Nr. No. 10412

Govt. of {1883} Madras.

FINANCIAL.

S & C

Issued

Recd. 23/11/83 Encl.

G.O., 15th November 1883, No. 2580.

No. 3434 Wdf Dcer 1st 1883.

NOVEMBER.

Municipal—Sanitary.

Communicating sanitary inspection notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Madras, on the municipalities in the Tanjore district.

B/

No. 3434 Wdf Decr 1st 1883.

Communicated to the Superintending Engineer 6th Circle for information.

U.S. 26.11.83

CJ. 23/11

per 7/12

S. E 6th Circle.

6th

With order

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

READ—the following paper :—

Sanitary Inspection Notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Tanjore district.

MAYAVARAM MUNICIPALITY.

INSPECTED 13TH AND 14TH AUGUST 1883.

Population per census of 1881—*males*, 11,304 ; *females*, 11,740 ; *total* 23,044.

Roads.—Only one road is metalled. The streets are kept clean and in good order. The dry rubbish is now taken to three depôts and annually sold.

There are 160 dust-bins, but a few more are necessary, and I would suggest moveable ones, a wooden-box with a lid but without a bottom is a good muster.

Drainage.—No regular system of drainage. Side channels have been cut in the main streets.

Water-supply is chiefly obtained from the Cauvery. There are many tanks, but four are now reserved for drinking purposes. These tanks should all be emptied and cleaned out this year. In many of the backyards there are wells, the water of which is used for drinking.

Conservancy.—The establishment consists of 1 nuisance inspector, 2 sub-inspectors, 9 peons, 18 sweepers, 7 toties, 3 tank watchmen, 17 rubbish and 3 night-soil carts.

There are eleven temporary latrines, but they are very little used. The private latrines are few in number, and they are cleaned by the municipal toties on payment.

There is no municipal slaughter-house, and the killing of animals is done in a small open space. It was clean on the date of my visit. From six to eight animals are daily slaughtered.

The town is lighted by 110 kerosene-oil lamps.

Markets.—There is a municipal vegetable one, which was clean when I visited it. It is given on contract for Rs. 300 per annum. There is also a small private fish market, and it is kept clean.

The cremation grounds are on the banks of the Cauvery between the two villages. The burial-grounds are very few, some are enclosed and some not, but all should be.

Vaccination.—This municipality employs one first-class vaccinator.

First-class vaccinator T. Muthuvalu Mudaliar has fifteen years' service and knows English. As he was very ill when I was at Máyavaram I saw no lymph cases. His register was neatly kept and his instruments in good order. Batta is given to mothers when lymph is extracted from their children's arms.

This vaccinator's work from 1st January to 31st July is —

Total number vaccinated	676
Successful	604
Total number vaccinated under one year	236
Total number vaccinated from arm-to-arm	399
Number of days on which work done	180

The rule is that a hundred cases must be done monthly, and to enable the vaccinator to do this he is allowed to vaccinate in villages near. As the average monthly

rate of Máyavaram is between 66 and 70 the vaccinator complained that he could not do a hundred. I visited five pial schools and found vaccinated 35, unprotected 34, small-pox 25. In the municipal schools most of the children are protected.

Registration of births and deaths.—The three inspectors are supplied with cheque books, and the returns are compiled in the municipal office by a clerk. The books were neatly kept and written up to date. From 1st January to 31st July there were 423 births and 392 deaths.

Cholera.—From 4th January to 29th July of this year cholera prevailed more or less in Máyavaram. No cause could be traced for its origin, and there was no history of importation. There were 49 deaths and 171 attacks. It prevailed most in Komad division and in the western street of Máyavaram temple. In these two parts people obtain their water from tanks, which only lately have been thoroughly reserved for drinking purposes. After the tanks were reserved the civil apothecary states that the number of cases began to diminish. The people attacked were chiefly weavers and fishermen. No cases of cholera occurred among the Brahmins who drink the river water.

Remarks.—Máyavaram is on the whole a clean, well-kept town. All the tanks reserved for drinking purposes should be emptied and cleaned out this year.

The improvements which have taken place since last inspection have been, viz., repairing roads; building another ward to Webster hospital; extending hospital compound and filling up all the holes in it; building another shed in the market and filling up the small tank close to it; the erection of temporary latrines, reserving some tanks for drinking purposes, and the introduction of cleaning private latrines by municipal servants on payment.

The proposed improvements are to metal another main road, to erect three more latrines (one in the municipal school compound, one in the hospital compound, and one in the eastern part of the town) and to have another night-soil cart.

KUMBAKONAM MUNICIPALITY.

Inspected 15th, 16th, and 17th August 1883.

Population per census of 1881—*males*, 24,397; *females*, 25,701; *total*, 50,098.

Roads.—Main roads metalled, and in good order. They are kept clean and the rubbish is taken to a depôt out of the town where it is stored and annually sold. Last year Rs. 80-13-0 were realized from the sale of the street sweepings. There are no cinerators. Many of the backyards are kept in a very dirty state.

The dust-bins are 413 in number, and as more are to be built, I would suggest moveable ones, a wooden-box with a lid but without a bottom.

Drainage.—No regular system of drainage. Most of the streets have side cuttings.

There are numerous cesspools which are daily cleaned out by the municipal servants. The Vice-President says these cesspools are increasing in number, as the people do not now allow their house drains, &c., to discharge into their backyards or compounds.

Water-supply is obtained from the Cauvery and Arasillar rivers chiefly. There are many tanks in the town, the water of which is both used for drinking, bathing, &c. One tank is reserved for drinking purposes. There are a few public and many private wells used for obtaining drinking water. The supply is abundant. Two watchmen look after the rivers and see the banks are not polluted, and two guard the tanks.

Conservancy.—The establishment consists of 4 inspectors, 6 peons, 4 watchmen (2 for rivers and 2 for tanks), 36 sweepers, 19 latrine toties, 34 street toties, 36 rubbish, 18 cesspool and 12 night-soil carts.

There are 26 public latrines, which are cleaned twice daily. The private latrines are numerous, and the municipal servants clean only about 60, which are situated in three streets. It would be well if the municipality undertook the cleaning of all private latrines daily, as many of the backyards are kept in a dirty state. The night-soil is taken out of the town and buried in pits. There is no sale for it, although the Vice-President states he has shown its value as manure by using it in the Municipal

office compound. As so little is realized from the sale of the street sweepings, I think a few cinerators might be built to burn all the dry rubbish and the ashes used in the latrines. If a municipal garden could be started the manure could then be used in it.

There are 162 kerosene-oil lamps, but more are required.

Slaughter-house.—There is one slaughter-house which is kept very clean. The average number daily killed is 45, and last year Rs. 420-4-0 were realized from the slaughter-house. The "fee collector" is supposed to examine animals before they are killed.

There is no municipal market, and it is very doubtful if one would pay, as a convenient site is not available.

Cremation and Burial-grounds.—There are three burning-grounds, the principal one is situated on the north bank of the Cauvery, is enclosed partly by a wall, and is kept clean.

There are five Muhammadan burial-grounds in the town, and all should be enclosed. Some are to be closed, as they are objectionable.

Vaccination.—Two vaccinators are employed by this municipality—one first class and one paid probationer.

First-class vaccinator M. Sundrum Pillay has five years' service, knows English slightly. His register was neatly kept and written up to date. Instruments not in very good order, and he had no preserved lymph of any kind. He requires a new lancet. I saw some recent cases done by him, and the lymph in use appeared very good. From 1st January to 31st July his work was—

Total number vaccinated	569
Successful	497
From arm-to-arm	497
Under one year of age	142
Number of days on which work done	176

The rule is that 150 cases should be done monthly by this man, but he does not do so.

Paid probationer A. Dorasawmi Mudali has over three years' service, knows English, and appears a smart man. His register was well kept, but his instruments were not in very good order. His lancet was old, and he requires a new one. He also had no preserved lymph. From 1st January to 31st July his work was—

Total number vaccinated	273
Successful	245
From arm-to-arm	245
Under one year of age	94
Number of days on which work done	176

Mr. Apothecary Ashworth supervises the work of the vaccinators, and he states that the number of cases vaccinated have lately decreased, but that the quality of work turned out is much better. For two years (1880-81 and 1881-82) there had been no deaths from small-pox, but in 1882-83 there were 10. The Brahmin sub-inspector who used to assist the vaccinators does not now do so. A Sudra inspector goes round with them. Arm-to-arm vaccination is well carried on, but infantile vaccination is backward; thus from 1st January to 31st July only 236 cases were done under one year of age, while the births for the same period were 778; while at Kumbakónam some cases were done from an inoculated calf which the deputy inspector of vaccination had brought from Tanjore.

Registration of births and deaths.—Births from 1st January to 31st July 787 and deaths 778. Books are neatly kept and written up to date.

Cholera made its appearance in Kumbakónam on 1st August 1883. The first case which occurred was that of a young Pariah girl who resided in a small hamlet surrounded by paddy-fields in the southern part of the town. She had not been out of Kumbakónam, and no cause could be traced for her being attacked. The people in this hamlet derive their water-supply from the Arasillar river, but a channel runs beside the house where the girl lived, and it is very probable she drank this water. Before her attack she had partaken of fish and curry, and one of the inspectors stated that some of the fish which was being sold then was so bad that he had it condemned and buried.

The second case occurred close to the first, and then the disease began to spread principally in the southern part of the town. From 1st to 16th August there were thirteen attacks and nine deaths. No Brahmins were attacked at the time cholera was prevailing in some parts of the taluk.

Remarks.—This town, which is the educational centre of the Tanjore and southern districts, is very much in need of a good drainage scheme. The Vice-President stated that one has been proposed, and if it can be carried out the innumerable cesspools and stagnant pieces of water which are to be found all over the town can then be abolished.

The improvements which have taken place since last inspection have been the following:—Metalling, widening, and raising some roads; erection of seven temporary latrines; six more dust-bins built; the well at the side of the branch dispensary has been repaired for the use of the public; twelve rubbish and six cesspool carts have been entertained; sixteen more street toties and the introduction of private scavengering in three streets.

The proposed improvements are a drainage scheme, metalling some more roads, erection of more dust-bins, extra lamps, and the introduction of private scavengering for the whole town.

TANJORE MUNICIPALITY.

Inspected 18th, 20th and 21st August 1883.

Population per census of 1881—*males*, 26,272; *females*, 28,473; *total*, 54,745.

Roads.—Most of the roads are metalled, and in good order. In the fort many streets are narrow, badly ventilated, and not kept clean.

There are 216 dust-bins which are cleaned out daily. In place of these, which are too high and too deep, I would suggest some moveable ones.

All the refuse (street sweepings, night-soil, &c.) of the town is now given to a contractor, who in return supplies so many carts (forty) and removes it beyond the town. By this arrangement the municipality hopes to save about Rs. 360 per mensem. The night-soil depôt on date of my visit was not at all clean, and about the town a good many heaps of rubbish were to be seen. I think it would be better if cinerators were erected where the dry rubbish could be burnt, the ashes used to mix with the night-soil, buried, and then offered for sale.

Many of the hedges require cutting down, and in some few parts prickly-pear grows abundantly.

Drainage.—In the fort there are many masonry drains which are said to discharge either into the Vadavar river or fort ditch. The northern part of the fort ditch where the drains discharge was in a very dirty state; the sewage there accumulates, stagnates and does not seem to have any determined ending. Something should be done to remedy this and carry the sewage to fields beyond the town. It would be advisable to have the drains flushed occasionally. With the exception of the eastern part the whole of the fort ditch is given on contract for Rs. 1,800 per annum.

There are some cesspools which are daily emptied out.

Water-supply is obtained principally from tanks and wells. Three tanks are reserved for drinking purposes. In one division the people use the Vadavar river water. There are many private wells which have parapet walls, but no platforms which they should have.

In the fort there are some cisterns which contain drinking water at certain times of the year. These are, however, objectionable as the conduits run close to the drains and leakage between the two takes place. These cisterns should, I think, all be closed, as the water in them cannot be good.

Conservancy.—The establishment consists of 1 overseer, 4 inspectors, 12 maistries, 1 storekeeper, 12 peons, 72 sweepers, 34 toties, 11 watchmen and 1 water regulator.

There are 40 latrines, 26 being permanent and 14 temporary buildings. The permanent ones have still very wide doors of admittance allowing cows, &c., to enter.

There are many private latrines, and 876 are daily cleaned by the municipal servants on payment.

There are 195 kerosene-oil lamps, but more are required.

Slaughter-houses.—There are two—one in the northern and one in eastern parts of the town. They are not kept as clean as they should be, and they are built on a bad plan. The floors of these houses require repairing, and it would be well to build a new one on a good plan. About 100 animals are daily killed. These slaughter-houses are given on contract for Rs. 780 per annum.

Cremation and Burial-grounds.—There are two burning grounds and many burial-grounds. A burning and burial ground is situated on the banks of the Vadavar river just where the people go for their drinking water. This one should be removed and placed some way lower down the river.

Market.—There are two markets—one inside the fort for vegetables, and one outside for all things. They were clean on the date of my visit. The municipality realises a yearly income of nearly Rs. 5,000 from these markets. The large market seems to be becoming more popular, and a large iron tank and engine have been put up so that the drains are daily flushed and kept clean.

Vaccination.—Two vaccinators are employed by this municipality—one first class and one second class.

First-class vaccinator Pokala Guntiah Naidu has sixteen years' service, is an old man, knows no English, but seems an honest, hard-working man. His register (written in English by a friend) was kept neatly and up to date. Instruments in good order and had some preserved lymph between glasses. Some capillary tubes should be supplied to him.

Second-class vaccinator Murugasen Pillay has fifteen years' service, thirteen of which have been spent in the Tanjore municipality. He knows English well, but his work was not very satisfactory. His register was untidy and not correctly kept. Instruments in good order.

The work done in this municipality from 1st January to 31st July 1883 has been as follows:—

Name.	Total number vaccinated	Successful.	From arm-to-arm.	Under one year of age.	Number of days on which work done.
First-class vaccinator Pokala Guntiah Naidu	702	669	700	137	138
Second-class vaccinator Murugasen Pillay	441	409	438	61	113
Total ..	1,143	1,078	1,138	198	..

Cases are taken for inspection to the hospital every week, and occasionally the hospital assistant goes round with the vaccinators to see their cases, but he does not sign their registers. When cases are seen by the Civil Surgeon, one anna is given to each, but no extra batta when lymph is extracted, and I think it should be. The rule is that the first-class man must do 100 monthly and the second-class man 70. The vaccinators stated that there was great difficulty in getting subjects, as no assistance was given them. I would suggest that the municipality be divided into two vaccine circles, and that the commissioners be asked to see that all the unprotected in their divisions are vaccinated. Infantile vaccination is backward: thus for the seven months only 198 were done under one year of age, while the births for the same period were 613. There were six deaths from small-pox this year.

Registration of births and deaths.—Books neatly kept and written up to date. From 1st January to 31st July there were registered 594 births and 613 deaths. There have been no cases of cholera. Registration seems to be inaccurately kept however, thus during the past five years there have been 5,560 deaths and 5,507 births. The census for 1871 was 52,175 and for 1881, 54,745. From 1st April 1881 to 31st March 1883 there have been 2,297 deaths and 1,773 births.

Remarks.—The improvements which have taken place since last inspection have been—repairing and raising some streets, improving glacis opposite the hospital, strengthening the bank of the Panaicken voy, re-erecting the wall of the supply-channel near

the Lutheran Mission tank, making a masonry channel from the old court-house tunnel to the fort ditch, whitewashing the big market and erecting at one corner of it an iron tank and engine, building another shed in the fish market, cutting a surface drainage channel in west rampart street, building some dust-bins and demolishing others, repairing and tarring latrines, erecting sheds for the toties, and constructing a drain opposite the big market.

The proposed improvements are to demolish the southern rampart wall of the fort and to fill up this part of the ditch. If this were done, it would be a great improvement as the streets in this part of the fort are very badly ventilated. It is also intended to build a new slaughter-house, and this is much required. The cisterns and conduits in the fort are to be repaired, but I think it would be better if they were closed altogether. Some tanks are to be repaired, three more latrines are to be erected, some streets are to be raised, and a few new drains are to be made.

MANNARGUDI MUNICIPALITY.

Inspected 22nd and 23rd August 1883.

Population per census of 1881—*males*, 9,424 ; *females*, 9,985 ; *total*, 19,409.

Roads.—Only two roads are metalled. They are in a bad state of repair. The streets are kept clean and the dry rubbish used to fill up holes, &c. Formerly the street sweepings were taken to depôts where it has accumulated, as there is no sale for them.

There are 50 dust-bins—20 being pucka built, and 30 temporary wooden ones. More moveable ones are required, and I would suggest a wooden box with a lid but without a bottom.

Drainage.—None. There are about 20 cesspools which are daily cleaned out by the municipal servants. The drainage of many of the backyards is defective, and so some new roads have been opened out between the backyards of the houses to enable the sweepers to clean them.

Water-supply—from tanks, river, and a few wells. Three tanks are reserved for drinking purposes. Two wells are used to get drinking water from. Most of the tanks should be emptied and cleaned out this year.

Conservancy.—The establishment consists of 3 inspectors, 6 maistries, 7 tank watchmen, 4 toties, 12 channel coolies, 24 sweepers, 12 rubbish and 2 cesspool carts.

There are 11 latrines—2 permanent and 9 temporary. They are very little used. The night-soil is buried in pits close to the latrines.

There are many private latrines which are cleaned by the owners.

There are 150 kerosene-oil lamps, but more are to be put up.

Market.—A suitable site has been chosen where the weekly market is held. Some sheds have been put up. A tank has been made, and it is intended to have this piece of ground enclosed. There are two small markets—one for fish and one for meat, and both were very clean on the date of my visit.

Cremation and Burial grounds.—There are four burning-grounds and all are situated near the river. The burial-grounds are two—one Christian and one Muhammadan; both are enclosed.

Vaccination.—One first-class vaccinator is employed. First-class vaccinator Ranojee Row has over nine years' service, knows English, and for the last five months his work has been supervised by the assistant apothecary. Register neatly kept and instruments in good order. His work from 1st January to 31st July was—

Total number vaccinated	388
Successful	354
From arm-to-arm	280
Under one year of age	99
Number of days on which work done	177

I saw some recent cases done by this man and the lymph in use appeared good. He is required to do 50 monthly, but lately he has been doing more, and he gets assistance from the nuisance inspectors. Infantile vaccination is backward, thus from 1st January to 31st July only 99 cases were done under one year of age, while the births for the same period were 301.

Registration of births and deaths.—Books neatly kept and written up to date. From 1st January to 31st July there were 301 births and 281 deaths. There have been no cases of cholera since February. For two years there have been no deaths from small-pox.

Remarks.—This municipality is on the whole kept clean. The improvements which have taken place since last inspection have been—erecting more dust-bins, putting up six tatty latrines, increase of the conservancy establishment and extra lamps, remetalling the main road and repairing others, repairing tanks and wells, opening up of six lanes between the backyards of houses, making new streets, commencement of a municipal market, and opening a branch dispensary in the town.

The proposed improvements are—to metal another road, to erect a masonry building for the cremation of bodies, to increase the number of dust-bins, to build a cinerator, to get an engine so that all the tanks may be annually emptied, to open up more lanes with a view to having all private latrines cleaned by the municipal toties, to complete the municipal market, to start a municipal garden for utilising the street sweepings and night-soil, and to put up more lamp-posts.

NEGAPATAM MUNICIPALITY.

Inspected 24th, 25th, and 27th August 1883.

Population per census of 1881—*males*, 24,305 ; *females*, 29,550 ; *total*, 53,855.

Roads.—Only a few roads are metalled and they are in a bad state of repair. The main streets are clean, but the smaller ones are not, and they are used as latrines. The street sweepings of Negapatam are carted to Hathaway's park, and those of Nagore to two places, just outside the town. There was no sale for them this year. Many of the backyards were in a very dirty state.

There are 527 dust-bins, all pucka built. More are required, especially in Nagore, and I would suggest moveable ones.

Drainage.—None. There are about 712 cesspools of various sizes and patterns. They are cleaned out once in every two or three days by the municipal servants gratuitously. The contents of these cesspools are carted to Hathaway's park, the sea, and to a ditch in Nagore. The cesspools, if possible, should all be of one pattern, and I would suggest a pucka cistern with a bucket in it and that they be emptied *daily*.

Water-supply—from tanks and wells. Six tanks are reserved for drinking purposes, and occasionally they are emptied and cleaned.

There are seventy-seven wells from which drinking water is obtained; most have parapet walls and platforms, but some require repairing, and all should be provided with drains to carry off the waste water.

Drinking water is also obtained during the north-east monsoon from the Ooppanaur river which runs along the west of the town from north to south. The supply cannot be said to be good, as it is subject to numerous defilements in its course, and the banks are largely used as latrines.

Conservancy.—The establishment consists of 5 nuisance inspectors, 15 peons, 92 scavengers, six tank watchmen, 1 toty maistry, 1 engine cooly, 15 rubbish, 12 sewage, and 8 night-soil carts. The staff is not sufficient. The scavengers, night-soil and sewage carts should be increased.

There are eighteen pucka built latrines—seventeen being in Negapatam and one in Nagore. There are also five temporary latrines, but they are out of repair. Sand, not dry-earth, is used in the latrines, and the night-soil is taken to Hathaway's park and to a field in Nagore. There is no sale for it.

About 1,000 private latrines are cleaned by the municipal toties on payment, and it would be well if all were so done.

To facilitate the cleaning out of these latrines, some iron boxes (twenty-four in number) have been placed at the corners of streets. The night-soil is deposited in them, and when the carts (eight in number) pass, they are emptied. As these boxes are not air-tight and many are in a bad state of repair, they are not only a nuisance to the people

whose houses are close to them but also to the passers by. They should all be condemned and more night-soil carts entertained. To enable the men to clean the privies of houses situated in narrow lanes, small hand-carts could be obtained.

Slaughter-houses.—There are two and are kept clean. The animals should, I think, be inspected first before being killed. The municipality derives a yearly income of Rs. 1,000 from these houses.

There are 220 kerosene-oil lamps, but more are to be put up.

Markets.—There is a large one in Negapatam, but many of the stalls facing outwards are still unlet. It was very clean when I visited it.

Vaccination.—This municipality employs two vaccinators—one first-class vaccinator and a second-class vaccinatrix.

First-class vaccinator N. Veerasawmy Naidu has nine years' service and knows English. His register was neatly kept and instruments in good order. From 1st January to 31st July his work was—

Total number vaccinated	622
Successful	569
Under one year of age	189
From arm-to-arm	480
Number of days on which work done	179

I saw one lymph subject done by this man, but the vesicles were not very good. He was on casual leave, and this was the reason he said he had no more cases to show me.

Second-class vaccinatrix Thungum has eleven years' service, about three of which have been spent in this municipality. As she cannot write well, her husband keeps her register, which was neatly written in vernacular. Her instruments were in good order. From 1st January to 31st July her work was—

Total number vaccinated	400
Successful	367
From arm-to-arm	218
Under one year of age	75
Number of days on which work done	178

This woman's work was unsatisfactory, and she could not show me any lymph subject. She stated that they had all proved unsuccessful. Her division is Nagore, but she will not reside there although directed to do so.

In this municipality vaccination is backward. In May last an order was passed that the first-class vaccinator must do 100 cases monthly and the second class 70, and since then vaccination has been improving. Batta is given to mothers when lymph is taken from their children's arms, but still arm-to-arm vaccination is backward. The vaccinator is very anxious that animal vaccination be started, and it might be tried for a few months. From 1st January to 31st July, 264 cases, under one year of age, were vaccinated, while the births for the same period were 585. I visited a few schools and found 54 vaccinated, 40 unprotected, and 39 marked.

Registration of births and deaths.—Three registrars are employed who have offices in the town. The nuisance inspectors also give information of the births and deaths that have taken place in their divisions. The books were neatly kept but unreliable. From 1st January to 31st July there were 585 births and 550 deaths. For the last five years the births have been 4,861 and deaths 5,452. There has been no cholera since March.

Remarks.—A great deal still requires to be done with regard to improving the water-supply, drainage, and disposal of sweepings and night-soil. I think cinerators should be built where the dry-rubbish might be burnt, the ashes used in the latrines and then taken and buried in Hathaway's park. The part of this park, which has been filled up, should be levelled and cultivated. If a piece of land could be obtained, the contents of the cesspools could be used to irrigate it.

The improvements which have taken place since last inspection are—the introduction of cleaning private latrines by the municipal toties, widening and raising some roads, making a drinking water tank and digging some wells, increase of conservancy establishment, building a new slaughter-house in Nagore, making a cart-stand, planting trees about the roads, and enclosing the market with a fence.

The proposed improvements are to build a pucka compound wall round the market and to make all the stalls face inwards, to increase the number of lamps, to raise some roads, build cinerators, have all cesspools made after one pattern, and to have an artesian well if possible.

The Vice-President proposes deepening and narrowing the Ooppanaur river and reclaiming the ground at each side of it. This would be a very great improvement.

I visited the two fish-curing yards and found them clean. No fish had been cured at the one at Numbiarcoopum for two days.

MADRAS, *22nd September* 1883. (Signed) J. A. LAING, Surgeon-Major, *and Inspector of Vaccination-Deputy Sanitary Commissioner.*

No. 1420.

Endorsement on the above.

True copy forwarded for the imformation of Government.

MADRAS, *5th November* 1883. (Signed) M. C. FURNELL, M.D., F.R.C.S., *Sanitary Commissioner for Madras.*

ORDER—dated 15th November 1883, No. 2580, Financial.

Communicated to the President of the Municipalities concerned.

(True Extract.)

C. G. MASTER,
Chief Secretary.

To the President of the Municipal Commission, Máyavaram.
" " " " " Kumbakónam.
" " " " " Tanjore.
" " " " " Mannárgudi.
" " " " " Nagapatam.
" Sanitary Commissioner for Madras.
" Public Works department.

Exd. J. Wright.

No. 3434 was/ 1st Dec.r/83
communicated
to S.E. 6th Circle
for information.
Sd/ CB.

Govt. of {1883} Madras.

FINANCIAL.

Issued

Read. Encl.

G.O., 15th November 1883, No. 2580.

N: 3434 was/ 1st Dec.r 1883

NOVEMBER.

Municipal—Sanitary.

Communicating sanitary inspection notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Madras, on the municipalities in the Tanjore district.

With order

S.E. 6th Circle

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

Read—the following paper:—

Sanitary Inspection Notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Tanjore district.

MAYAVARAM MUNICIPALITY.

Inspected 13th and 14th August 1883.

Population per census of 1881—*males*, 11,304; *females*, 11,740; *total* 23,044.

Roads.—Only one road is metalled. The streets are kept clean and in good order. The dry rubbish is now taken to three depôts and annually sold.

There are 160 dust-bins, but a few more are necessary, and I would suggest moveable ones, a wooden-box with a lid but without a bottom is a good muster.

Drainage.—No regular system of drainage. Side channels have been cut in the main streets.

Water-supply is chiefly obtained from the Cauvery. There are many tanks, but four are now reserved for drinking purposes. These tanks should all be emptied and cleaned out this year. In many of the backyards there are wells, the water of which is used for drinking.

Conservancy.—The establishment consists of 1 nuisance inspector, 2 sub-inspectors, 9 peons, 18 sweepers, 7 toties, 3 tank watchmen, 17 rubbish and 3 night-soil carts.

There are eleven temporary latrines, but they are very little used. The private latrines are few in number, and they are cleaned by the municipal toties on payment.

There is no municipal slaughter-house, and the killing of animals is done in a small open space. It was clean on the date of my visit. From six to eight animals are daily slaughtered.

The town is lighted by 110 kerosene-oil lamps.

Markets.—There is a municipal vegetable one, which was clean when I visited it. It is given on contract for Rs. 300 per annum. There is also a small private fish market, and it is kept clean.

The cremation grounds are on the banks of the Cauvery between the two villages. The burial-grounds are very few, some are enclosed and some not, but all should be.

Vaccination.—This municipality employs one first-class vaccinator.

First-class vaccinator T. Muthuvalu Mudaliar has fifteen years' service and knows English. As he was very ill when I was at Máyavaram I saw no lymph cases. His register was neatly kept and his instruments in good order. Batta is given to mothers when lymph is extracted from their children's arms.

This vaccinator's work from 1st January to 31st July is —

Total number vaccinated	676
Successful	604
Total number vaccinated under one year	236
Total number vaccinated from arm-to-arm	399
Number of days on which work done	180

The rule is that a hundred cases must be done monthly, and to enable the vaccinator to do this he is allowed to vaccinate in villages near. As the average monthly

rate of Máyavaram is between 66 and 70 the vaccinator complained that he could not do a hundred. I visited five pial schools and found vaccinated 35, unprotected 34, small-pox 25. In the municipal schools most of the children are protected.

Registration of births and deaths.—The three inspectors are supplied with cheque books, and the returns are compiled in the municipal office by a clerk. The books were neatly kept and written up to date. From 1st January to 31st July there were 423 births and 392 deaths.

Cholera.—From 4th January to 29th July of this year cholera prevailed more or less in Máyavaram. No cause could be traced for its origin, and there was no history of importation. There were 49 deaths and 171 attacks. It prevailed most in Komad division and in the western street of Máyavaram temple. In these two parts people obtain their water from tanks, which only lately have been thoroughly reserved for drinking purposes. After the tanks were reserved the civil apothecary states that the number of cases began to diminish. The people attacked were chiefly weavers and fishermen. No cases of cholera occurred among the Brahmins who drink the river water.

Remarks.—Máyavaram is on the whole a clean, well-kept town. All the tanks reserved for drinking purposes should be emptied and cleaned out this year.

The improvements which have taken place since last inspection have been, viz., repairing roads; building another ward to Webster hospital; extending hospital compound and filling up all the holes in it; building another shed in the market and filling up the small tank close to it; the erection of temporary latrines, reserving some tanks for drinking purposes, and the introduction of cleaning private latrines by municipal servants on payment.

The proposed improvements are to metal another main road, to erect three more latrines (one in the municipal school compound, one in the hospital compound, and one in the eastern part of the town) and to have another night-soil cart.

KUMBAKONAM MUNICIPALITY.

INSPECTED 15TH, 16TH, AND 17TH AUGUST 1883.

Population per census of 1881—*males*, 24,397; *females*, 25,701; *total*, 50,098.

Roads.—Main roads metalled, and in good order. They are kept clean and the rubbish is taken to a depôt out of the town where it is stored and annually sold. Last year Rs. 80-13-0 were realized from the sale of the street sweepings. There are no cinerators. Many of the backyards are kept in a very dirty state.

The dust-bins are 413 in number, and as more are to be built, I would suggest moveable ones, a wooden-box with a lid but without a bottom.

Drainage.—No regular system of drainage. Most of the streets have side cuttings.

There are numerous cesspools which are daily cleaned out by the municipal servants. The Vice-President says these cesspools are increasing in number, as the people do not now allow their house drains, &c., to discharge into their backyards or compounds.

Water-supply is obtained from the Cauvery and Arasillar rivers chiefly. There are many tanks in the town, the water of which is both used for drinking, bathing, &c. One tank is reserved for drinking purposes. There are a few public and many private wells used for obtaining drinking water. The supply is abundant. Two watchmen look after the rivers and see the banks are not polluted, and two guard the tanks.

Conservancy.—The establishment consists of 4 inspectors, 6 peons, 4 watchmen (2 for rivers and 2 for tanks), 36 sweepers, 19 latrine toties, 34 street toties, 36 rubbish, 18 cesspool and 12 night-soil carts.

There are 26 public latrines, which are cleaned twice daily. The private latrines are numerous, and the municipal servants clean only about 60, which are situated in three streets. It would be well if the municipality undertook the cleaning of all private latrines daily, as many of the backyards are kept in a dirty state. The night-soil is taken out of the town and buried in pits. There is no sale for it, although the Vice-President states he has shown its value as manure by using it in the Municipal

office compound. As so little is realized from the sale of the street sweepings, I think a few cinerators might be built to burn all the dry rubbish and the ashes used in the latrines. If a municipal garden could be started the manure could then be used in it.

There are 162 kerosene-oil lamps, but more are required.

Slaughter-house.—There is one slaughter-house which is kept very clean. The average number daily killed is 45, and last year Rs. 420-4-0 were realized from the slaughter-house. The "fee collector" is supposed to examine animals before they are killed.

There is no municipal market, and it is very doubtful if one would pay, as a convenient site is not available.

Cremation and Burial-grounds.—There are three burning-grounds, the principal one is situated on the north bank of the Cauvery, is enclosed partly by a wall, and is kept clean.

There are five Muhammadan burial-grounds in the town, and all should be enclosed. Some are to be closed, as they are objectionable.

Vaccination.—Two vaccinators are employed by this municipality—one first class and one paid probationer.

First-class vaccinator M. Sundrum Pillay has five years' service, knows English slightly. His register was neatly kept and written up to date. Instruments not in very good order, and he had no preserved lymph of any kind. He requires a new lancet. I saw some recent cases done by him, and the lymph in use appeared very good. From 1st January to 31st July his work was—

Total number vaccinated	569
Successful	497
From arm-to-arm	497
Under one year of age	142
Number of days on which work done	176

The rule is that 150 cases should be done monthly by this man, but he does not do so.

Paid probationer A. Dorasawmi Mudali has over three years' service, knows English, and appears a smart man. His register was well kept, but his instruments were not in very good order. His lancet was old, and he requires a new one. He also had no preserved lymph. From 1st January to 31st July his work was—

Total number vaccinated	273
Successful	245
From arm-to-arm	245
Under one year of age	94
Number of days on which work done	176

Mr. Apothecary Ashworth supervises the work of the vaccinators, and he states that the number of cases vaccinated have lately decreased, but that the quality of work turned out is much better. For two years (1880-81 and 1881-82) there had been no deaths from small-pox, but in 1882-83 there were 10. The Brahmin sub-inspector who used to assist the vaccinators does not now do so. A Sudra inspector goes round with them. Arm-to-arm vaccination is well carried on, but infantile vaccination is backward; thus from 1st January to 31st July only 236 cases were done under one year of age, while the births for the same period were 778; while at Kumbakónam some cases were done from an inoculated calf which the deputy inspector of vaccination had brought from Tanjore.

Registration of births and deaths.—Births from 1st January to 31st July 787 and deaths 778. Books are neatly kept and written up to date.

Cholera made its appearance in Kumbakónam on 1st August 1883. The first case which occurred was that of a young Pariah girl who resided in a small hamlet surrounded by paddy-fields in the southern part of the town. She had not been out of Kumbakónam, and no cause could be traced for her being attacked. The people in this hamlet derive their water-supply from the Arasillar river, but a channel runs beside the house where the girl lived, and it is very probable she drank this water. Before her attack she had partaken of fish and curry, and one of the inspectors stated that some of the fish which was being sold then was so bad that he had it condemned and buried.

The second case occurred close to the first, and then the disease began to spread principally in the southern part of the town. From 1st to 16th August there were thirteen attacks and nine deaths. No Brahmins were attacked at the time cholera was prevailing in some parts of the taluk.

Remarks.—This town, which is the educational centre of the Tanjore and southern districts, is very much in need of a good drainage scheme. The Vice-President stated that one has been proposed, and if it can be carried out the innumerable cesspools and stagnant pieces of water which are to be found all over the town can then be abolished.

The improvements which have taken place since last inspection have been the following:—Metalling, widening, and raising some roads; erection of seven temporary latrines; six more dust-bins built; the well at the side of the branch dispensary has been repaired for the use of the public; twelve rubbish and six cesspool carts have been entertained; sixteen more street toties and the introduction of private scavengering in three streets.

The proposed improvements are a drainage scheme, metalling some more roads, erection of more dust-bins, extra lamps, and the introduction of private scavengering for the whole town.

TANJORE MUNICIPALITY.

Inspected 18th, 20th and 21st August 1883.

Population per census of 1881—*males*, 26,272; *females*, 28,473; *total*, 54,745.

Roads.—Most of the roads are metalled, and in good order. In the fort many streets are narrow, badly ventilated, and not kept clean.

There are 216 dust-bins which are cleaned out daily. In place of these, which are too high and too deep, I would suggest some moveable ones.

All the refuse (street sweepings, night-soil, &c.) of the town is now given to a contractor, who in return supplies so many carts (forty) and removes it beyond the town. By this arrangement the municipality hopes to save about Rs. 360 per mensem. The night-soil depôt on date of my visit was not at all clean, and about the town a good many heaps of rubbish were to be seen. I think it would be better if cinerators were erected where the dry rubbish could be burnt, the ashes used to mix with the night-soil, buried, and then offered for sale.

Many of the hedges require cutting down, and in some few parts prickly-pear grows abundantly.

Drainage.—In the fort there are many masonry drains which are said to discharge either into the Vadavar river or fort ditch. The northern part of the fort ditch where the drains discharge was in a very dirty state; the sewage there accumulates, stagnates and does not seem to have any determined ending. Something should be done to remedy this and carry the sewage to fields beyond the town. It would be advisable to have the drains flushed occasionally. With the exception of the eastern part the whole of the fort ditch is given on contract for Rs. 1,800 per annum.

There are some cesspools which are daily emptied out.

Water-supply is obtained principally from tanks and wells. Three tanks are reserved for drinking purposes. In one division the people use the Vadavar river water. There are many private wells which have parapet walls, but no platforms which they should have.

In the fort there are some cisterns which contain drinking water at certain times of the year. These are, however, objectionable as the conduits run close to the drains and leakage between the two takes place. These cisterns should, I think, all be closed, as the water in them cannot be good.

Conservancy.—The establishment consists of 1 overseer, 4 inspectors, 12 maistries, 1 storekeeper, 12 peons, 72 sweepers, 34 toties, 11 watchmen and 1 water regulator.

There are 40 latrines, 26 being permanent and 14 temporary buildings. The permanent ones have still very wide doors of admittance allowing cows, &c., to enter.

There are many private latrines, and 876 are daily cleaned by the municipal servants on payment.

There are 195 kerosene-oil lamps, but more are required.

Slaughter-houses.—There are two—one in the northern and one in eastern parts of the town. They are not kept as clean as they should be, and they are built on a bad plan. The floors of these houses require repairing, and it would be well to build a new one on a good plan. About 100 animals are daily killed. These slaughter-houses are given on contract for Rs. 780 per annum.

Cremation and Burial-grounds.—There are two burning grounds and many burial-grounds. A burning and burial ground is situated on the banks of the Vadavar river just where the people go for their drinking water. This one should be removed and placed some way lower down the river.

Market.—There are two markets—one inside the fort for vegetables, and one outside for all things. They were clean on the date of my visit. The municipality realises a yearly income of nearly Rs. 5,000 from these markets. The large market seems to be becoming more popular, and a large iron tank and engine have been put up so that the drains are daily flushed and kept clean.

Vaccination.—Two vaccinators are employed by this municipality—one first class and one second class.

First-class vaccinator Pokala Guntiah Naidu has sixteen years' service, is an old man, knows no English, but seems an honest, hard-working man. His register (written in English by a friend) was kept neatly and up to date. Instruments in good order and had some preserved lymph between glasses. Some capillary tubes should be supplied to him.

Second-class vaccinator Murugasen Pillay has fifteen years' service, thirteen of which have been spent in the Tanjore municipality. He knows English well, but his work was not very satisfactory. His register was untidy and not correctly kept. Instruments in good order.

The work done in this municipality from 1st January to 31st July 1883 has been as follows:—

Name.	Total number vaccinated	Successful.	From arm-to-arm.	Under one year of age.	Number of days on which work done.
First-class vaccinator Pokala Guntiah Naidu	702	669	700	137	138
Second-class vaccinator Murugasen Pillay	441	409	438	61	113
Total ..	1,143	1,078	1,138	198	..

Cases are taken for inspection to the hospital every week, and occasionally the hospital assistant goes round with the vaccinators to see their cases, but he does not sign their registers. When cases are seen by the Civil Surgeon, one anna is given to each, but no extra batta when lymph is extracted, and I think it should be. The rule is that the first-class man must do 100 monthly and the second-class man 70. The vaccinators stated that there was great difficulty in getting subjects, as no assistance was given them. I would suggest that the municipality be divided into two vaccine circles, and that the commissioners be asked to see that all the unprotected in their divisions are vaccinated. Infantile vaccination is backward: thus for the seven months only 198 were done under one year of age, while the births for the same period were 613. There were six deaths from small-pox this year.

Registration of births and deaths.—Books neatly kept and written up to date. From 1st January to 31st July there were registered 594 births and 613 deaths. There have been no cases of cholera. Registration seems to be inaccurately kept however, thus during the past five years there have been 5,560 deaths and 5,507 births. The census for 1871 was 52,175 and for 1881, 54,745. From 1st April 1881 to 31st March 1883 there have been 2,297 deaths and 1,773 births.

Remarks.—The improvements which have taken place since last inspection have been—repairing and raising some streets, improving glacis opposite the hospital, strengthening the bank of the Panaicken voy, re-erecting the wall of the supply-channel near

whose houses are close to them but also to the passers by. They should all be condemned and more night-soil carts entertained. To enable the men to clean the privies of houses situated in narrow lanes, small hand-carts could be obtained.

Slaughter-houses.—There are two and are kept clean. The animals should, I think, be inspected first before being killed. The municipality derives a yearly income of Rs. 1,000 from these houses.

There are 220 kerosene-oil lamps, but more are to be put up.

Markets.—There is a large one in Negapatam, but many of the stalls facing outwards are still unlet. It was very clean when I visited it.

Vaccination.—This municipality employs two vaccinators—one first-class vaccinator and a second-class vaccinatrix.

First-class vaccinator N. Veerasawmy Naidu has nine years' service and knows English. His register was neatly kept and instruments in good order. From 1st January to 31st July his work was—

Total number vaccinated	622
Successful	569
Under one year of age	189
From arm-to-arm	480
Number of days on which work done	179

I saw one lymph subject done by this man, but the vesicles were not very good. He was on casual leave, and this was the reason he said he had no more cases to show me.

Second-class vaccinatrix Thungum has eleven years' service, about three of which have been spent in this municipality. As she cannot write well, her husband keeps her register, which was neatly written in vernacular. Her instruments were in good order. From 1st January to 31st July her work was—

Total number vaccinated	400
Successful	367
From arm-to-arm	218
Under one year of age	75
Number of days on which work done	178

This woman's work was unsatisfactory, and she could not show me any lymph subject. She stated that they had all proved unsuccessful. Her division is Nagore, but she will not reside there although directed to do so.

In this municipality vaccination is backward. In May last an order was passed that the first-class vaccinator must do 100 cases monthly and the second class 70, and since then vaccination has been improving. Batta is given to mothers when lymph is taken from their children's arms, but still arm-to-arm vaccination is backward. The vaccinator is very anxious that animal vaccination be started, and it might be tried for a few months. From 1st January to 31st July, 264 cases, under one year of age, were vaccinated, while the births for the same period were 585. I visited a few schools and found 54 vaccinated, 40 unprotected, and 39 marked.

Registration of births and deaths.—Three registrars are employed who have offices in the town. The nuisance inspectors also give information of the births and deaths that have taken place in their divisions. The books were neatly kept but unreliable. From 1st January to 31st July there were 585 births and 550 deaths. For the last five years the births have been 4,861 and deaths 5,452. There has been no cholera since March.

Remarks.—A great deal still requires to be done with regard to improving the water-supply, drainage, and disposal of sweepings and night-soil. I think cinerators should be built where the dry-rubbish might be burnt, the ashes used in the latrines and then taken and buried in Hathaway's park. The part of this park, which has been filled up, should be levelled and cultivated. If a piece of land could be obtained, the contents of the cesspools could be used to irrigate it.

The improvements which have taken place since last inspection are—the introduction of cleaning private latrines by the municipal toties, widening and raising some roads, making a drinking water tank and digging some wells, increase of conservancy establishment, building a new slaughter-house in Nagore, making a cart-stand, planting trees about the roads, and enclosing the market with a fence.

The proposed improvements are to build a pucka compound wall round the market and to make all the stalls face inwards, to increase the number of lamps, to raise some roads, build cinerators, have all cesspools made after one pattern, and to have an artesian well if possible.

The Vice-President proposes deepening and narrowing the Ooppanaur river and reclaiming the ground at each side of it. This would be a very great improvement.

I visited the two fish-curing yards and found them clean. No fish had been cured at the one at Numbiarcoopum for two days.

MADRAS, *22nd September* 1883. (Signed) J. A. LAING, Surgeon-Major, *and Inspector of Vaccination Deputy Sanitary Commissioner.*

No. 1420.

Endorsement on the above.

True copy forwarded for the information of Government.

MADRAS, *5th November* 1883. (Signed) M. C. FURNELL, M.D., F.R.C.S., *Sanitary Commissioner for Madras.*

ORDER—dated 15th November 1883, No. 2580, Financial.

Communicated to the President of the Municipalities concerned.

(True Extract.)

C. G. MASTER,
Chief Secretary.

To the President of the Municipal Commission, Máyavaram.
" " " " " Kumbakónam.
" " " " " Tanjore.
" " " " " Mannárgudi.
" " " " " Nagapatam.
" Sanitary Commissioner for Madras.
" Public Works department.

Exd. J. Wright.

No. 3434 dated 1st Dec.r/83

Communicated
to the S. E. 6th Circle for
information.
Sd/ C B.

Govt. of {1883} Madras.

FINANCIAL.

Issued

Recd. Encl.

G.O., 15th November 1883, No. 2580.

No 3434 dated 1st Dec.r/83.

NOVEMBER.

Municipal—Sanitary.

Communicating sanitary inspection notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Madras, on the municipalities in the Tanjore district.

S. E. 6th Circle

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

READ—the following paper :—

Sanitary Inspection Notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Tanjore district.

MAYAVARAM MUNICIPALITY.

INSPECTED 13TH AND 14TH AUGUST 1883.

Population per census of 1881—*males*, 11,304 ; *females*, 11,740 ; *total* 23,044.

Roads.—Only one road is metalled. The streets are kept clean and in good order. The dry rubbish is now taken to three depôts and annually sold.

There are 160 dust-bins, but a few more are necessary, and I would suggest moveable ones, a wooden-box with a lid but without a bottom is a good muster.

Drainage.—No regular system of drainage. Side channels have been cut in the main streets.

Water-supply is chiefly obtained from the Cauvery. There are many tanks, but four are now reserved for drinking purposes. These tanks should all be emptied and cleaned out this year. In many of the backyards there are wells, the water of which is used for drinking.

Conservancy.—The establishment consists of 1 nuisance inspector, 2 sub-inspectors, 9 peons, 18 sweepers, 7 toties, 3 tank watchmen, 17 rubbish and 3 night-soil carts.

There are eleven temporary latrines, but they are very little used. The private latrines are few in number, and they are cleaned by the municipal toties on payment.

There is no municipal slaughter-house, and the killing of animals is done in a small open space. It was clean on the date of my visit. From six to eight animals are daily slaughtered.

The town is lighted by 110 kerosene-oil lamps.

Markets.—There is a municipal vegetable one, which was clean when I visited it. It is given on contract for Rs. 300 per annum. There is also a small private fish market, and it is kept clean.

The cremation grounds are on the banks of the Cauvery between the two villages. The burial-grounds are very few, some are enclosed and some not, but all should be.

Vaccination.—This municipality employs one first-class vaccinator.

First-class vaccinator T. Muthuvalu Mudaliar has fifteen years' service and knows English. As he was very ill when I was at Máyavaram I saw no lymph cases. His register was neatly kept and his instruments in good order. Batta is given to mothers when lymph is extracted from their children's arms.

This vaccinator's work from 1st January to 31st July is —

Total number vaccinated	676
Successful	604
Total number vaccinated under one year	236
Total number vaccinated from arm-to-arm	399
Number of days on which work done	180

The rule is that a hundred cases must be done monthly, and to enable the vaccinator to do this he is allowed to vaccinate in villages near. As the average monthly

rate of Máyavaram is between 66 and 70 the vaccinator complained that he could not do a hundred. I visited five pial schools and found vaccinated 35, unprotected 34, small-pox 25. In the municipal schools most of the children are protected.

Registration of births and deaths.—The three inspectors are supplied with cheque books, and the returns are compiled in the municipal office by a clerk. The books were neatly kept and written up to date. From 1st January to 31st July there were 423 births and 392 deaths.

Cholera.—From 4th January to 29th July of this year cholera prevailed more or less in Máyavaram. No cause could be traced for its origin, and there was no history of importation. There were 49 deaths and 171 attacks. It prevailed most in Komad division and in the western street of Máyavaram temple. In these two parts people obtain their water from tanks, which only lately have been thoroughly reserved for drinking purposes. After the tanks were reserved the civil apothecary states that the number of cases began to diminish. The people attacked were chiefly weavers and fishermen. No cases of cholera occurred among the Brahmins who drink the river water.

Remarks.—Máyavaram is on the whole a clean, well-kept town. All the tanks reserved for drinking purposes should be emptied and cleaned out this year.

The improvements which have taken place since last inspection have been, viz., repairing roads; building another ward to Webster hospital; extending hospital compound and filling up all the holes in it; building another shed in the market and filling up the small tank close to it; the erection of temporary latrines, reserving some tanks for drinking purposes, and the introduction of cleaning private latrines by municipal servants on payment.

The proposed improvements are to metal another main road, to erect three more latrines (one in the municipal school compound, one in the hospital compound, and one in the eastern part of the town) and to have another night-soil cart.

KUMBAKONAM MUNICIPALITY.

Inspected 15th, 16th, and 17th August 1883.

Population per census of 1881—*males*, 24,397; *females*, 25,701; *total*, 50,098.

Roads.—Main roads metalled, and in good order. They are kept clean and the rubbish is taken to a depôt out of the town where it is stored and annually sold. Last year Rs. 80-13-0 were realized from the sale of the street sweepings. There are no cinerators. Many of the backyards are kept in a very dirty state.

The dust-bins are 413 in number, and as more are to be built, I would suggest moveable ones, a wooden-box with a lid but without a bottom.

Drainage.—No regular system of drainage. Most of the streets have side cuttings.

There are numerous cesspools which are daily cleaned out by the municipal servants. The Vice-President says these cesspools are increasing in number, as the people do not now allow their house drains, &c., to discharge into their backyards or compounds.

Water-supply is obtained from the Cauvery and Arasillar rivers chiefly. There are many tanks in the town, the water of which is both used for drinking, bathing, &c. One tank is reserved for drinking purposes. There are a few public and many private wells used for obtaining drinking water. The supply is abundant. Two watchmen look after the rivers and see the banks are not polluted, and two guard the tanks.

Conservancy.—The establishment consists of 4 inspectors, 6 peons, 4 watchmen (2 for rivers and 2 for tanks), 36 sweepers, 19 latrine toties, 34 street toties, 36 rubbish, 18 cesspool and 12 night-soil carts.

There are 26 public latrines, which are cleaned twice daily. The private latrines are numerous, and the municipal servants clean only about 60, which are situated in three streets. It would be well if the municipality undertook the cleaning of all private latrines daily, as many of the backyards are kept in a dirty state. The night-soil is taken out of the town and buried in pits. There is no sale for it, although the Vice-President states he has shown its value as manure by using it in the Municipal

office compound. As so little is realized from the sale of the street sweepings, I think a few cinerators might be built to burn all the dry rubbish and the ashes used in the latrines. If a municipal garden could be started the manure could then be used in it.

There are 162 kerosene-oil lamps, but more are required.

Slaughter-house.—There is one slaughter-house which is kept very clean. The average number daily killed is 45, and last year Rs. 420-4-0 were realized from the slaughter-house. The "fee collector" is supposed to examine animals before they are killed.

There is no municipal market, and it is very doubtful if one would pay, as a convenient site is not available.

Cremation and Burial-grounds.—There are three burning-grounds, the principal one is situated on the north bank of the Cauvery, is enclosed partly by a wall, and is kept clean.

There are five Muhammadan burial-grounds in the town, and all should be enclosed. Some are to be closed, as they are objectionable.

Vaccination.—Two vaccinators are employed by this municipality—one first class and one paid probationer.

First-class vaccinator M. Sundrum Pillay has five years' service, knows English slightly. His register was neatly kept and written up to date. Instruments not in very good order, and he had no preserved lymph of any kind. He requires a new lancet. I saw some recent cases done by him, and the lymph in use appeared very good. From 1st January to 31st July his work was—

Total number vaccinated	569
Successful	497
From arm-to-arm	497
Under one year of age	142
Number of days on which work done	176

The rule is that 150 cases should be done monthly by this man, but he does not do so.

Paid probationer A. Dorasawmi Mudali has over three years' service, knows English, and appears a smart man. His register was well kept, but his instruments were not in very good order. His lancet was old, and he requires a new one. He also had no preserved lymph. From 1st January to 31st July his work was—

Total number vaccinated	273
Successful	245
From arm-to-arm	245
Under one year of age	94
Number of days on which work done	176

Mr. Apothecary Ashworth supervises the work of the vaccinators, and he states that the number of cases vaccinated have lately decreased, but that the quality of work turned out is much better. For two years (1880-81 and 1881-82) there had been no deaths from small-pox, but in 1882-83 there were 10. The Brahmin sub-inspector who used to assist the vaccinators does not now do so. A Sudra inspector goes round with them. Arm-to-arm vaccination is well carried on, but infantile vaccination is backward; thus from 1st January to 31st July only 236 cases were done under one year of age, while the births for the same period were 778; while at Kumbakónam some cases were done from an inoculated calf which the deputy inspector of vaccination had brought from Tanjore.

Registration of births and deaths.—Births from 1st January to 31st July 787 and deaths 778. Books are neatly kept and written up to date.

Cholera made its appearance in Kumbakónam on 1st August 1883. The first case which occurred was that of a young Pariah girl who resided in a small hamlet surrounded by paddy-fields in the southern part of the town. She had not been out of Kumbakónam, and no cause could be traced for her being attacked. The people in this hamlet derive their water-supply from the Arasillar river, but a channel runs beside the house where the girl lived, and it is very probable she drank this water. Before her attack she had partaken of fish and curry, and one of the inspectors stated that some of the fish which was being sold then was so bad that he had it condemned and buried.

The second case occurred close to the first, and then the disease began to spread principally in the southern part of the town. From 1st to 16th August there were thirteen attacks and nine deaths. No Brahmins were attacked at the time cholera was prevailing in some parts of the taluk.

Remarks.—This town, which is the educational centre of the Tanjore and southern districts, is very much in need of a good drainage scheme. The Vice-President stated that one has been proposed, and if it can be carried out the innumerable cesspools and stagnant pieces of water which are to be found all over the town can then be abolished.

The improvements which have taken place since last inspection have been the following:—Metalling, widening, and raising some roads; erection of seven temporary latrines; six more dust-bins built; the well at the side of the branch dispensary has been repaired for the use of the public; twelve rubbish and six cesspool carts have been entertained; sixteen more street toties and the introduction of private scavengering in three streets.

The proposed improvements are a drainage scheme, metalling some more roads, erection of more dust-bins, extra lamps, and the introduction of private scavengering for the whole town.

TANJORE MUNICIPALITY.

Inspected 18th, 20th and 21st August 1883.

Population per census of 1881—*males*, 26,272; *females*, 28,473; *total*, 54,745.

Roads.—Most of the roads are metalled, and in good order. In the fort many streets are narrow, badly ventilated, and not kept clean.

There are 216 dust-bins which are cleaned out daily. In place of these, which are too high and too deep, I would suggest some moveable ones.

All the refuse (street sweepings, night-soil, &c.) of the town is now given to a contractor, who in return supplies so many carts (forty) and removes it beyond the town. By this arrangement the municipality hopes to save about Rs. 360 per mensem. The night-soil depôt on date of my visit was not at all clean, and about the town a good many heaps of rubbish were to be seen. I think it would be better if cinerators were erected where the dry rubbish could be burnt, the ashes used to mix with the night-soil, buried, and then offered for sale.

Many of the hedges require cutting down, and in some few parts prickly-pear grows abundantly.

Drainage.—In the fort there are many masonry drains which are said to discharge either into the Vadavar river or fort ditch. The northern part of the fort ditch where the drains discharge was in a very dirty state; the sewage there accumulates, stagnates and does not seem to have any determined ending. Something should be done to remedy this and carry the sewage to fields beyond the town. It would be advisable to have the drains flushed occasionally. With the exception of the eastern part the whole of the fort ditch is given on contract for Rs. 1,800 per annum.

There are some cesspools which are daily emptied out.

Water-supply is obtained principally from tanks and wells. Three tanks are reserved for drinking purposes. In one division the people use the Vadavar river water. There are many private wells which have parapet walls, but no platforms which they should have.

In the fort there are some cisterns which contain drinking water at certain times of the year. These are, however, objectionable as the conduits run close to the drains and leakage between the two takes place. These cisterns should, I think, all be closed, as the water in them cannot be good.

Conservancy.—The establishment consists of 1 overseer, 4 inspectors, 12 maistries, 1 storekeeper, 12 peons, 72 sweepers, 34 toties, 11 watchmen and 1 water regulator.

There are 40 latrines, 26 being permanent and 14 temporary buildings. The permanent ones have still very wide doors of admittance allowing cows, &c., to enter.

There are many private latrines, and 876 are daily cleaned by the municipal servants on payment.

There are 195 kerosene-oil lamps, but more are required.

Slaughter-houses.—There are two—one in the northern and one in eastern parts of the town. They are not kept as clean as they should be, and they are built on a bad plan. The floors of these houses require repairing, and it would be well to build a new one on a good plan. About 100 animals are daily killed. These slaughter-houses are given on contract for Rs. 780 per annum.

Cremation and Burial-grounds.—There are two burning grounds and many burial-grounds. A burning and burial ground is situated on the banks of the Vadavar river just where the people go for their drinking water. This one should be removed and placed some way lower down the river.

Market.—There are two markets—one inside the fort for vegetables, and one outside for all things. They were clean on the date of my visit. The municipality realises a yearly income of nearly Rs. 5,000 from these markets. The large market seems to be becoming more popular, and a large iron tank and engine have been put up so that the drains are daily flushed and kept clean.

Vaccination.—Two vaccinators are employed by this municipality—one first class and one second class.

First-class vaccinator Pokala Guntiah Naidu has sixteen years' service, is an old man, knows no English, but seems an honest, hard-working man. His register (written in English by a friend) was kept neatly and up to date. Instruments in good order and had some preserved lymph between glasses. Some capillary tubes should be supplied to him.

Second-class vaccinator Murugasen Pillay has fifteen years' service, thirteen of which have been spent in the Tanjore municipality. He knows English well, but his work was not very satisfactory. His register was untidy and not correctly kept. Instruments in good order.

The work done in this municipality from 1st January to 31st July 1883 has been as follows:—

Name.	Total number vaccinated	Successful.	From arm-to-arm.	Under one year of age.	Number of days on which work done.
First-class vaccinator Pokala Guntiah Naidu	702	669	700	137	138
Second-class vaccinator Murugasen Pillay	441	409	438	61	113
Total ..	1,143	1,078	1,138	198	..

Cases are taken for inspection to the hospital every week, and occasionally the hospital assistant goes round with the vaccinators to see their cases, but he does not sign their registers. When cases are seen by the Civil Surgeon, one anna is given to each, but no extra batta when lymph is extracted, and I think it should be. The rule is that the first-class man must do 100 monthly and the second-class man 70. The vaccinators stated that there was great difficulty in getting subjects, as no assistance was given them. I would suggest that the municipality be divided into two vaccine circles, and that the commissioners be asked to see that all the unprotected in their divisions are vaccinated. Infantile vaccination is backward: thus for the seven months only 198 were done under one year of age, while the births for the same period were 613. There were six deaths from small-pox this year.

Registration of births and deaths.—Books neatly kept and written up to date. From 1st January to 31st July there were registered 594 births and 613 deaths. There have been no cases of cholera. Registration seems to be inaccurately kept however, thus during the past five years there have been 5,560 deaths and 5,507 births. The census for 1871 was 52,175 and for 1881, 54,745. From 1st April 1881 to 31st March 1883 there have been 2,297 deaths and 1,773 births.

Remarks.—The improvements which have taken place since last inspection have been—repairing and raising some streets, improving glacis opposite the hospital, strengthening the bank of the Panaicken voy, re-erecting the wall of the supply-channel near

the Lutheran Mission tank, making a masonry channel from the old court-house tunnel to the fort ditch, whitewashing the big market and erecting at one corner of it an iron tank and engine, building another shed in the fish market, cutting a surface drainage channel in west rampart street, building some dust-bins and demolishing others, repairing and tarring latrines, erecting sheds for the toties, and constructing a drain opposite the big market.

The proposed improvements are to demolish the southern rampart wall of the fort and to fill up this part of the ditch. If this were done, it would be a great improvement as the streets in this part of the fort are very badly ventilated. It is also intended to build a new slaughter-house, and this is much required. The cisterns and conduits in the fort are to be repaired, but I think it would be better if they were closed altogether. Some tanks are to be repaired, three more latrines are to be erected, some streets are to be raised, and a few new drains are to be made.

MANNARGUDI MUNICIPALITY.

Inspected 22nd and 23rd August 1883.

Population per census of 1881—*males*, 9,424 ; *females*, 9,985 ; *total*, 19,409.

Roads.—Only two roads are metalled. They are in a bad state of repair. The streets are kept clean and the dry rubbish used to fill up holes, &c. Formerly the street sweepings were taken to depôts where it has accumulated, as there is no sale for them.

There are 50 dust-bins—20 being pucka built, and 30 temporary wooden ones. More moveable ones are required, and I would suggest a wooden box with a lid but without a bottom.

Drainage.—None. There are about 20 cesspools which are daily cleaned out by the municipal servants. The drainage of many of the backyards is defective, and so some new roads have been opened out between the backyards of the houses to enable the sweepers to clean them.

Water-supply—from tanks, river, and a few wells. Three tanks are reserved for drinking purposes. Two wells are used to get drinking water from. Most of the tanks should be emptied and cleaned out this year.

Conservancy.—The establishment consists of 3 inspectors, 6 maistries, 7 tank watchmen, 4 toties, 12 channel coolies, 24 sweepers, 12 rubbish and 2 cesspool carts.

There are 11 latrines—2 permanent and 9 temporary. They are very little used. The night-soil is buried in pits close to the latrines.

There are many private latrines which are cleaned by the owners.

There are 150 kerosene-oil lamps, but more are to be put up.

Market.—A suitable site has been chosen where the weekly market is held. Some sheds have been put up. A tank has been made, and it is intended to have this piece of ground enclosed. There are two small markets—one for fish and one for meat, and both were very clean on the date of my visit.

Cremation and Burial grounds.—There are four burning-grounds and all are situated near the river. The burial-grounds are two—one Christian and one Muhammadan ; both are enclosed.

Vaccination.—One first-class vaccinator is employed. First-class vaccinator Ranojee Row has over nine years' service, knows English, and for the last five months his work has been supervised by the assistant apothecary. Register neatly kept and instruments in good order. His work from 1st January to 31st July was—

Total number vaccinated	388
Successful	354
From arm-to-arm	280
Under one year of age	99
Number of days on which work done	177

I saw some recent cases done by this man and the lymph in use appeared good. He is required to do 50 monthly, but lately he has been doing more, and he gets assistance from the nuisance inspectors. Infantile vaccination is backward, thus from 1st January to 31st July only 99 cases were done under one year of age, while the births for the same period were 301.

Registration of births and deaths.—Books neatly kept and written up to date. From 1st January to 31st July there were 301 births and 281 deaths. There have been no cases of cholera since February. For two years there have been no deaths from small-pox.

Remarks.—This municipality is on the whole kept clean. The improvements which have taken place since last inspection have been—erecting more dust-bins, putting up six tatty latrines, increase of the conservancy establishment and extra lamps, remetalling the main road and repairing others, repairing tanks and wells, opening up of six lanes between the backyards of houses, making new streets, commencement of a municipal market, and opening a branch dispensary in the town.

The proposed improvements are—to metal another road, to erect a masonry building for the cremation of bodies, to increase the number of dust-bins, to build a cinerator, to get an engine so that all the tanks may be annually emptied, to open up more lanes with a view to having all private latrines cleaned by the municipal toties, to complete the municipal market, to start a municipal garden for utilising the street sweepings and night-soil, and to put up more lamp-posts.

NEGAPATAM MUNICIPALITY.

Inspected 24th, 25th, and 27th August 1883.

Population per census of 1881—*males*, 24,305 ; *females*, 29,550 ; *total*, 53,855.

Roads.—Only a few roads are metalled and they are in a bad state of repair. The main streets are clean, but the smaller ones are not, and they are used as latrines. The street sweepings of Negapatam are carted to Hathaway's park, and those of Nagore to two places, just outside the town. There was no sale for them this year. Many of the backyards were in a very dirty state.

There are 527 dust-bins, all pucka built. More are required, especially in Nagore, and I would suggest moveable ones.

Drainage.—None. There are about 712 cesspools of various sizes and patterns. They are cleaned out once in every two or three days by the municipal servants gratuitously. The contents of these cesspools are carted to Hathaway's park, the sea, and to a ditch in Nagore. The cesspools, if possible, should all be of one pattern, and I would suggest a pucka cistern with a bucket in it and that they be emptied *daily*.

Water-supply—from tanks and wells. Six tanks are reserved for drinking purposes, and occasionally they are emptied and cleaned.

There are seventy-seven wells from which drinking water is obtained ; most have parapet walls and platforms, but some require repairing, and all should be provided with drains to carry off the waste water.

Drinking water is also obtained during the north-east monsoon from the Ooppanaur river which runs along the west of the town from north to south. The supply cannot be said to be good, as it is subject to numerous defilements in its course, and the banks are largely used as latrines.

Conservancy.—The establishment consists of 5 nuisance inspectors, 15 peons, 92 scavengers, six tank watchmen, 1 toty maistry, 1 engine cooly, 15 rubbish, 12 sewage, and 8 night-soil carts. The staff is not sufficient. The scavengers, night-soil and sewage carts should be increased.

There are eighteen pucka built latrines—seventeen being in Negapatam and one in Nagore. There are also five temporary latrines, but they are out of repair. Sand, not dry-earth, is used in the latrines, and the night-soil is taken to Hathaway's park and to a field in Nagore. There is no sale for it.

About 1,000 private latrines are cleaned by the municipal toties on payment, and it would be well if all were so done.

To facilitate the cleaning out of these latrines, some iron boxes (twenty-four in number) have been placed at the corners of streets. The night-soil is deposited in them, and when the carts (eight in number) pass, they are emptied. As these boxes are not air-tight and many are in a bad state of repair, they are not only a nuisance to the people

whose houses are close to them but also to the passers by. They should all be condemned and more night-soil carts entertained. To enable the men to clean the privies of houses situated in narrow lanes, small hand-carts could be obtained.

Slaughter-houses.—There are two and are kept clean. The animals should, I think, be inspected first before being killed. The municipality derives a yearly income of Rs. 1,000 from these houses.

There are 220 kerosene-oil lamps, but more are to be put up.

Markets.—There is a large one in Negapatam, but many of the stalls facing outwards are still unlet. It was very clean when I visited it.

Vaccination.—This municipality employs two vaccinators—one first-class vaccinator and a second-class vaccinatrix.

First-class vaccinator N. Veerasawmy Naidu has nine years' service and knows English. His register was neatly kept and instruments in good order. From 1st January to 31st July his work was—

Total number vaccinated	622
Successful	569
Under one year of age	189
From arm-to-arm	480
Number of days on which work done	179

I saw one lymph subject done by this man, but the vesicles were not very good. He was on casual leave, and this was the reason he said he had no more cases to show me.

Second-class vaccinatrix Thungum has eleven years' service, about three of which have been spent in this municipality. As she cannot write well, her husband keeps her register, which was neatly written in vernacular. Her instruments were in good order. From 1st January to 31st July her work was—

Total number vaccinated	400
Successful	367
From arm-to-arm	218
Under one year of age	75
Number of days on which work done	178

This woman's work was unsatisfactory, and she could not show me any lymph subject. She stated that they had all proved unsuccessful. Her division is Nagore, but she will not reside there although directed to do so.

In this municipality vaccination is backward. In May last an order was passed that the first-class vaccinator must do 100 cases monthly and the second class 70, and since then vaccination has been improving. Batta is given to mothers when lymph is taken from their children's arms, but still arm-to-arm vaccination is backward. The vaccinator is very anxious that animal vaccination be started, and it might be tried for a few months. From 1st January to 31st July, 264 cases, under one year of age, were vaccinated, while the births for the same period were 585. I visited a few schools and found 54 vaccinated, 40 unprotected, and 39 marked.

Registration of births and deaths.—Three registrars are employed who have offices in the town. The nuisance inspectors also give information of the births and deaths that have taken place in their divisions. The books were neatly kept but unreliable. From 1st January to 31st July there were 585 births and 550 deaths. For the last five years the births have been 4,861 and deaths 5,452. There has been no cholera since March.

Remarks.—A great deal still requires to be done with regard to improving the water-supply, drainage, and disposal of sweepings and night-soil. I think cinerators should be built where the dry-rubbish might be burnt, the ashes used in the latrines and then taken and buried in Hathaway's park. The part of this park, which has been filled up, should be levelled and cultivated. If a piece of land could be obtained, the contents of the cesspools could be used to irrigate it.

The improvements which have taken place since last inspection are—the introduction of cleaning private latrines by the municipal toties, widening and raising some roads, making a drinking water tank and digging some wells, increase of conservancy establishment, building a new slaughter-house in Nagore, making a cart-stand, planting trees about the roads, and enclosing the market with a fence.

The proposed improvements are to build a pucka compound wall round the market and to make all the stalls face inwards, to increase the number of lamps, to raise some roads, build cinerators, have all cesspools made after one pattern, and to have an artesian well if possible.

The Vice-President proposes deepening and narrowing the Ooppanaur river and reclaiming the ground at each side of it. This would be a very great improvement.

I visited the two fish-curing yards and found them clean. No fish had been cured at the one at Numbiarcoopum for two days.

MADRAS,
22*nd September* 1883.

(Signed) J. A. LAING, Surgeon-Major,
and Inspector of Vaccination
Deputy Sanitary Commissioner.

No. 1420.

Endorsement on the above.

True copy forwarded for the imformation of Government.

MADRAS,
5*th November* 1883.

(Signed) M. C. FURNELL, M.D., F.R.C.S.,
Sanitary Commissioner for Madras.

ORDER—dated 15th November 1883, No. 2580, Financial.

Communicated to the President of the Municipalities concerned.

(True Extract.)

C. G. MASTER,
Chief Secretary.

To the President of the Municipal Commission, Máyavaram.
" " " " " Kumbakónam.
" " " " " Tanjore.
" " " " " Mannárgudi.
" " " " " Nagapatam.
" Sanitary Commissioner for Madras.
" Public Works department.

Exd. J. Wright.

No 3434 w.a.f. 1st Dec/83

Communicated
to the S.G 6th Circle
for information
D.f. OB

Govt. of {1883} Madras.

FINANCIAL.

Issued

Recd. Encl.

G.O., 15th November 1883, No. 2580.

No 3434 w.a.f. 1st Dec/83

NOVEMBER.

Municipal—Sanitary.

Communicating sanitary inspection notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Madras, on the municipalities in the Tanjore district.

Sd. 6th Circle

Withinder

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

Read—the following paper:—

Sanitary Inspection Notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Tanjore district.

MAYAVARAM MUNICIPALITY.

Inspected 13th and 14th August 1883.

Population per census of 1881—*males*, 11,304; *females*, 11,740; *total* 23,044.

Roads.—Only one road is metalled. The streets are kept clean and in good order. The dry rubbish is now taken to three depôts and annually sold.

There are 160 dust-bins, but a few more are necessary, and I would suggest moveable ones, a wooden-box with a lid but without a bottom is a good muster.

Drainage.—No regular system of drainage. Side channels have been cut in the main streets.

Water-supply is chiefly obtained from the Cauvery. There are many tanks, but four are now reserved for drinking purposes. These tanks should all be emptied and cleaned out this year. In many of the backyards there are wells, the water of which is used for drinking.

Conservancy.—The establishment consists of 1 nuisance inspector, 2 sub-inspectors, 9 peons, 18 sweepers, 7 toties, 3 tank watchmen, 17 rubbish and 3 night-soil carts.

There are eleven temporary latrines, but they are very little used. The private latrines are few in number, and they are cleaned by the municipal toties on payment.

There is no municipal slaughter-house, and the killing of animals is done in a small open space. It was clean on the date of my visit. From six to eight animals are daily slaughtered.

The town is lighted by 110 kerosene-oil lamps.

Markets.—There is a municipal vegetable one, which was clean when I visited it. It is given on contract for Rs. 300 per annum. There is also a small private fish market, and it is kept clean.

The cremation grounds are on the banks of the Cauvery between the two villages. The burial-grounds are very few, some are enclosed and some not, but all should be.

Vaccination.—This municipality employs one first-class vaccinator.

First-class vaccinator T. Muthuvalu Mudaliar has fifteen years' service and knows English. As he was very ill when I was at Máyavaram I saw no lymph cases. His register was neatly kept and his instruments in good order. Batta is given to mothers when lymph is extracted from their children's arms.

This vaccinator's work from 1st January to 31st July is —

Total number vaccinated	676
Successful	604
Total number vaccinated under one year	236
Total number vaccinated from arm-to-arm	399
Number of days on which work done	180

The rule is that a hundred cases must be done monthly, and to enable the vaccinator to do this he is allowed to vaccinate in villages near. As the average monthly

rate of Máyavaram is between 66 and 70 the vaccinator complained that he could not do a hundred. I visited five pial schools and found vaccinated 35, unprotected 34, small-pox 25. In the municipal schools most of the children are protected.

Registration of births and deaths.—The three inspectors are supplied with cheque books, and the returns are compiled in the municipal office by a clerk. The books were neatly kept and written up to date. From 1st January to 31st July there were 423 births and 392 deaths.

Cholera.—From 4th January to 29th July of this year cholera prevailed more or less in Máyavaram. No cause could be traced for its origin, and there was no history of importation. There were 49 deaths and 171 attacks. It prevailed most in Komad division and in the western street of Máyavaram temple. In these two parts people obtain their water from tanks, which only lately have been thoroughly reserved for drinking purposes. After the tanks were reserved the civil apothecary states that the number of cases began to diminish. The people attacked were chiefly weavers and fishermen. No cases of cholera occurred among the Brahmins who drink the river water.

Remarks.—Máyavaram is on the whole a clean, well-kept town. All the tanks reserved for drinking purposes should be emptied and cleaned out this year.

The improvements which have taken place since last inspection have been, viz., repairing roads; building another ward to Webster hospital; extending hospital compound and filling up all the holes in it; building another shed in the market and filling up the small tank close to it; the erection of temporary latrines, reserving some tanks for drinking purposes, and the introduction of cleaning private latrines by municipal servants on payment.

The proposed improvements are to metal another main road, to erect three more latrines (one in the municipal school compound, one in the hospital compound, and one in the eastern part of the town) and to have another night-soil cart.

KUMBAKONAM MUNICIPALITY.

Inspected 15th, 16th, and 17th August 1883.

Population per census of 1881—*males*, 24,397; *females*, 25,701; *total*, 50,098.

Roads.—Main roads metalled, and in good order. They are kept clean and the rubbish is taken to a depôt out of the town where it is stored and annually sold. Last year Rs. 80-13-0 were realized from the sale of the street sweepings. There are no cinerators. Many of the backyards are kept in a very dirty state.

The dust-bins are 413 in number, and as more are to be built, I would suggest moveable ones, a wooden-box with a lid but without a bottom.

Drainage.—No regular system of drainage. Most of the streets have side cuttings.

There are numerous cesspools which are daily cleaned out by the municipal servants. The Vice-President says these cesspools are increasing in number, as the people do not now allow their house drains, &c., to discharge into their backyards or compounds.

Water-supply is obtained from the Cauvery and Arasillar rivers chiefly. There are many tanks in the town, the water of which is both used for drinking, bathing, &c. One tank is reserved for drinking purposes. There are a few public and many private wells used for obtaining drinking water. The supply is abundant. Two watchmen look after the rivers and see the banks are not polluted, and two guard the tanks.

Conservancy.—The establishment consists of 4 inspectors, 6 peons, 4 watchmen (2 for rivers and 2 for tanks), 36 sweepers, 19 latrine toties, 34 street toties, 36 rubbish, 18 cesspool and 12 night-soil carts.

There are 26 public latrines, which are cleaned twice daily. The private latrines are numerous, and the municipal servants clean only about 60, which are situated in three streets. It would be well if the municipality undertook the cleaning of all private latrines daily, as many of the backyards are kept in a dirty state. The night-soil is taken out of the town and buried in pits. There is no sale for it, although the Vice-President states he has shown its value as manure by using it in the Municipal office compound. As so little is realized from the sale of the street sweepings, I think a few cinerators might be built to burn all the dry rubbish and the ashes used in the latrines. If a municipal garden could be started the manure could then be used in it.

There are 162 kerosene-oil lamps, but more are required.

Slaughter-house.—There is one slaughter-house which is kept very clean. The average number daily killed is 45, and last year Rs. 420-4-0 were realized from the slaughter-house. The "fee collector" is supposed to examine animals before they are killed.

There is no municipal market, and it is very doubtful if one would pay, as a convenient site is not available.

Cremation and Burial-grounds.—There are three burning-grounds, the principal one is situated on the north bank of the Cauvery, is enclosed partly by a wall, and is kept clean.

There are five Muhammadan burial-grounds in the town, and all should be enclosed. Some are to be closed, as they are objectionable.

Vaccination.—Two vaccinators are employed by this municipality—one first class and one paid probationer.

First-class vaccinator M. Sundrum Pillay has five years' service, knows English slightly. His register was neatly kept and written up to date. Instruments not in very good order, and he had no preserved lymph of any kind. He requires a new lancet. I saw some recent cases done by him, and the lymph in use appeared very good. From 1st January to 31st July his work was—

Total number vaccinated	569
Successful	497
From arm-to-arm	497
Under one year of age	142
Number of days on which work done	176

The rule is that 150 cases should be done monthly by this man, but he does not do so.

Paid probationer A. Dorasawmi Mudali has over three years' service, knows English, and appears a smart man. His register was well kept, but his instruments were not in very good order. His lancet was old, and he requires a new one. He also had no preserved lymph. From 1st January to 31st July his work was—

Total number vaccinated	273
Successful	245
From arm-to-arm	245
Under one year of age	94
Number of days on which work done	176

Mr. Apothecary Ashworth supervises the work of the vaccinators, and he states that the number of cases vaccinated have lately decreased, but that the quality of work turned out is much better. For two years (1880-81 and 1881-82) there had been no deaths from small-pox, but in 1882-83 there were 10. The Brahmin sub-inspector who used to assist the vaccinators does not now do so. A Sudra inspector goes round with them. Arm-to-arm vaccination is well carried on, but infantile vaccination is backward; thus from 1st January to 31st July only 236 cases were done under one year of age, while the births for the same period were 778; while at Kumbakónam some cases were done from an inoculated calf which the deputy inspector of vaccination had brought from Tanjore.

Registration of births and deaths.—Births from 1st January to 31st July 787 and deaths 778. Books are neatly kept and written up to date.

Cholera made its appearance in Kumbakónam on 1st August 1883. The first case which occurred was that of a young Pariah girl who resided in a small hamlet surrounded by paddy-fields in the southern part of the town. She had not been out of Kumbakónam, and no cause could be traced for her being attacked. The people in this hamlet derive their water-supply from the Arasillar river, but a channel runs beside the house where the girl lived, and it is very probable she drank this water. Before her attack she had partaken of fish and curry, and one of the inspectors stated that some of the fish which was being sold then was so bad that he had it condemned and buried.

The second case occurred close to the first, and then the disease began to spread principally in the southern part of the town. From 1st to 16th August there were thirteen attacks and nine deaths. No Brahmins were attacked at the time cholera was prevailing in some parts of the taluk.

Remarks.—This town, which is the educational centre of the Tanjore and southern districts, is very much in need of a good drainage scheme. The Vice-President stated that one has been proposed, and if it can be carried out the innumerable cesspools and stagnant pieces of water which are to be found all over the town can then be abolished.

The improvements which have taken place since last inspection have been the following:—Metalling, widening, and raising some roads; erection of seven temporary latrines; six more dust-bins built; the well at the side of the branch dispensary has been repaired for the use of the public; twelve rubbish and six cesspool carts have been entertained; sixteen more street toties and the introduction of private scavengering in three streets.

The proposed improvements are a drainage scheme, metalling some more roads, erection of more dust-bins, extra lamps, and the introduction of private scavengering for the whole town.

TANJORE MUNICIPALITY.

INSPECTED 18TH, 20TH AND 21ST AUGUST 1883.

Population per census of 1881—*males*, 26,272; *females*, 28,473; *total*, 54,745.

Roads.—Most of the roads are metalled, and in good order. In the fort many streets are narrow, badly ventilated, and not kept clean.

There are 216 dust-bins which are cleaned out daily. In place of these, which are too high and too deep, I would suggest some moveable ones.

All the refuse (street sweepings, night-soil, &c.) of the town is now given to a contractor, who in return supplies so many carts (forty) and removes it beyond the town. By this arrangement the municipality hopes to save about Rs. 360 per mensem. The night-soil depôt on date of my visit was not at all clean, and about the town a good many heaps of rubbish were to be seen. I think it would be better if cinerators were erected where the dry rubbish could be burnt, the ashes used to mix with the night-soil, buried, and then offered for sale.

Many of the hedges require cutting down, and in some few parts prickly-pear grows abundantly.

Drainage.—In the fort there are many masonry drains which are said to discharge either into the Vadavar river or fort ditch. The northern part of the fort ditch where the drains discharge was in a very dirty state; the sewage there accumulates, stagnates and does not seem to have any determined ending. Something should be done to remedy this and carry the sewage to fields beyond the town. It would be advisable to have the drains flushed occasionally. With the exception of the eastern part the whole of the fort ditch is given on contract for Rs. 1,800 per annum.

There are some cesspools which are daily emptied out.

Water-supply is obtained principally from tanks and wells. Three tanks are reserved for drinking purposes. In one division the people use the Vadavar river water. There are many private wells which have parapet walls, but no platforms which they should have.

In the fort there are some cisterns which contain drinking water at certain times of the year. These are, however, objectionable as the conduits run close to the drains and leakage between the two takes place. These cisterns should, I think, all be closed, as the water in them cannot be good.

Conservancy.—The establishment consists of 1 overseer, 4 inspectors, 12 maistries, 1 storekeeper, 12 peons, 72 sweepers, 34 toties, 11 watchmen and 1 water regulator.

There are 40 latrines, 26 being permanent and 14 temporary buildings. The permanent ones have still very wide doors of admittance allowing cows, &c., to enter.

There are many private latrines, and 876 are daily cleaned by the municipal servants on payment.

There are 195 kerosene-oil lamps, but more are required.

Slaughter-houses.—There are two—one in the northern and one in eastern parts of the town. They are not kept as clean as they should be, and they are built on a bad plan. The floors of these houses require repairing, and it would be well to build a new one on a good plan. About 100 animals are daily killed. These slaughter-houses are given on contract for Rs. 780 per annum.

Cremation and Burial-grounds.—There are two burning grounds and many burial-grounds. A burning and burial ground is situated on the banks of the Vadavar river just where the people go for their drinking water. This one should be removed and placed some way lower down the river.

Market.—There are two markets—one inside the fort for vegetables, and one outside for all things. They were clean on the date of my visit. The municipality realises a yearly income of nearly Rs. 5,000 from these markets. The large market seems to be becoming more popular, and a large iron tank and engine have been put up so that the drains are daily flushed and kept clean.

Vaccination.—Two vaccinators are employed by this municipality—one first class and one second class.

First-class vaccinator Pokala Guntiah Naidu has sixteen years' service, is an old man, knows no English, but seems an honest, hard-working man. His register (written in English by a friend) was kept neatly and up to date. Instruments in good order and had some preserved lymph between glasses. Some capillary tubes should be supplied to him.

Second-class vaccinator Murugasen Pillay has fifteen years' service, thirteen of which have been spent in the Tanjore municipality. He knows English well, but his work was not very satisfactory. His register was untidy and not correctly kept. Instruments in good order.

The work done in this municipality from 1st January to 31st July 1883 has been as follows:—

Name.	Total number vaccinated.	Successful.	From arm-to-arm.	Under one year of age.	Number of days on which work done.
First-class vaccinator Pokala Guntiah Naidu	702	669	700	137	138
Second-class vaccinator Murugasen Pillay	441	409	438	61	113
Total ..	1,143	1,078	1,138	198	..

Cases are taken for inspection to the hospital every week, and occasionally the hospital assistant goes round with the vaccinators to see their cases, but he does not sign their registers. When cases are seen by the Civil Surgeon, one anna is given to each, but no extra batta when lymph is extracted, and I think it should be. The rule is that the first-class man must do 100 monthly and the second-class man 70. The vaccinators stated that there was great difficulty in getting subjects, as no assistance was given them. I would suggest that the municipality be divided into two vaccine circles, and that the commissioners be asked to see that all the unprotected in their divisions are vaccinated. Infantile vaccination is backward: thus for the seven months only 198 were done under one year of age, while the births for the same period were 613. There were six deaths from small-pox this year.

Registration of births and deaths.—Books neatly kept and written up to date. From 1st January to 31st July there were registered 594 births and 613 deaths. There have been no cases of cholera. Registration seems to be inaccurately kept however, thus during the past five years there have been 5,560 deaths and 5,507 births. The census for 1871 was 52,175 and for 1881, 54,745. From 1st April 1881 to 31st March 1883 there have been 2,297 deaths and 1,773 births.

Remarks.—The improvements which have taken place since last inspection have been—repairing and raising some streets, improving glacis opposite the hospital, strengthening the bank of the Panaicken voy, re-erecting the wall of the supply-channel near

the Lutheran Mission tank, making a masonry channel from the old court-house tunnel to the fort ditch, whitewashing the big market and erecting at one corner of it an iron tank and engine, building another shed in the fish market, cutting a surface drainage channel in west rampart street, building some dust-bins and demolishing others, repairing and tarring latrines, erecting sheds for the toties, and constructing a drain opposite the big market.

The proposed improvements are to demolish the southern rampart wall of the fort and to fill up this part of the ditch. If this were done, it would be a great improvement as the streets in this part of the fort are very badly ventilated. It is also intended to build a new slaughter-house, and this is much required. The cisterns and conduits in the fort are to be repaired, but I think it would be better if they were closed altogether. Some tanks are to be repaired, three more latrines are to be erected, some streets are to be raised, and a few new drains are to be made.

MANNARGUDI MUNICIPALITY.

INSPECTED 22ND AND 23RD AUGUST 1883.

Population per census of 1881—*males*, 9,424 ; *females*, 9,985 ; *total*, 19,409.

Roads.—Only two roads are metalled. They are in a bad state of repair. The streets are kept clean and the dry rubbish used to fill up holes, &c. Formerly the street sweepings were taken to depôts where it has accumulated, as there is no sale for them.

There are 50 dust-bins—20 being pucka built, and 30 temporary wooden ones. More moveable ones are required, and I would suggest a wooden box with a lid but without a bottom.

Drainage.—None. There are about 20 cesspools which are daily cleaned out by the municipal servants. The drainage of many of the backyards is defective, and so some new roads have been opened out between the backyards of the houses to enable the sweepers to clean them.

Water-supply—from tanks, river, and a few wells. Three tanks are reserved for drinking purposes. Two wells are used to get drinking water from. Most of the tanks should be emptied and cleaned out this year.

Conservancy.—The establishment consists of 3 inspectors, 6 maistries, 7 tank watchmen, 4 toties, 12 channel coolies, 24 sweepers, 12 rubbish and 2 cesspool carts.

There are 11 latrines—2 permanent and 9 temporary. They are very little used. The night-soil is buried in pits close to the latrines.

There are many private latrines which are cleaned by the owners.

There are 150 kerosene-oil lamps, but more are to be put up.

Market.—A suitable site has been chosen where the weekly market is held. Some sheds have been put up. A tank has been made, and it is intended to have this piece of ground enclosed. There are two small markets—one for fish and one for meat, and both were very clean on the date of my visit.

Cremation and Burial grounds.—There are four burning-grounds and all are situated near the river. The burial-grounds are two—one Christian and one Muhammadan ; both are enclosed.

Vaccination.—One first-class vaccinator is employed. First-class vaccinator Ranojee Row has over nine years' service, knows English, and for the last five months his work has been supervised by the assistant apothecary. Register neatly kept and instruments in good order. His work from 1st January to 31st July was—

Total number vaccinated	388
Successful	354
From arm-to-arm	280
Under one year of age	99
Number of days on which work done	177

I saw some recent cases done by this man and the lymph in use appeared good. He is required to do 50 monthly, but lately he has been doing more, and he gets assistance from the nuisance inspectors. Infantile vaccination is backward, thus from 1st January to 31st July only 99 cases were done under one year of age, while the births for the same period were 301.

Registration of births and deaths.—Books neatly kept and written up to date. From 1st January to 31st July there were 301 births and 281 deaths. There have been no cases of cholera since February. For two years there have been no deaths from small-pox.

Remarks.—This municipality is on the whole kept clean. The improvements which have taken place since last inspection have been—erecting more dust-bins, putting up six tatty latrines, increase of the conservancy establishment and extra lamps, remetalling the main road and repairing others, repairing tanks and wells, opening up of six lanes between the backyards of houses, making new streets, commencement of a municipal market, and opening a branch dispensary in the town.

The proposed improvements are—to metal another road, to erect a masonry building for the cremation of bodies, to increase the number of dust-bins, to build a cinerator, to get an engine so that all the tanks may be annually emptied, to open up more lanes with a view to having all private latrines cleaned by the municipal toties, to complete the municipal market, to start a municipal garden for utilising the street sweepings and night-soil, and to put up more lamp-posts.

NEGAPATAM MUNICIPALITY.

INSPECTED 24TH, 25TH, AND 27TH AUGUST 1883.

Population per census of 1881—*males*, 24,305 ; *females*, 29,550 ; *total* 53,855.

Roads.—Only a few roads are metalled and they are in a bad state of repair. The main streets are clean, but the smaller ones are not, and they are used as latrines. The street sweepings of Negapatam are carted to Hathaway's park, and those of Nagore to two places, just outside the town. There was no sale for them this year. Many of the backyards were in a very dirty state.

There are 527 dust-bins, all pucka built. More are required, especially in Nagore, and I would suggest moveable ones.

Drainage.—None. There are about 712 cesspools of various sizes and patterns. They are cleaned out once in every two or three days by the municipal servants gratuitously. The contents of these cesspools are carted to Hathaway's park, the sea, and to a ditch in Nagore. The cesspools, if possible, should all be of one pattern, and I would suggest a pucka cistern with a bucket in it and that they be emptied *daily*.

Water-supply—from tanks and wells. Six tanks are reserved for drinking purposes, and occasionally they are emptied and cleaned.

There are seventy-seven wells from which drinking water is obtained ; most have parapet walls and platforms, but some require repairing, and all should be provided with drains to carry off the waste water.

Drinking water is also obtained during the north-east monsoon from the Ooppanaur river which runs along the west of the town from north to south. The supply cannot be said to be good, as it is subject to numerous defilements in its course, and the banks are largely used as latrines.

Conservancy.—The establishment consists of 5 nuisance inspectors, 15 peons, 92 scavengers, six tank watchmen, 1 toty maistry, 1 engine cooly, 15 rubbish, 12 sewage, and 8 night-soil carts. The staff is not sufficient. The scavengers, night-soil and sewage carts should be increased.

There are eighteen pucka built latrines—seventeen being in Negapatam and one in Nagore. There are also five temporary latrines, but they are out of repair. Sand, not dry-earth, is used in the latrines, and the night-soil is taken to Hathaway's park and to a field in Nagore. There is no sale for it.

About 1,000 private latrines are cleaned by the municipal toties on payment, and it would be well if all were so done.

To facilitate the cleaning out of these latrines, some iron boxes (twenty-four in number) have been placed at the corners of streets. The night-soil is deposited in them, and when the carts (eight in number) pass, they are emptied. As these boxes are not air-tight and many are in a bad state of repair, they are not only a nuisance to the people

whose houses are close to them but also to the passers by. They should all be condemned and more night-soil carts entertained. To enable the men to clean the privies of houses situated in narrow lanes, small hand-carts could be obtained.

Slaughter-houses.—There are two and are kept clean. The animals should, I think, be inspected first before being killed. The municipality derives a yearly income of Rs. 1,000 from these houses.

There are 220 kerosene-oil lamps, but more are to be put up.

Markets.—There is a large one in Negapatam, but many of the stalls facing outwards are still unlet. It was very clean when I visited it.

Vaccination.—This municipality employs two vaccinators—one first-class vaccinator and a second-class vaccinatrix.

First-class vaccinator N. Veerasawmy Naidu has nine years' service and knows English. His register was neatly kept and instruments in good order. From 1st January to 31st July his work was—

Total number vaccinated	622
Successful	569
Under one year of age	189
From arm-to-arm	480
Number of days on which work done	179

I saw one lymph subject done by this man, but the vesicles were not very good. He was on casual leave, and this was the reason he said he had no more cases to show me.

Second-class vaccinatrix Thungum has eleven years' service, about three of which have been spent in this municipality. As she cannot write well, her husband keeps her register, which was neatly written in vernacular. Her instruments were in good order. From 1st January to 31st July her work was—

Total number vaccinated	400
Successful	367
From arm-to-arm	218
Under one year of age	75
Number of days on which work done	178

This woman's work was unsatisfactory, and she could not show me any lymph subject. She stated that they had all proved unsuccessful. Her division is Nagore, but she will not reside there although directed to do so.

In this municipality vaccination is backward. In May last an order was passed that the first-class vaccinator must do 100 cases monthly and the second class 70, and since then vaccination has been improving. Batta is given to mothers when lymph is taken from their children's arms, but still arm-to-arm vaccination is backward. The vaccinator is very anxious that animal vaccination be started, and it might be tried for a few months. From 1st January to 31st July, 264 cases, under one year of age, were vaccinated, while the births for the same period were 585. I visited a few schools and found 54 vaccinated, 40 unprotected, and 39 marked.

Registration of births and deaths.—Three registrars are employed who have offices in the town. The nuisance inspectors also give information of the births and deaths that have taken place in their divisions. The books were neatly kept but unreliable. From 1st January to 31st July there were 585 births and 550 deaths. For the last five years the births have been 4,861 and deaths 5,452. There has been no cholera since March.

Remarks.—A great deal still requires to be done with regard to improving the water-supply, drainage, and disposal of sweepings and night-soil. I think cinerators should be built where the dry-rubbish might be burnt, the ashes used in the latrines and then taken and buried in Hathaway's park. The part of this park, which has been filled up, should be levelled and cultivated. If a piece of land could be obtained, the contents of the cesspools could be used to irrigate it.

The improvements which have taken place since last inspection are—the introduction of cleaning private latrines by the municipal toties, widening and raising some roads, making a drinking water tank and digging some wells, increase of conservancy establishment, building a new slaughter-house in Nagore, making a cart-stand, planting trees about the roads, and enclosing the market with a fence.

The proposed improvements are to build a pucka compound wall round the market and to make all the stalls face inwards, to increase the number of lamps, to raise some roads, build cinerators, have all cesspools made after one pattern, and to have an artesian well if possible.

The Vice-President proposes deepening and narrowing the Ooppanaur river and reclaiming the ground at each side of it. This would be a very great improvement.

I visited the two fish-curing yards and found them clean. No fish had been cured at the one at Numbiarcoopum for two days.

Madras, *22nd September* 1883.

(Signed) J. A. LAING, Surgeon-Major,
and Inspector of Vaccination
Deputy Sanitary Commissioner.

No. 1420.

Endorsement on the above.

True copy forwarded for the imformation of Government.

Madras, *5th November* 1883.

(Signed) M. C. FURNELL, M.D., F.R.C.S.,
Sanitary Commissioner for Madras.

Order—dated 15th November 1883, No. 2580, Financial.

Communicated to the President of the Municipalities concerned.

(True Extract.)

Chief Secretary.

To the President of the Municipal Commission, Máyavaram.
" " " " " Kumbakónam.
" " " " " Tanjore.
" " " " " Mannárgudi.
" " " " " Nagapatam.
" Sanitary Commissioner for Madras.
" Public Works department.

Exd. J. Wright.

No 3434 Wdf Decr 1st 1883.

B/

Communicated to the Superintending Engineer S. E. Circle for information.

Cf. 23/11

U.S. 26-11-83.

Fr. No. 10412

Govt. of {1883} Madras.

FINANCIAL.

S. & C.

Issued

Read. 23/11/83 *Encl.*

G.O., 15th November 1883, No. 2580.

No 3434 Wdf Decr 1st 1883.

NOVEMBER.

Municipal—Sanitary.

Communicating sanitary inspection notes by the Inspector of Vaccination and Deputy Sanitary Commissioner, Madras, on the municipalities in the Tanjore district.

Read 27/12

S. E. Circle

Ex

10/12

With order