Remarks.

It seems to me that one manager, one head clerk and one copying clerk, and two peons ought to suffice for requirements. This would set free funds urgently required elsewhere.

(*b*) In my review of the budget of the municipality, I have already expressed my opinion as to the desirability of a complete alteration of the arrangements of the sanitary staff. It having been decided to procure correct plant for removal of rubbish and night-soil, there should be appointed thirty sweepers, sixty toties and eight peons. Irrespective of this question, however, I would advise the municipality to place the certificated sanitary inspector in full charge of the sanitary staff in direct communication with the Chairman. At present, I understand that responsibility is divided between two sanitary inspectors, one of whom has undergone no sanitary training.

The question of re-organizing the conservancy establishment had engaged the serious attention of the council for a long time and after mature consideration and with the approval of Government the present change was effected and has been working satisfactorily.

It is true that one of the sanitary inspectors has not had the sanitary training, but he has been in charge of sanitation for some years and has discharged his duties efficiently.

The certificated sanitary inspector is in charge of that portion of the town where his attention and advice are mostly needed, and it will not be to the advantage of the municipality to place him in charge of the whole town. The council intends to submit the newly-appointed overseer to training next year. After undergoing training, he will doubtless be of much use to the municipality in sanitary matters also without any additional cost.

BELLARY, (Signed) W. G. KING, Surgn.-Lieut.-Col.,
13*th February* 1896. *Sanitary Commissioner for Madras.*

ENCLOSURE.

EXTRACT from Resolution Book of the Nellore Municipality, dated 18th March 1896, No. 523.

Read inspection notes of the Sanitary Commissioner, Madras, on his inspection of Nellore Municipality in the month of November 1895, and the replies thereto.

Resolution.—Approved.

No. 632-Mun.

Submitted to the Chief Secretary to Government, Local and Municipal Department, Madras, through the Head-quarter Deputy Collector, Nellore.

(Signed) C. T. SALDANHA,
26*th March* 1896. *Chairman.*

No. 1673-M.

Submitted.

(Signed) P. SITA RAO,
30*th March* 1896. *Deputy Collector.*

C. No. 851-Eng.

Forwarded to the Chief Secretary to Government, Local and Municipal Department, Madras.

(Signed) W. S. MEYER,
31*st March* 1896. *Ag. Collector.*

Order—No. 858 M., dated 18th May 1896.

Recorded with the following remarks:—

(1) The result of the correspondence with the Revenue authorities regarding the closure of the irrigation channel referred to in paragraph 3 (*c*) should be reported.

(2) The proposal to include the Nellore tank and its bund within municipal limits should form the subject of a separate communication.

(3) The attention of the Inspector-General of Police will be drawn in the Judicial Department to the remarks of the Chairman on paragraph 4 (*d*) of the notes. The council should, however, see that its servants actively co-operate with the police in prosecuting persons who commit a nuisance in places like the one near Dyke's bridge referred to by the Sanitary Commissioner.

(4) Steps should be taken at once to improve the registration of vital statistics, which appears at present to be very unsatisfactory.

(True Extract.)

Under Secretary, P.W.D.,
for *Chief Secretary.*

To the Chairman, Municipal Council, Nellore.
„ Collector of Nellore.
„ Sanitary Commissioner.
„ Sanitary Engineer.
„ Judicial Department.
Editors' Table.

Exd. C. M. Thrmbuswamy

Govt. of {1896} Madras.

LOCAL AND MUNICIPAL.

Issued

Recd. *Encl.*

G.O., No. 858 M., 18th May 1896.

MAY.

Inspection Notes.

Recording, with remarks, the Sanitary Commissioner's — on the Nellore Municipality.

No. 858 M., 18 May April 1896.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

Inspection Notes of the Sanitary Commissioner, Madras.

NELLORE DISTRICT.

NELLORE MUNICIPALITY.

Inspected 11th to 14th November 1895.

	Males.	Females.	Total.
Population as per census of 1891	14,310	15,026	29,336

Inspection Notes.	Chairman's Remarks.
Roads and Surface Drainage.—(*a*) These are in some places very uneven, and in others raised beyond requirements. As an instance of the latter condition, I may point to the fact that the surface drainage in the Pensioners' lines, notwithstanding the presence of a sufficient gradient, is so obstructed that the whole area during rainfall becomes flooded with water rendering the houses here visibly damp and notoriously unhealthy. It would be easy to remedy this condition by placing culverts or iron pipes at suitable intervals below the road, so as to permit the exit of flood water.	The permanent mile coolies are employed in repairing the uneven roads. Portions raised beyond the requirements will be lowered wherever feasible, and measures recommended to permit exit of storm-water will be adopted.
(*b*) In the bazaar, the surface water drain is covered at one spot with boards, at another with stones, and at another with boxes. The culverts connecting the drains across streets at right angles are blocked with silt. Granting that these drains do not transmit sewage but surface water only, the fact remains that much filth accumulates within the drains which it is impossible for the sweepers to remove. In this connection I advise the attention of the council to G.O., No. 1341 M., dated 27th September 1894.	These boards, boxes, &c., are removed by the bazaarmen to whom they belong during sweeping and cleaning by the drainers. The Government Order quoted is being given effect to as far as possible.
2. *Dwellings.*—(*a*) The house walls are largely used for the drying of cowdung cakes, contrary to the bye-law adopted by the council.	The delinquents in this respect are being prosecuted and it is hoped that the practice will soon be entirely stopped.

Inspection Notes.

(*b*) *Thomas Pettah.*—This pettah was laid out with streets of liberal size originally. Slowly but surely, however, encroachments have been allowed to proceed by temporary buildings and verandahs being made permanent, so that the available road area has been much curtailed. Immediately behind the main street, buildings are being erected without any attempt at order. This is a mistake, for which probably future generations will suffer, in that, to secure regular lines of buildings, compensation must be forthcoming.

3. *Sewerage.*—(*a*) V-shaped drains of laterite are employed. Both on account of their defective shape, the numerous holes in the laterite and inefficient flushing practised, they are a source of nuisance. In Nellore, East, the stench from these drains is very marked. The house connections also are very bad. Under section 213, there is no reason why the latter point should not be attended to. Special arrangements for flushing the drains near their heads from some well should be arranged for. If necessary to effect a junction, small open drains or pipes should be laid between the wells and the drains, and for the drains themselves their section should be altered by filling with cement concrete having cement plaster surface, or, if this prove less expensive, Burn's half-tile* drains might be laid upon lime concrete within the existing drains. Were these points attended to, the existing sewerage arrangements would be of considerable sanitary value to Nellore, West. The sewage from this part of the town has no definite destination. It is allowed to soak near the channel or, in wet weather, to find its way into it. Yet it would, as I pointed out in 1890, be a simple enough matter to start a small plot where cultivation could be profitably pursued with sewage close to the present point of exit, or, if the expense were not prohibitive, by under-syphoning the irrigation channels and applying the sewage to a plot on the opposite side.

* These cost per lineal foot —

3" .. As. 2	12" .. As. 10
4" .. „ 3	15" .. Re. 1
6" .. „ 4	18" .. „ 1-6
9" .. „ 6	

(*b*) The principles laid down in the above are also applicable to the drainage arrangements in Nellore, East.

Chairman's Remarks.

No doubt there has been some slackness on the part of the municipality in the matter of encroachments in years gone by, mostly due to inefficient out-door establishment, but now encroachments are vigorously prevented, and to effect this still more satisfactorily, the Government will be addressed on the subject of having this town surveyed at an early date.

The drains in the town, excepting one or two minor ones, being very old-fashioned with defective levels and completely denuded of plaster, are indeed more a source of nuisance. The drainers clean and flush them as far as possible every day. To remedy the defective house connections pointed out, steps will be taken under section 213. The suggestion to make special arrangements for flushing the drains near their heads from some well will be carried out if found feasible. Although the work of altering the section of the existing drains in the manner pointed out cannot be undertaken and carried out at once owing to paucity of funds, the council hope to be able to do something in this direction year after year. As the few little drains in Nellore, West, and the main bazaar drains receive very little sewage, the council do not think it worth while starting a plot for cultivation as suggested by the Sanitary Commissioner, especially when no funds can be spared for any such experiment.

The question of starting a sewage farm in Nellore, East, will, however, receive attention of the council when complete

Inspection Notes.

(*c* In carrying out these improvements, it would simplify the work necessary if at least one of the present irrigation channels on the East side were abolished. Both are within seven or eight yards of each other, and there seems no *prima facie* reason why the flow should not be united in one channel.

4. *Water-supply.*—(*a*) The chief source of supply is the channel from the Nellore tank. This receives a considerable amount of surface washing from inhabited areas as well as sewage. Although an order exists that it shall be reserved for drinking-water purposes, the precaution of placing watchmen along the channel to see that the order is enforced is not arranged for. Pending the introduction of a correct water-supply, which I trust the council now see the urgent necessity for, I consider some means should be taken to temporarily secure that water in this channel shall not be delivered in a dangerously contaminated condition. During 1891, 523 deaths occurred from cholera in this town, showing that when cholera is introduced into Nellore, it is an enemy not to be lightly got rid of. The water might be conducted up to the special well excavated by Dr. Ross near the channel in stoneware or rivetted iron pipes—a suggestion made by the certificated sanitary inspector—or, the well might be employed for receipt of filtered water from a surrounding gravel-filter. Either mode would secure a better quality of water than that at present in use. But the success of such temporary method would depend very largely upon the care with which the reservoir whence the supply is brought by this channel is protected. On my inspection, certain extraordinary evidence to the opposite was presented to me; the revetment of the tank on the town side was so covered with successive deposits of *human fœcal matter that scarcely a cubit of the length of any single row of stones down to the water's edge could be distinguished continuously.* This was the condition for 150 yards of the bund. Practically, the same condition of affairs was pointed out in my inspection notes, embodied in G.O., No. 1802 M., dated 25th November 1890. The excuse forthcoming on behalf of the municipality

Chairman's Remarks.

and thorough flushing of the drains in this part of the town on lines suggested by the Sanitary Commissioner in paragraph 3 (*a*) become possible.

The Revenue authorities will be addressed on the subject.

The channel from the Nellore tank supplies drinking-water only to a portion of people of Nellore, West, and one or two other suburbs, and not to the whole town, as one might think from the Sanitary Commissioner's notes. There are several good-water wells besides, and a good many people of Nellore, East, resort to the Survepally channel for their drinking-water. Of course, by this it is not meant to show that drinking-water is ample in this town and that therefore a correct water-supply need not be troubled about, but on the contrary to show that the introduction of a correct water-supply is the more necessary, since at present the great majority of the people are compelled to look to open channels for their elixir of life, but the water of which channels is necessarily liable to every imaginable kind of pollution. The council hopes to be able to take on hand, before long, this very necessary water-supply scheme. On the channel pointed out one or two more boards are being arranged to be put up to warn the public against defiling the water, and a permanent watchman has also been sanctioned by Government from April next. There is no special well excavated by Dr. Ross near any part of the course of this channel; perhaps the excavation by the municipality near the old slaughter-house is meant. The council will consider the advisability of improving this well and utilizing it for receiving filtered water from a surrounding gravel-filter as suggested, should funds permit. Government will be requested to include the tank and its bund within the municipal limits.

Inspection Notes.

is that the tank is outside their limits; but if the source be recognized as a drinking-water supply, there is available section 277 of the Indian Penal Code and again section 145 of the Act they administer. The municipality should bestir themselves about this disgusting and dangerous state of their chief water supply. It is impossible that some arrangement could not be arrived at by which police constables could be placed at their disposal, irrespective of it being extremely unlikely that the Public Works Department would object to the stationing of a watchman paid by the municipality to prevent trespass on their land. The tank should be included within municipal limits. The objection raised to this is that a portion of the local fund road would thus fall under the care of the municipality and add to their expense; but it is a common enough matter for a local fund road to run through municipal limits and yet be supported at local fund expense, and I see no reason why this should deter the municipality from asking Government that its limits be extended so as to include the tank and its bund.

(*b*) Near the market is a collection of huts inhabited by coolies close to the edge of the channel. This certainly cannot aid the chances of water purity. The council should give these persons a site elsewhere, and remove them without delay.

(*c*) In my notes of 1890, I pointed to the most objectionable practice of throwing rubbish close to the channel near Dyke's bridge; rubbish is no longer deposited there, but, by an extraordinary mode of reasoning, the municipality has placed instead drain sludge! If it is requisite that this portion be filled up, nothing but clean earth should be employed.

(*d*) Close to Dyke's bridge is a patch of ground evidently forming a favourite spot for easement. Steps should be taken in consultation with the police to put a stop to this.

Chairman's Remarks.

This will be attended to.

Immediately on receipt of the "Notes" orders were issued to stop this practice, and the hollow here will be filled up gradually only by clean earth.

This is only one of the many spots so used. The Superintendent of Police was addressed on this subject more than once but with little effect. The plea put forth is that the department is too undermanned to assist the municipality. Materially in this respect the Superintendent of Police in his letter, No. 67, dated 10th February 1896, stated that the police are doing their best, and, as if to effectually stop being any more bothered by the council on this subject, wound off by pointing out, in a quasi-sanitary-officer-like fashion that the latrines are "ridiculously" too few for this town and that the best way of preventing committal of nuisances was to build more latrines and urinals. The only hope of the police doing any real service in this direction seems to be in moving the Government to enquire through the Inspector-General of Police into the plea, so often put forth, of insufficiency of hands, and to remedy the evil if proved not to be imaginary.

Inspection Notes.

(*e*) *Kaja Peer Well in the Bazaar.*—This is a step-well, and on this account alone is highly objectionable. It receives much filth from the surroundings, and is used for ablution after defœcation which proceeds unchecked in the immediate neighbourhood. On one side is a "dumb-well," which is said now not to receive fœcal matter; but, as there is no private latrine in the house to which it is attached, I receive this statement with caution. The proper course for the municipality to pursue with this well is to cause it to be shut up permanently—section 156 (2).

(*f*) *Balaka's Well.*—This is much used. A platform should be supplied, and the parapet should be so altered as to prevent persons standing upon it. It should then be supplied with pulleys.

(*g*) *Moulla Tank.*—A watchman is employed *only four months in the year* to watch this tank. This arrangement is of little use. The man should be employed throughout the year.

(*h*) *Raja Street Moulapettah Well.*—This is a favourite well. The stone beam across it should be removed, so as to prevent persons standing over it when drawing water. It should be cement-lined down to the water level.

5. *Conservancy*—(*a*) *Rubbish Conservancy.*—The condition of backyards shows that a large part of the total rubbish is stored within the town by private persons. In Moulapettah, notwithstanding the fact having been brought to notice by this office from time to time—although improvement has been effected—quarries were found near habitations in which up to date rubbish is stored.

(*b*) *Night-soil Conservancy.*—The latrine accommodation provided is defective both as to number and character. Of twenty-eight latrines, twenty-four are

Chairman's Remarks.

Steps will be taken to have both these wells closed.

Will be attended to.

As stated under paragraph 4 (*a*), Government has sanctioned a permanent watcher whose duty will be to watch this reservoir as well as the channel from the Nellore tank down to the market.

Will be attended to.

Large numbers of notices have been issued to parties to clean their backyards and many defaulters have been, and are being, prosecuted vigorously, and the practice of heaping rubbish in backyards has been already stopped to an appreciable extent. Several of the quarries noticed in 1890 were entirely closed, action having been taken by the municipality under sections 184 and 185; the few remaining and the new ones will be dealt with similarly.

The defective latrines are being gradually replaced by iron ones of approved patterns. Provision has been made to erect four iron latrines next year.

Inspection Notes.

mere enclosures surrounded either by brick or tatty walls. There are two corrugated-iron latrines. "Open space" latrines do not fulfil sanitary requirements, and should be replaced either by the forms advocated by Mr. Donaldson, Calcutta, or the Sanitary Board.

(*c*) *Night-soil and Rubbish removal.*—The methods pursued are very crude and unsuitable. There are seven square wooden night-soil carts, in which the fæcal matter is placed on layers of straw, and fifteen rubbish carts. The whole are dragged by men. The municipality should purchase twelve iron night-soil carts of 12 cubic feet capacity or eight of 100 gallons capacity. These should be drawn by bullocks, and not less than two trips per day should be made. This provision is the least that can accomplish the work required, and makes no allowance for the conveyance of urine or substances mixed with fæcal matter, and pre-supposes the whole of the carts to be filled to the brim. In addition the private scavengering staff should be provided with conservancy buckets on wheels in the proportion of one bucket to every three men, and for removal of excreta from the houses iron covered hand-buckets should be used, instead of the present unsuitable baskets.

(*d*) All this means expenditure, of course; but if the municipality is to make any attempt at serving sanitary dictates, it certainly ought to commence to deal with the A, B, C of conservancy. If it cannot meet these demands from current funds, it certainly ought to ask permission to raise a loan. It is out of the question that a municipality of thirty years' standing should not be provided with *all things essential for correct conservancy.*

(*e*) *Rubbish and Night-soil Depôts.*—One of these is situated on the Kistnapatam road; the other near the Nunkoor road. The former is at present in an unfit condition for its purpose. It could, however, be rendered of utility if properly drained and levelled. The sanitary inspector, being a certificated man, is aware of the method that should be pursued in laying this out, and, as he assures me he has pressed the matter on the attention of the municipality, I trust that early action will be taken. There is every reason to believe that poudrette would obtain a ready sale in the neighbourhood of Nellore.

Chairman's Remarks.

Of the seven wooden night-soil carts, six were replaced this year by air-tight iron ones of 12 cubic feet capacity at a cost of Rs. 600 and odd. One or more will be purchased next year so as to make up the required number. It is out of the question to employ bullocks to draw these carts as the monthly hire for a pair of bullocks in this town is as much as Rs. 25. Instead of bullocks more scavengers might with advantage be employed as they will be available for better conservancy of the latrines, &c. besides making two trips to the night-soil depôt. Provision will be made in the next budget for some conservancy buckets on wheels and for iron covered hand-buckets for the private scavenging staff as suggested.

The minor improvements suggested by the Sanitary Commissioner are being carried out year after year, and as regards the water-supply and drainage scheme the council intends moving the Government, as soon as the amended Act comes into force, as desired in their Order, No. 38 M., Mis., dated 12th January 1895.

The work of improving the rubbish depôt referred to on the lines suggested will be taken on hand soon. The council fears it cannot at present turn its attention to the matter of poudrette manufactory as it would involve an additional staff, the expenses of which it is not prepared to meet, specially as a ready sale of the new stuff in this town or its neighbourhood at anything like a remunerative price is extremely doubtful.

Inspection Notes.

(*f*) Only 842 houses of a total of 1,275 are attended to under the private scavenging system. The attention of the municipality is invited to G.O., No. 749 M., dated 13th June 1894.

6. *Slaughter-house.*—(*a*) This has been lately built. The well-water is obviously not used; the butchers resort instead to the foul water of the channel. I advise the municipality to apply for a copy of the revised plan lately issued by the Sanitary Board, which provides for a gutting room and for the distribution of water within the slaughter-house correctly protected. This would add very little to the total cost of the existing building and greatly enhance its sanitary value.

(*b*) No effort is at present made to dispose with advantage of the refuse and washings from the slaughter-house. Suitable ground surrounds the slaughter-house, and the municipality would do well to convert it into a garden for production of vegetables, or other crops, cultivated with the aid of the sewage and refuse.

7. *Market.*—This is a structure upon which the municipality has spent money fitfully. The first ambition was to secure a surrounding wall and, in obtaining this, little money seems to have been left to build correctly the market. As it stands, it fulfils but poorly its functions. Last year, the municipality spent Rs. 700 upon erecting butchers' stalls. These have earthen floors, and are not provided with drains. The usual want of arrangements as to cleanliness with reference to disposal of meat is found. As to this, the sanitary inspector should advise the municipality. Under G.O., No. 79 L., dated 16th January 1891, the municipality should have consulted the Sanitary Board before spending the sum of Rs. 700, when doubtless they would have been advised to adopt a plan more in accordance with sanitary dictates.

8. *Graveyards.*—This subject has already been treated in my letter, No. 2111-S., dated 20th November 1895, embodied in G.O., No. 2112 M., dated 17th December 1895.

9. *Offensive Trades.*—A considerable number of "cattle yards," bakeries and skin stores are neither licensed nor specially inspected as to their sanitary condition. Arrangements should be made to give effect to section 188 on this subject.

Chairman's Remarks.

Attempts are made to increase the number of houses served by private scavenging system by strictly resorting to prosecution of owners of unclean privies and the number is appreciably increasing month after month.

The use of the channel-water has been entirely prohibited since; and the sanitary inspector has strict orders to see that the larger cistern inside the slaughter-house is kept filled with the well-water before slaughter commences every morning. Provision will be made in the budget for a gut-house, and the Sanitary Board will be applied to for a copy of the revised plan.

The council for the present intends leasing out the land around the slaughter-house for cultivation with the aid of the sewage and refuse referred to, and, if the result is found satisfactory, will conduct the business departmentally.

The plans and estimates for the stalls were duly approved by the Sanitary Board and the improvements suggested will be carried out as soon as possible.

The council has taken this matter earnestly on hand and hopes to be able to make satisfactory arrangements very soon.

Licenses for skin stores were withheld two or three years ago, as it was thought unadvisable to have them within the town. But it is intended again to insist on their being licensed. Owners of bakeries also will be asked to obtain

Inspection Notes.

Chairman's Remarks.

10. *Vaccination.*—(*a*) The vaccination sheds in which the calves are retained are incorrectly built and do not fulfil requirements. The municipality should apply to the Sanitary Board for suitable plans and should, in conjunction with the district board, build accordingly.

Of a total of thirty-six children up to ten years of age met on the streets haphazard 77 per cent. were found protected by vaccination and 11 per cent. by small-pox.

The following figures exhibit the progress of vaccination :—

Total births registered between the 1st January and 30th June 1895.	Number vaccinated		Number vaccinated a second time because first operation proved unsuccessful.		Postponed under medical certificate at the end of six months.	Died.	Left the town.	Unaccounted for.	Ratio of successful vaccinations to total births per cent.
	Successfully.	Unsuccessfully.	Successful.	Unsuccessful.					
403	141	..	..	..	7	78	149	1	34·98

11. *Registration.*—This is conducted by two registrars on Rs. 10 each. Only twenty prosecutions were made by the municipality during the last year for failure to register. The estimated population at the end of December 1895 was 30,264; but according to municipal registration it amounted to only 29,904. Much more energy on the part of the municipality in this matter is essential.

The work of the two registrars is checked by the two sanitary inspectors regularly, but although care is taken to see that the existing staff does its best, it is believed there is room for improvement in this respect and the council will consider how to best effect the improvement. There has been an appreciable increase in the number of prosecutions during the last few months.

Years.	Ratio of births per mille of estimated population.	Ratio of deaths per mille of estimated population.	Percentage of deaths from				
			Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa.	All other causes.
1893	24·2	17·7	..	0·6	28·3	3·4	67·7
1894	29·8	20·2	0·2	1·5	33·4	1·1	63·8
1895	30·2	20·5	..	..	24·5	2·6	72·9

12. *Sanitary Administration.*—(*a*) More economy might, I think, with advantage be exercised in the matter of office establishment, in view of the pressing requirements of conservancy. The following is the list of employés :—

		Rs.	
One manager		40	
One head clerk		25	
One 2nd clerk		20	
Two clerks		15	each.
One attender		8	

Two peons on Rs. 7 and Rs. 6, respectively.

The reduction in the office establishment suggested is not feasible. The system of correspondence, keeping records, &c., introduced by Dr. C. D. Macleane, and also the introduction of various account forms, have immensely increased the office work and the number of hands cannot now be reduced without undoing the system, which is a good one, and without impairing efficiency.

Inspection Notes.

Chairman's Remarks.

It seems to me that one manager, one head clerk and one copying clerk, and two peons ought to suffice for requirements. This would set free funds urgently required elsewhere.

(*b*) In my review of the budget of the municipality, I have already expressed my opinion as to the desirability of a complete alteration of the arrangements of the sanitary staff. It having been decided to procure correct plant for removal of rubbish and night-soil, there should be appointed thirty sweepers, sixty toties and eight peons. Irrespective of this question, however, I would advise the municipality to place the certificated sanitary inspector in full charge of the sanitary staff in direct communication with the Chairman. At present, I understand that responsibility is divided between two sanitary inspectors, one of whom has undergone no sanitary training.

The question of re-organizing the conservancy establishment had engaged the serious attention of the council for a long time and after mature consideration and with the approval of Government the present change was effected and has been working satisfactorily.

It is true that one of the sanitary inspectors has not had the sanitary training, but he has been in charge of sanitation for some years and has discharged his duties efficiently.

The certificated sanitary inspector is in charge of that portion of the town where his attention and advice are mostly needed, and it will not be to the advantage of the municipality to place him in charge of the whole town. The council intends to submit the newly-appointed overseer to training next year. After undergoing training, he will doubtless be of much use to the municipality in sanitary matters also without any additional cost.

BELLARY, (Signed) W. G. KING, Surgn.-Lieut.-Col.,
13*th February* 1896. *Sanitary Commissioner for Madras.*

ENCLOSURE.

EXTRACT from Resolution Book of the Nellore Municipality, dated 18th March 1896, No. 523.

Read inspection notes of the Sanitary Commissioner, Madras, on his inspection of Nellore Municipality in the month of November 1895, and the replies thereto.

Resolution.—Approved.

No. 632-Mun.

Submitted to the Chief Secretary to Government, Local and Municipal Department, Madras, through the Head-quarter Deputy Collector, Nellore.

26*th March* 1896 (Signed) C. T. SALDANHA,
Chairman.

No. 1673-M.

Submitted.

30*th March* 1896. (Signed) P. SITA RAO,
Deputy Collector.

C. No. 851-Eng.

Forwarded to the Chief Secretary to Government, Local and Municipal Department, Madras.

31*st March* 1896. (Signed) W. S. MEYER,
Ag. Collector.

[5]
700—6-4-96.

LOCAL AND MUNICIPAL DEPARTMENT.

Papers to be read in Proceedings:—

Again G.O., dated 189 , No.

Current No 1085m of 1896, dated 26th March from the Chairman, Mr. C. Nellor

Current No. of 189 , dated from the

Order. No. 858m., 18-5-96.

Recorded with the following remarks:—

(1) The result of the correspondence with the Revenue authorities regarding the closure of the irrigation channel referred to in paragraph 3(c) should be reported.

(2) The proposal to include the Nellore tank and its bund within municipal limits should form the subject of a separate communication.

(3) The attention of the Inspector General of Police will be drawn in the Judicial Department to the remarks of the Chairman on paragraph 4 (d) of the notes. The Council should however see that its servants actively cooperate with the Police in prosecuting persons who commit a nuisance in places like the one near Dyke's bridge referred to by

Nellore Inspection Notes

by the Sanitary Commissioner

(4) Steps should be taken at once to improve the registration of Vital Statistics, which appears at present to be very unsatisfactory

S.D. 12/5/96. WHS 14.5.96.

P.S.

To

The Chairman, M.C., Nellore
.. Collector of Nellore
.. Sanitary Commissioner
.. Sanitary Engineer
.. Judicial Department
Editors' Table.

Dispd. 8/6/96

No. 858 M., 18TH MAY 1896.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

Inspection Notes of the Sanitary Commissioner, Madras.

NELLORE DISTRICT.

NELLORE MUNICIPALITY.

Inspected 11th to 14th November 1895.

	Males.	Females.	Total.
Population as per census of 1891	14,310	15,026	29,336

Inspection Notes.	Chairman's Remarks.
Roads and Surface Drainage.—(*a*) These are in some places very uneven, and in others raised beyond requirements. As an instance of the latter condition, I may point to the fact that the surface drainage in the Pensioners' lines, notwithstanding the presence of a sufficient gradient, is so obstructed that the whole area during rainfall becomes flooded with water rendering the houses here visibly damp and notoriously unhealthy. It would be easy to remedy this condition by placing culverts or iron pipes at suitable intervals below the road, so as to permit the exit of flood water.	The permanent mile coolies are employed in repairing the uneven roads. Portions raised beyond the requirements will be lowered wherever feasible, and measures recommended to permit exit of storm-water will be adopted.
(*b*) In the bazaar, the surface water drain is covered at one spot with boards, at another with stones, and at another with boxes. The culverts connecting the drains across streets at right angles are blocked with silt. Granting that these drains do not transmit sewage but surface water only, the fact remains that much filth accumulates within the drains which it is impossible for the sweepers to remove. In this connection I advise the attention of the council to G.O., No. 1341 M., dated 27th September 1894.	These boards, boxes, &c., are removed by the bazaarmen to whom they belong during sweeping and cleaning by the drainers. The Government Order quoted is being given effect to as far as possible.
2. *Dwellings.*—(*a*) The house walls are largely used for the drying of cowdung cakes, contrary to the bye-law adopted by the council.	The delinquents in this respect are being prosecuted and it is hoped that the practice will soon be entirely stopped.

Inspection Notes.

(*b*) *Thomas Pettah.*—This pettah was laid out with streets of liberal size originally. Slowly but surely, however, encroachments have been allowed to proceed by temporary buildings and verandahs being made permanent, so that the available road area has been much curtailed. Immediately behind the main street, buildings are being erected without any attempt at order. This is a mistake, for which probably future generations will suffer, in that, to secure regular lines of buildings, compensation must be forthcoming.

3. *Sewerage.*—(*a*) V-shaped drains of laterite are employed. Both on account of their defective shape, the numerous holes in the laterite and inefficient flushing practised, they are a source of nuisance. In Nellore, East, the stench from these drains is very marked. The house connections also are very bad. Under section 213, there is no reason why the latter point should not be attended to. Special arrangements for flushing the drains near their heads from some well should be arranged for. If necessary to effect a junction, small open drains or pipes should be laid between the wells and the drains, and for the drains themselves their section should be altered by filling with cement concrete having cement plaster surface, or, if this prove less expensive, Burn's half -tile* drains might be laid upon lime concrete within the existing drains. Were these points attended to, the existing sewerage arrangements would be of considerable sanitary value to Nellore, West. The sewage from this part of the town has no definite destination. It is allowed to soak near the channel or, in wet weather, to find its way into it. Yet it would, as I pointed out in 1890, be a simple enough matter to start a small plot where cultivation could be profitably pursued with sewage close to the present point of exit, or, if the expense were not prohibitive, by under-syphoning the irrigation channels and applying the sewage to a plot on the opposite side.

* These cost per lineal foot —

3″ ..	As. 2	12″ ..	As. 10
4″ ..	,, 3	15″ ..	Re. 1
6″ ..	,, 4	18″ ..	,, 1-6
9″ ..	,, 6		

(*b*) The principles laid down in the above are also applicable to the drainage arrangements in Nellore, East.

Chairman's Remarks.

No doubt there has been some slackness on the part of the municipality in the matter of encroachments in years gone by, mostly due to inefficient out-door establishment, but now encroachments are vigorously prevented, and to effect this still more satisfactorily, the Government will be addressed on the subject of having this town surveyed at an early date.

The drains in the town, excepting one or two minor ones, being very old-fashioned with defective levels and completely denuded of plaster, are indeed more a source of nuisance. The drainers clean and flush them as far as possible every day. To remedy the defective house connections pointed out, steps will be taken under section 213. The suggestion to make special arrangements for flushing the drains near their heads from some well will be carried out if found feasible. Although the work of altering the section of the existing drains in the manner pointed out cannot be undertaken and carried out at once owing to paucity of funds, the council hope to be able to do something in this direction year after year. As the few little drains in Nellore, West, and the main bazaar drains receive very little sewage, the council do not think it worth while starting a plot for cultivation as suggested by the Sanitary Commissioner, especially when no funds can be spared for any such experiment.

The question of starting a sewage farm in Nellore, East, will, however, receive attention of the council when complete

Inspection Notes.

(*c*) In carrying out these improvements, it would simplify the work necessary if at least one of the present irrigation channels on the East side were abolished. Both are within seven or eight yards of each other, and there seems no *prima facie* reason why the flow should not be united in one channel.

4. *Water-supply.*—(*a*) The chief source of supply is the channel from the Nellore tank. This receives a considerable amount of surface washing from inhabited areas as well as sewage. Although an order exists that it shall be reserved for drinking-water purposes, the precaution of placing watchmen along the channel to see that the order is enforced is not arranged for. Pending the introduction of a correct water-supply, which I trust the council now see the urgent necessity for, I consider some means should be taken to temporarily secure that water in this channel shall not be delivered in a dangerously contaminated condition. During 1891, 523 deaths occurred from cholera in this town, showing that when cholera is introduced into Nellore, it is an enemy not to be lightly got rid of. The water might be conducted up to the special well excavated by Dr. Ross near the channel in stoneware or rivetted iron pipes—a suggestion made by the certificated sanitary inspector—or, the well might be employed for receipt of filtered water from a surrounding gravel-filter. Either mode would secure a better quality of water than that at present in use. But the success of such a temporary method would depend very largely upon the care with which the reservoir whence the supply is brought by this channel is protected. On my inspection, certain extraordinary evidence to the opposite was presented to me; the revetment of the tank on the town side was so covered with successive deposits of *human fœcal matter that scarcely a cubit of the length of any single row of stones down to the water's edge could be distinguished continuously.* This was the condition for 150 yards of the bund. Practically, the same condition of affairs was pointed out in my inspection notes, embodied in G.O., No. 1802 M., dated 25th November 1890. The excuse forthcoming on behalf of the municipality

Chairman's Remarks.

and thorough flushing of the drains in this part of the town on the lines suggested by the Sanitary Commissioner in paragraph 3 (*a*) becomes possible.

The Revenue authorities will be addressed on the subject.

The channel from the Nellore tank supplies drinking-water only to a portion of people of Nellore, West, and one or two other suburbs, and not to the whole town, as one might think from the Sanitary Commissioner's notes. There are several good-water wells besides, and a good many people of Nellore, East, resort to the Survepalli channel for their drinking-water. Of course, by this it is not meant to show that drinking-water is ample in this town and that therefore a correct water-supply need not be troubled about, but on the contrary to show that the introduction of a correct water-supply is the more necessary, since at present the great majority of the people are compelled to look to open channels for their elixir of life, but the water of which channels is necessarily liable to every imaginable kind of pollution. The council hopes to be able to take on hand, before long, this very necessary water-supply scheme. On the channel pointed out one or two more boards are being arranged to be put up to warn the public against defiling the water, and a permanent watchman has also been sanctioned by Government from April next. There is no special well excavated by Dr. Ross near any part of the course of this channel; perhaps the excavation by the municipality near the old slaughter-house is meant. The council will consider the advisability of improving this well and utilizing it for receiving filtered water from a surrounding gravel-filter as suggested, should funds permit. Government will be requested to include the tank and its bund within the municipal limits.

Inspection Notes.

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(*b*) Near the market is a collection of huts inhabited by coolies close to the edge of the channel. This certainly cannot aid the chances of water purity. The council should give these persons a site elsewhere, and remove them without delay.

(*c*) In my notes of 1890, I pointed to the most objectionable practice of throwing rubbish close to the channel near Dyke's bridge; rubbish is no longer deposited there, but, by an extraordinary mode of reasoning, the municipality has placed instead drain sludge! If it is requisite that this portion be filled up, nothing but clean earth should be employed.

(*d*) Close to Dyke's bridge is a patch of ground evidently forming a favourite spot for easement. Steps should be taken in consultation with the police to put a stop to this.

Chairman's Remarks.

This will be attended to.

Immediately on receipt of the "Notes" orders were issued to stop this practice, and the hollow here will be filled up gradually only by clean earth.

This is only one of the many spots so used. The Superintendent of Police was addressed on this subject more than once but with little effect. The plea put forth is that the department is too undermanned to assist the municipality. Materially in this respect the Superintendent of Police in his letter, No. 67, dated 10th February 1896, stated that the police are doing their best, and, as if to effectually stop being any more bothered by the council on this subject, wound off by pointing out, in a quasi-sanitary-officer-like fashion that the latrines are "ridiculously" too

Inspection Notes.

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(*g*) *Moulla Tank.*—A watchman is employed *only four months in the year* to watch this tank. This arrangement is of little use. The man should be employed throughout the year.

(*h*) *Raja Street Moulapettah Well.*—This is a favourite well. The stone beam across it should be removed, so as to prevent persons standing over it when drawing water. It should be cement-lined down to the water level.

5. *Conservancy*—(*a*) *Rubbish Conservancy.*—The condition of backyards shows that a large part of the total rubbish is stored within the town by private persons. In Moulapettah, notwithstanding the fact having been brought to notice by this office from time to time—although improvement has been effected—quarries were found near habitations in which up to date rubbish is stored.

(*b*) *Night-soil Conservancy.*—The latrine accommodation provided is defective both as to number and character. Of twenty-eight latrines, twenty-four are

Chairman's Remarks.

few for this town and that the best way of preventing committal of nuisances was to build more latrines and urinals. The only hope of the police doing any real service in this direction seems to be in moving the Government to enquire through the Inspector-General of Police into the plea, so often put forth, of insufficiency of hands, and to remedy the evil if proved not to be imaginary.

Steps will be taken to have both these wells closed.

Will be attended to.

As stated under paragraph 4 (*a*), Government has sanctioned a permanent watcher whose duty will be to watch this reservoir as well as the channel from the Nellore tank down to the market.

Will be attended to.

Large numbers of notices have been issued to parties to clean their backyards and many defaulters have been, and are being, prosecuted vigorously, and the practice of heaping rubbish in backyards has been already stopped to an appreciable extent. Several of the quarries noticed in 1890 were entirely closed, action having been taken by the municipality under sections 184 and 185; the few remaining and the new ones will be dealt with similarly.

The defective latrines are being gradually replaced by iron ones of approved patterns. Provision has been made to erect four iron latrines next year.

Inspection Notes.

mere enclosures surrounded either by brick or tatty walls. There are two corrugated-iron latrines. "Open space" latrines do not fulfil sanitary requirements, and should be replaced either by the forms advocated by Mr. Donaldson, Calcutta, or the Sanitary Board.

(*c*) *Night-soil and Rubbish removal.*—The methods pursued are very crude and unsuitable. There are seven square wooden night-soil carts, in which the fæcal matter is placed on layers of straw, and fifteen rubbish carts. The whole are dragged by men. The municipality should purchase twelve iron night-soil carts of 12 cubic feet capacity or eight of 100 gallons capacity. These should be drawn by bullocks, and not less than two trips per day should be made. This provision is the least that can accomplish the work required, and makes no allowance for the conveyance of urine or substances mixed with fæcal matter, and pre-supposes the whole of the carts to be filled to the brim. In addition the private scavengering staff should be provided with conservancy buckets on wheels in the proportion of one bucket to every three men, and for removal of excreta from the houses iron covered hand-buckets should be used, instead of the present unsuitable baskets.

(*d*) All this means expenditure, of course; but if the municipality is to make any attempt at serving sanitary dictates, it certainly ought to commence to deal with the A, B, C of conservancy. If it cannot meet these demands from current funds, it certainly ought to ask permission to raise a loan. It is out of the question that a municipality of thirty years' standing should not be provided with *all things essential for correct conservancy.*

(*e*) *Rubbish and Night-soil Depôts.*—One of these is situated on the Kistnapatam road; the other near the Nunkoor road. The former is at present in an unfit condition for its purpose. It could, however, be rendered of utility if properly drained and levelled. The sanitary inspector, being a certificated man, is aware of the method that should be pursued in laying this out, and, as he assures me he has pressed the matter on the attention of the municipality, I trust that early action will be taken. There is every reason to believe that poudrette would obtain a ready sale in the neighbourhood of Nellore.

Chairman's Remarks.

Of the seven wooden night-soil carts, six were replaced this year by air-tight iron ones of 12 cubic feet capacity at a cost of Rs. 600 and odd. One or more will be purchased next year so as to make up the required number. It is out of the question to employ bullocks to draw these carts as the monthly hire for a pair of bullocks in this town is as much as Rs. 25. Instead of bullocks more scavengers might with advantage be employed as they will be available for better conservancy of the latrines, &c., besides making two trips to the night-soil depôt. Provision will be made in the next budget for some conservancy buckets on wheels and for iron covered hand-buckets for the private scavenging staff as suggested.

The minor improvements suggested by the Sanitary Commissioner are being carried out year after year, and as regards the water-supply and drainage scheme the council intends moving the Government, as soon as the amended Act comes into force, as desired in their Order, No. 38 M., Mis., dated 12th January 1895.

The work of improving the rubbish depôt referred to on the lines suggested will be taken on hand soon. The council fears it cannot at present turn its attention to the matter of poudrette manufactory as it would involve an additional staff, the expenses of which it is not prepared to meet, specially as a ready sale of the new stuff in this town or its neighbourhood at anything like a remunerative price is extremely doubtful.

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(*f*) Only 842 houses of a total of 1,275 are attended to under the private scavenging system. The attention of the municipality is invited to G.O., No. 749 M., dated 13th June 1894.

6. *Slaughter-house.*—(*a*) This has been lately built. The well water is obviously not used; the butchers resort instead to the foul water of the channel. I advise the municipality to apply for a copy of the revised plan lately issued by the Sanitary Board, which provides for a gutting room and for the distribution of water within the slaughter-house correctly protected. This would add very little to the total cost of the existing building and greatly enhance its sanitary value.

(*b*) No effort is at present made to dispose with advantage of the refuse and washings from the slaughter-house. Suitable ground surrounds the slaughter-house, and the municipality would do well to convert it into a garden for production of vegetables, or other crops, cultivated with the aid of the sewage and refuse.

7. *Market.*—This is a structure upon which the municipality has spent money fitfully. The first ambition was to secure a surrounding wall and, in obtaining this, little money seems to have been left to build correctly the market. As it stands, it fulfils but poorly its functions. Last year, the municipality spent Rs. 700 upon erecting butchers' stalls. These have earthen floors, and are not provided with drains. The usual want of arrangements as to cleanliness with reference to disposal of meat is found. As to this, the sanitary inspector should advise the municipality. Under G.O., No. 79 L., dated 16th January 1891, the municipality should have consulted the Sanitary Board before spending the sum of Rs. 700, when doubtless they would have been advised to adopt a plan more in accordance with sanitary dictates.

8. *Graveyards.*—This subject has already been treated in my letter, No. 2111-S., dated 20th November 1895, embodied in G.O., No. 2112 M., dated 17th December 1895.

9. *Offensive Trades.*—A considerable number of "cattle yards," bakeries and skin stores are neither licensed nor specially inspected as to their sanitary condition. Arrangements should be made to give effect to section 188 on this subject.

Chairman's Remarks.

Attempts are made to increase the number of houses served by private scavenging system by strictly resorting to prosecution of owners of unclean privies and the number is appreciably increasing month after month.

The use of the channel-water has been entirely prohibited since; and the sanitary inspector has strict orders to see that the larger cistern inside the slaughter-house is kept filled with the well-water before slaughter commences every morning. Provision will be made in the budget for a gut-house, and the Sanitary Board will be applied to for a copy of the revised plan.

The council for the present intends leasing out the land around the slaughter-house for cultivation with the aid of the sewage and refuse referred to, and, if the result is found satisfactory, will conduct the business departmentally.

The plans and estimates for the stalls were duly approved by the Sanitary Board and the improvements suggested will be carried out as soon as possible.

The council has taken this matter earnestly on hand and hopes to be able to make satisfactory arrangements very soon.

Licenses for skin stores were withheld two or three years ago, as it was thought inadvisable to have them within the town. But it is intended again to insist on their being licensed. Owners of bakeries also will be asked to obtain

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Chairman's Remarks.

10. *Vaccination*.—(*a*) The vaccination sheds in which the calves are retained are incorrectly built and do not fulfil requirements. The municipality should apply to the Sanitary Board for suitable plans and should, in conjunction with the district board, build accordingly.

Of a total of thirty-six children up to ten years of age met on the streets haphazard 77 per cent. were found protected by vaccination and 11 per cent. by small-pox.

The following figures exhibit the progress of vaccination :—

licenses. The sanitary inspector has been directed to make special inspections of skin stores, &c., as to their sanitary condition.

The vaccination sheds referred to do not belong to the municipality but are the property of the district board. The council understands that the District Medical and Sanitary Officer has recently addressed the President of the District Board with a view to altering the sheds and building a third one for better accommodation of the calves.

Total births registered between the 1st January and 30th June 1895.	Number vaccinated.		Number vaccinated a second time because first operation proved unsuccessful.		Postponed under medical certificate at the end of six months.	Died.	Left the town.	Unaccounted for.	Ratio of successful vaccinations to total births per cent.
	Successfully.	Unsuccessfully.	Successful.	Unsuccessful.					
403	141	..	..	..	7	78	149	1	34·98

11. *Registration*.—This is conducted by two registrars on Rs. 10 each. Only twenty prosecutions were made by the municipality during the last year for failure to register. The estimated population at the end of December 1895 was 30,264; but according to municipal registration it amounted to only 29,904. Much more energy on the part of the municipality in this matter is essential.

The work of the two registrars is checked by the two sanitary inspectors regularly, but although care is taken to see that the existing staff does its best, it is believed there is room for improvement in this respect and the council will consider how to best effect the improvement. There has been an appreciable increase in the number of prosecutions during the last few months.

Years.	Ratio of births per mille of estimated population.	Ratio of deaths per mille of estimated population.	Percentage of deaths from				
			Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa.	All other causes.
1893	24·2	17·7	..	0·6	28·3	3·4	67·7
1894	29·8	20·2	0·2	1·5	33·4	1·1	63·8
1895	30·2	20·5	..	..	24·5	2·6	72·9

12. *Sanitary Administration*.—(*a*) More economy might, I think, with advantage be exercised in the matter of office establishment, in view of the pressing requirements of conservancy. The following is the list of employés :—

			Rs.	
One manager	..	..	40	
One head clerk	..	..	25	
One 2nd clerk	..	..	20	
Two clerks ..	..	..	15	each.
One attender	..	..	8	

Two peons on Rs. 7 and Rs. 6, respectively.

The reduction in the office establishment suggested is not feasible. The system of correspondence, keeping records, &c., introduced by Dr. C. D. Macleane, and also the introduction of various account forms, have immensely increased the office work and the number of hands cannot now be reduced without undoing the system, which is a good one, and without impairing efficiency.

Inspection Notes.

Chairman's Remarks.

It seems to me that one manager, one head clerk and one copying clerk, and two peons ought to suffice for requirements. This would set free funds urgently required elsewhere.

(*b*) In my review of the budget of the municipality, I have already expressed my opinion as to the desirability of a complete alteration of the arrangements of the sanitary staff. It having been decided to procure correct plant for removal of rubbish and night-soil, there should be appointed thirty sweepers, sixty toties and eight peons. Irrespective of this question, however, I would advise the municipality to place the certificated sanitary inspector in full charge of the sanitary staff in direct communication with the Chairman. At present, I understand that responsibility is divided between two sanitary inspectors, one of whom has undergone no sanitary training.

The question of re-organizing the conservancy establishment had engaged the serious attention of the council for a long time and after mature consideration and with the approval of Government the present change was effected and has been working satisfactorily.

It is true that one of the sanitary inspectors has not had the sanitary training, but he has been in charge of sanitation for some years and has discharged his duties efficiently.

The certificated sanitary inspector is in charge of that portion of the town where his attention and advice are mostly needed, and it will not be to the advantage of the municipality to place him in charge of the whole town. The council intends to submit the newly-appointed overseer to training next year. After undergoing training, he will doubtless be of much use to the municipality in sanitary matters also without any additional cost.

BELLARY,
13th February 1896. (Signed) W. G. KING, Surgn.-Lieut.-Col.,
Sanitary Commissioner for Madras.

ENCLOSURE.

EXTRACT from Resolution Book of the Nellore Municipality, dated 18th March 1896, No. 523.

Read inspection notes of the Sanitary Commissioner, Madras, on his inspection of Nellore Municipality in the month of November 1895, and the replies thereto.

Resolution.—Approved.

No. 632-Mun.

Submitted to the Chief Secretary to Government, Local and Municipal Department, Madras, through the Head-quarter Deputy Collector, Nellore.

26th March 1896. (Signed) C. T. SALDANHA,
Chairman.

No. 1673-M.

Submitted.

30th March 1896. (Signed) P. SITA RAO,
Deputy Collector.

C. No. 851-Eng.

Forwarded to the Chief Secretary to Government, Local and Municipal Department, Madras.

31st March 1896. (Signed) W. S. MEYER,
Ag. Collector.

Order—No. 858 M., dated 18th May 1896.

Recorded with the following remarks :—

(1) The result of the correspondence with the Revenue authorities regarding the closure of the irrigation channel referred to in paragraph 3 (*c*) should be reported.

(2) The proposal to include the Nellore tank and its bund within municipal limits should form the subject of a separate communication.

(3) The attention of the Inspector-General of Police will be drawn in the Judicial Department to the remarks of the Chairman on paragraph 4 (*d*) of the notes. The council should, however, see that its servants actively co-operate with the police in prosecuting persons who commit a nuisance in places like the one near Dyke's bridge referred to by the Sanitary Commissioner.

(4) Steps should be taken at once to improve the registration of vital statistics, which appears at present to be very unsatisfactory.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the Chairman, Municipal Council, Nellore.
" Collector of Nellore.
" Sanitary Commissioner.
" Sanitary Engineer.
" Judicial Department.
Editors' Table.

Bxd. C. M. Thumbuswamy

Govt. of {1896} Madras.

LOCAL AND MUNICIPAL.

Issued

Recd. *Encl.*

G.O., No. 858 M., 18th May 1896.

MAY.

Inspection Notes.

Recording, with remarks, the Sanitary Commissioner's — on the Nellore Municipality.