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[Despatch Abstract.]

Inspection Notes

Reading, with remarks, thereon

Sanitary Comm.rs — on the

Vote commd Jan.y 1st.

BACK PAPERS.

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

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Government {1896} of Madras.

LOCAL AND MUNICIPAL.

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G.O., No. 2021 M., 23rd November 1896.

NOVEMBER.

Inspection Notes.

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

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

Read—the following paper :—

From G. HAMNETT, Esq., Chairman, Municipal Council, Ootacamund, to the Acting Chief Secretary to Government (through the Collector of Nilgiris), dated 6th October 1896, No. 2637.

I have the honour to submit, for the consideration and orders of His Excellency the Governor in Council, the notes of the Sanitary Commissioner for Madras on his inspection of the Ootacamund Municipality on the 11th to 19th June 1896, together with an extract from the Proceedings of a Meeting of the Municipal Council held on the 5th instant.

Enclosures.

Inspection notes of the Sanitary Commissioner for Madras.

NILGIRI DISTRICT.

Ootacamund Municipality.

Inspected, 11*th to* 19*th June* 1896.

Population as per census of 1891 15,053

Inspection Notes.	Chairman's Remarks.
Roads.—These, I consider, are in a creditable condition.	
2. *Dwellings*.—(*a*) Overcrowding exists in certain parts of the native town.	(*a*) The Government was addressed regarding the "overcrowding" of buildings on the 25th September 1895, 22nd February 1896 and 1st August 1896 in view to municipal councils being vested with larger powers than they now possess to prevent overcrowding.
(*b*) Having determined by careful inspection the nature of action required under sections 187 and 226, I would advise the council to frame estimates with the object of ascertaining whether it could not, with financial safety, build under section 177 model native dwellings for the poor, and offer them for reasonable rent upon the proceeds of a loan from Government—*vide* G.O., No. 415, Financial, dated 8th July 1896, paragraph 7.	(*b*) The Sanitary Commissioner's suggestion is a most laudable one, but there is no vacant land in this municipality which is vested in the municipal council, nor has the municipal council any funds which it can appropriate for the erection of buildings to be leased on favourable terms to the poor.
(*c*) *Municipal Chattram*.—The flooring requires repair. Correct removal of sullage water should be arranged for.	(*c*) Will be attended to.

Inspection Notes.	Chairman's Remarks.
(*d*) *Municipal Market Chattram*.—Demands similar attention.	(*d*) Will be attended to.
(*e*) *Caste Chattram*.—Ventilation of the centre room requires attention.	(*e*) This is an endowed chattram. The endowment is Rs. 120 per annum, the whole of which goes towards a care-taker, oil, &c. Rs. 175 were spent on repairs from Municipal funds in 1895–96.
(*f*) The chattram accommodation in this town is insufficient for the requirements of the fluctuating native population.	(*f*) Yes, and if funds were available the council would build a school-house and vacate the portion of the chattram in the main bazaar now appropriated for the municipal bazaar school.
3. *Water-supply*.—(*a*) In my report for 1893 I have entered fully into the question of water-supply of Ootacamund. Excellent water is doubtless available, but the methods of collection are not such as to ensure that its pristine purity shall be retained. Irrespective of the requisite improvements of cutting off inhabited areas both in the Marlimund and Dodabetta supplies, there can be no doubt that a mistake was committed in storing water at Marlimund. Several of the purest supplies of Great Britain are collected from peaty sources, but a peat bog is not wittingly selected for their storage. The two things are very different. This may be simply illustrated by the fact that when Major Morant selected the site he found water issuing from it that compared with that of Lock Katrine for purity. Now the water is a strong infusion of decomposing vegetable matter, with possible traces of the perilous washings of animal origin from the neighbouring estate. In the matter of microbes, I found on bacteriological examination the Marlimund supply contained about five times more than according to Koch, is permissible in a water intended for drinking purposes, and this without the aid of a temperature favourable for full development. In my report above alluded to, I have added to the description of the conditions found here the following :—	(3) *Water-supply*.—(*a*) The improvement of the water-supply is at present under investigation by Mr. Walch—*vide* paragraph 4 (5) of G.O., No. 1363 M., dated 14th August 1896. A copy of these remarks will be supplied to him.

"Major Morant and the Sanitary Engineer have advised that the water (Marlimund supply) should be distributed after filtration. This also would be desirable, but before adopting it, it would be requisite to ascertain whether it would be absolutely necessary to accept so very low a type of water and use it after attempted purification."

This precautionary policy has been adopted by the Sanitary Board under orders from Government, and I presume a reply as to the financial possibility of

Inspection Notes.

the matter will be shortly before the municipality. Should it be found impossible to face the expenditure following abandonment of this reservoir, it will be necessary to filter the water after subjecting it to the action of Anderson's revolvers, as has been advised by me in connection with the necessity of supplying at least certain houses. I trust the council will understand distinctly that my endeavour has been not to plunge them recklessly into expense by abandonment of an important feature—albeit a peat bog—of the water-works; but, on the opposite, by demanding careful investigation before action is taken, one way or the other, to ensure that they shall obtain the best return for the money to be expended.

(*b*) Water derived from peaty sources has been found to encourage the growth of microbes which by giving an acid re-action readily brings about corrosion of lead. The extent to which it would be safe to use lead-piping in Ooty houses should be definitely settled by the Chemical Examiner.

(*c*) Insuction of foul gases and foul matters from the soil is liable to attend intermission of water-supply where leaks, defective joints, or defective valves and taps are present. Danger of this occurring is found in the erroneous position of Meanjee Sait's water-taps, and the running through the sewage-contaminated stream of a pipe to the pavilion in the Gymkhana ground. An instance of the danger of household storage following intermission also came to my notice in an important hotel. Intermission of the supply should therefore be only practised under the most urgent conditions. It is not likely waste, otherwise than by the leaking of taps, occurs in thickly populated quarters; but it is exactly here that intermission is most dangerous. Economy would be best served by rigid attention to fittings. The following is the result of experiment by a recent author on the point:—

Description of fitting.	Gallons wasted per 24 hours.
½ inch washer, bad	700
½ inch tap „ „	920
½ inch tap, screw stripped ..	12,720
½ inch tap washer, bad ..	900
Taps left open—	
½ inch	23,520
½ inch	12,000
⅜ inch	9,600

Chairman's Remarks.

(*c*) The Marlimund reservoir has been estimated by the Sanitary Engineer to Government to contain about 42,000,000 gallons, which equals a year's supply at 20 gallons per head per diem for 5,750 people or at 15 gallons per head for 7,600 people. The number of people actually served is about 10,727 and if the intermission supply of water had not been enforced, the people would have had no water during some months of the year.

Meanjee Sait's water taps were laid by the late Municipal Engineer; an extract from this note will be now sent to Meanjee Sait with a request that the taps may be placed in less objectionable positions.

Inspection Notes.

Waste in gardens and in large houses generally is not easily prohibited. Control could be obtained by the use of meters.

(*d*) *Old Ootacamund supply.*—Within a few yards of the spring head was found fœcal matter. Within 25 yards of the gallery is an open excavation, from which water evidently is largely drawn by persons in the neighbourhood. A shower of rain would at any time bring the fœcal matter mentioned within this open cistern and the chances of safety by filtration through 25 feet of soil already permeated with a strong spring would be small. This opening cannot have been made with the consent of the municipality, and action should be taken to close it without delay.

In the event of water scarcity in future I advise old wells in inhabited areas not to be opened, but that tube wells be sunk for obvious sanitary reasons.

4. *Sewerage* (*a*).—The necessity for complete revision of the sewerage of Mootoocheri and the bazaar was duly placed before the council by me at a special meeting in June 1895. The matter is now being dealt with by the Sanitary Board.

(*b*) The intercepting sewer has now become an intolerable nuisance, and its overflow has resulted in serious contamination of the remaining part of the upper lake. The open drains of Ootacamund are largely used by natives for purposes of nature, and consequently during rainfall a considerable portion of the fœcal matter is washed down into the defective main sewer and thence into the upper lake. The water of this lake has been so highly charged with sewage as to prevent natural processes of self-purification. Sewage contamination is therefore rapidly getting the upper hand. The condition sufficiently explains the prevalence of sore-throat, and of mosquitoes in Ooty of late. The remodelling of this highly defective main sewer should proceed with as little delay as possible. Speaking without a knowledge of the levels, I consider it is worth enquiring whether this diluted sewage cannot be got rid of by making a special temporary connection with the sewer passing below the lake.

(*c*) The Gymkhana ground and the part of the lake after filling should be

Chairman's Remarks.

(*d*) The conservancy of this portion of the town is now in charge of a sanitary inspector kindly selected by the Sanitary Commissioner and the council hopes that he will pay greater attention to the cleanliness of the place than the inspector whom he has succeeded.

Tube-wells.—The council has no funds for carrying out this suggestion.

(*b*) The question of rectifying defects in the intercepting sewer is under the consideration of the Government—*vide* paragraph 4 (5) of G.O., No. 1363, dated 14th August 1896.

More latrines are required in the heart of the town to admit of this objectionable practice being suppressed.

These remarks will be communicated to the Executive Engineer who has charge of the filling in of the upper portion of the lake, and also the improvement of the intercepting sewer.

Inspection Notes.

underdrained. The report of Surgeon-General Gordon, C.B., styled it the "best catch-hold" place in Ooty, and so it will remain unless this be attended to.

(*d*) Ootacamund was just as nearly obtaining a decently constructed pipe sewerage system at the hands of Major Tulloch in the sixties as it is to-day at the hands of Mr. Ashpitel. Hence in view of the financial circumstances of the council, I am by no means decided as to what the future may bring forth. If pipe sewerage be adopted, either by "pail depôts" or by direct connection of specially constructed water latrines, removal of night-soil will be effected through the sewers to a sewage farm and the night-soil cart era will have disappeared. If pipe sewerage be not adopted, provided the main sewer be in correct order, and be furnished with a plush tank, as contemplated by Mr. Ashpitel, there can be no reason why "pail depôts" should not be adopted over the main sewer, and thus flush the night-soil to the long-promised sewage-farm—*vide* G.O, No. 648 M., dated 23rd May 1894, Local and Municipal.

(*e*) The Kandal sewer might be similarly used. Great economy in carting would result irrespective of profit from the farm. Pail depôts on this system are largely relied upon in Calcutta, Bombay, and Ahmedabad.

(*f*) Where houses and hotels are detached from the present sewerage system, it would be well if the municipality saw that either filtration or sewage farming in small plots were adopted—*vide* accompanying circular memorandum.

(*g*) Meanjee Sait's lines have drains which are in disrepair. Under section 210, the shape should be altered from the square to the ovoid. A special catch-pit and grid should be provided at junction with the main drain.

(*h*) In case of the Kandal drainage system, I am glad to find my advice as to getting rid of the useless catch-pits has been attended to. It remains however to modify, on the same principles, the sumps along the main sewer. These are sanitarily unfit for their purpose.

(*i*) It would be of considerable advantage in keeping the Kandal bazaar open street-drain in a cleanly condition, if intermittent flushing were arranged for by

Chairman's Remarks.

(*f*) The suggestion involves expenditure which the Municipal Council is unable to incur for want of funds.

(*g*) Correspondence has been going on since June last regarding the condition of these drains. An extract from this note will be sent to Messrs. Meanjee Sait and Co. with the intimation that the alteration of the drains and the construction of a catch pit shall be carried out without delay.

(*i*) An estimate of the cost of carrying out this arrangement will be prepared, and if funds are forthcoming it will be adopted.

Inspection Notes.

means of one of Doulton's automatic flush syphons, working under a small feeding pipe placed on the public water standpost, which is situated exactly at the head of the drain near the Police lines. One of these useful flush tanks could be procured from Messrs. Doulton and Co., Lambeth, London, for about £1-13-0.

(*j*) In paragraph 5 of my former report I pointed out the hardship suffered by the agraharam inhabitants by subjection to floods. My impression then was that this was due to the high flood level of the lake. I have been assured by a good authority that this is not so, and that the real cause is the absence of sufficient breadth of the stream. If this be so, the remedy is simple and should be applied.

5. *Night-soil Conservancy.*—(*a*) In the majority of the old type of latrines the prime idea of separating the urine from the fœces has not been followed. They are consequently very offensive. If it so happens that the water carriage system be indefinitely deferred, I would advise the Municipality in forming new latrines to arrange that they be worked correctly with automatic hoppers for depositing dried and powdered peat upon the fœcal matter as a deodorant. Under this system, the urine should be collected separately from the fœces. The council has at disposal the best peat bog in Ootacamund, namely, the Marlimund reservoir. From this they have already withdrawn 82,392 cubic feet of peat without sensibly diminishing its supplies.

(*b*) As to the old latrines, it might be possible at little cost to so modify them as to render them less offensive. To this end, I would advise that accurate plans be prepared and be forwarded to the Sanitary Board for revision.

(*c*) The latrine for females in the chattram is so constructed as to be impossible for use without incurring exposure of a gross description.

(*d*) *The market latrine.*—This remains in the unsatisfactory condition noted in paragraph 15 of my report, dated 26th November 1893.

(*e*) The latrine near the Agraharam is so completely out of order, that the best course to pursue is to abolish it without delay.

(*f*) The urinals under shelter in the market are as constructed and worked

Chairman's Remarks.

(*j*) The stream will in all probability be widened in connection with the drainage scheme now under the consideration of the Public Works department.

(*a*) The suggestion will be adopted when new latrines are built.

(*b*) Plans will be prepared and sent to the Sanitary Board for revision.

(*c*) The latrine was not built by the municipality and its position until the collapse of the adjoining house was not objectionable. A temporary screen will be put up now.

(*d*) An estimate will be prepared for a flush tank cistern, and on funds being available it will be put up.

(*e*) A new latrine cannot be constructed until the council can allot funds.

(*f*) The Sanitary Board will be asked to supply the designs.

Inspection Notes.

a nuisance, and should be abolished. Designs for correct form by the Sanitary Board are now available.

(*g*) The private latrines in use by natives are also in many cases of exceedingly bad patterns. I advise that the municipality obtain a suitable design, and exhibit it at their office, and subsequently require under section 207 that private latrines be of the approved form. Mr. Donaldson, Calcutta (Agent Mr. A. W. Macleod, C.E.), has for years given much study to this question, and several of the forms exhibited at the late Medical Congress Sanitary Exhibition, Calcutta, received universal approval from sanitarians.

(*h*) Private scavenging was worked during 1894–95 *at a profit* of Rs. 2,965. The principle of making as low charges as possible for this service, so long as it is self-supporting, should be followed.

(*i*) Night-soil is disposed of by burial in pits at Titicul. This should cease in favour of burial in *trenches* of a depth not exceeding 18″. This has, I understand, been adopted on account of the small amount of ground at disposal. It should be another argument in favour of the pail depôt system just mentioned, or, in its absence, of attempting to secure night-soil depôts at places nearer the sites of collection. Thus it seems very undesirable that the night-soil from Kodapamund should be dragged along certain of the most important roads of Ootacamund in order to reach Titicul. I understand the Chairman has already had the fact under consideration.

6. *Slaughter-houses*—(*a*) *For cattle.*—The floor requires repair. The wooden tub, and the filthy wooden table should be burnt. A hydrant should be supplied for flushing the floor.

(*b*) *For sheep.*—The flooring requires repair. There is a hydrant, but no hose. This should be arranged for. The gut contents should not be scattered by the butchers on the floor. Failing the municipality being able to afford a special gutting room, a mounted conservancy bucket should be supplied, into which the butchers should be directed to place all gut contents. There can be no object in first scattering these over the floor and then attempting to get rid of them by sweeping, &c.

Chairman's Remarks.

(*g*) The Agent will be asked to supply an improved form of private latrine.

(*i*) This suggestion to secure night-soil depôts at places near the sites of collection will be referred to the sub-committee for conservancy for its consideration and report.

6 and 7. *Slaughter-houses and Markets.*—Estimates are under preparation for repairing and improving these places.

Inspection Notes.

7. *Markets.*—(*a*) Much of the interior requires re-modelling. The butchers up to date use old wooden boxes instead of Cuddapah slabs for exposing their meat upon. These are soaked with filth. No drains are made in connection with the stalls. Ropes instead of polished iron or steel hooks are employed for suspending the meat. The necessity for these reforms was pointed out by the Deputy Sanitary Commissioner in his last inspection notes.

(*b*) The mutton butchers represented to me that, at the present time, they store meat in their houses, or put it into boxes in the market, and that they would prefer a store-room in the market. This, I think, a most desirable improvement, and one that would not be expensive. The beef butchers have already been provided with a store-room by the municipality, but the floors require a drain, and more ventilation is required. The meat too should be hung, and not placed upon slabs. Granted that the council cannot afford to bring the whole of the market into correct condition, *it should at least be possible for it to fit up correctly the stalls in daily use.*

8. *Offensive trades*—(*a*) *Bakeries.*—Those visited were of a character that should have forbidden absolutely the issue of licenses. The following cases are typical :—

(1) *Syed Hussain, bakery No.* 3, *Charcoal lane.*—The floor is earthen and wet. The room is absolutely dark, and the man works by an oil lamp. The kneading board is filthy. The room is part of a dwelling, in which four persons sleep.

(2) *Dada Meah* (*License No.* 350).—The room is absolutely dark without means of ventilation. The floor is earthen ; the table is filthy. Two persons sleep in this room at nights.

(3) There are numerous other bakeries in like evil condition. As bread-eaters in Ootacamund are numerous, attention to this point is necessary. Contrary to what might be expected, recent researches show that the heat acquired during baking is not sufficient to make certain that disease germs shall be killed in the interior of bread.

(4) In stables I inspected also the requirements laid down in the licenses had not been fulfilled—although in this matter a high standard need not be demanded.

Chairman's Remarks.

Even to fit up stalls requires money.

The conditions prescribed in a license for a bake-house are—

"The bake-house shall have a cemented floor, be well ventilated, drained, white-washed half-yearly, swept daily, the tables and other utensils used be kept thoroughly clean, and be subject to the inspection of the Sanitary officers of the Municipal Council."

The Sanitary Inspector in charge of the circle in which the bakeries referred to are situated is a European who was specially trained at municipal expense at Madras for sanitary work.

It is his duty to inspect the bakeries and to take such action as may seem necessary.

The Council would not do much good by prosecuting persons who have no other means of livelihood and who are unable to provide themselves with better accommodation.

The council has not heard of any deterioration of the health of the people who ordinarily eat the bread made by poor bakers.

(4) The suggestion is noted.

Inspection Notes.

(5) The number of bandies found here and there in Kandal points to the necessity for a bandy-stand. This would be a profitable investment.

(6) *Dhobies.*—Ootacamund has the honour of being the first to undertake the sanitary discipline of dhobies. What was accomplished was not secured without a struggle, and the result reflects great credit upon the Chairman. It remains, however, to perfect the work thus commenced. In paragraph 22 of my report, dated 26th November 1893, I pointed out the necessity for no longer permitting washing in the same stream indiscriminately by dhobies, but arranging for storage of clean water, and filtration by under-drained ground before allowing return to the stream. Although improvement has been effected in the matter of storing filthy clothing separately from clean, this arrangement is not complete, and instances of conditions not being satisfied were found. It must further be remembered that the dhobies wash in water that has received the surface flow of not over-cleanly villages, and that the banks of streams are, at all times, the favourite easement resorts of natives. It is high time that some efforts were made to have properly supervised "dhobie khanas," such as are worked successfully in Bombay.

(7) In connection with this matter the Chairman has pointed out a very obvious defect, namely, that the clothing of children in the Lawrence Asylum is brought to Ootacamund for washing. Seeing that infectious diseases appear from time to time there, it is undesirable that this mingling of clothing should occur. Moreover, it is not advantageous to the children that they should run the risk of importation of disease from dhobies' huts in Ootacamund. In a large institution of this description, it is essential for safety that all laundry arrangements be effected on the spot.

(8) The question of providing Ootacamund with "model cow-sheds" has evidently been one long before the council; as I find in my report above referred to that I mention the matter as having already been mooted. Having regard to the fact that typhoid fever appears from time to time in Ootacamund, I trust that the question will be again considered by the council. The conditions under which the

Chairman's Remarks.

(5) The necessity for a cart-stand at Kandal has been long reorganised, but it could not be established from want of funds.

(6) The conditions prescribed in licenses granted to dhobies are as follows:—

"The storage-room must be well ventilated, swept daily, kept thoroughly clean, white-washed half-yearly, and be subject to the inspection of the sanitary officers of the municipal council.

"The clothes of any person suffering from any disease likely to be contagious or of persons who may have died from any contagious disease must not be deposited in the house."

As soon as the north supply water scheme is improved, steps will be taken for acquiring land and establishing dhobie khanas.

The Collector of Nilgiris, who is one of the Directors of the Lawrence Asylum at Lovedale, will be addressed on this point.

(8) The council can only repeat what it has already said about model cow-sheds and unprotected milk supply in its note 6 on the notes of the Sanitary Commissioner in September 1893.

"Under existing conditions, the protection of the milk supply is difficult. There are no proper cattle-sheds and until the "gowlees" and others who supply the town with milk be induced to build suitable sheds apart from their dwellings and to keep the milk in separate

Inspection Notes.

milk supply is obtained are absolutely bad. The animals are maintained in highly overcrowded sheds in a filthy condition. The milk is stored in some cases within the houses and both here and by mode of transport I found risks of contamination I need not detail.

(9) At Kodapamund, the water supply considered by the milkman particularly good is a well which, on each of my visits to Ootacamund, I have found had close to it a mixed rubbish and dung heap.

(10) Above the stream used by the Kodapamund milkmen is a small settlement of dhobies. The position held by these men is most dangerous, having regard to the fact that even if milk be not adulterated with water containing the dhobies washings, the vessels are certainly washed with it. It is of the greatest importance that this settlement be got rid of. This might be arranged by refusing licenses for the inhabitants as dhobies on the ground of their occupying sanitarily undesirable positions and, secondly, offering compensation for their houses. The value of these is not likely to be much. If necessary, the Land Acquisition Act might be appealed to.

(11) I know the municipality is aware of the dangers pointed out; still, as time has passed and no action has been taken, I consider it my duty to again urge both the question of "dhobie khanas" and "gowlee khanas" upon the attention of the council. A loan followed by action under section 177, and careful supervision under section 185 would get over the difficulty.

9. *Vaccination*—is conducted economically with glycerine paste. This preparation keeps well in this cool climate, as might be expected in view of its extensive use in Europe. No action has been taken upon the suggestion to cease transmission from generation to generation by glycerine lymph, which was made both in my report of 1893 and in that of the Deputy Sanitary Commissioner of 1894.

The following shows the state of working of the compulsory clauses as to infantile vaccination.

Chairman's Remarks.

compartments, from those occupied by themselves, or their cattle, the milk must be more or less contaminated."

The licenses issued now to those who keep cattle-sheds contain the following conditions:—

"The cattle-shed must be well ventilated, metalled, drained, swept daily, kept thoroughly clean and be subject to the inspection of the sanitary officers of the municipal council.

"The sweepings or manure removed daily from the cattle-shed must not be deposited near the cattle-shed or near any other building, water channel or dust-bin."

(9) Notice will be served for the removal of the rubbish, &c.

(10) The Collector of Nilgiris was asked with reference to paragraph 9 of the Sanitary Board's Proceedings, dated 16th August 1895, No. 2286, "to assist as far as may be possible to prevent the erection of more huts at Kodapamund." The question of entirely getting rid of the dhoby settlement will doubtless be considered in connection with the improvement of the water-supply of the town.

9. These remarks will be communicated to the Civil Surgeon and the Municipal Vaccinator will be directed to conform to them.

Inspection Notes. Chairman's Remarks.

Name of municipality.	Total births during preceding six months, i.e., 1st January to 30th June 1895.	Number vaccinated successfully.	Number vaccinated unsuccessfully for the first time.	Number vaccinated on second time because first operation proved unsuccessful.		Postponed under medical certificate at the end of six months.	Died.	Left the town.	Unaccounted for.	Ratio of successful to total births per cent.	Prosecution for failure to accept vaccination during the year up to date.		
				Successful.	Unsuccessful.						Number of suits filed.	Number of cases disposed of by magistrates.	Number of convictions.
Ootacamund	267	178	..	..	..	..	54	35	..	..	302	302	..

10. *Vital Statistics.*—The following are the statistics gathered during the last five years:—

Years.	Ratio of birth per mille of estimated population.	Ratio of deaths per mille of estimated population.	Percentage of deaths from						Infantile mortality.
			Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa.	Injuries.	Other causes.	
1892	29·2	22·2	0·3	1·2	24·9	14·3	2·3	57·0	191·0
1893	27 5	20·8	..	0 6	27·5	13·7	1·5	56·7	188·9
1894	30·1	23·7	0·3	..	29·1	10·0	..	60·6	258·74
1895	30·9	22·2	..	..	37·7	9·1	1·1	52·1	245·9
1896	27 6	19·7	..	..	29·2	6·6	1·4	62·8	152·2

I have in a memorandum separately communicated to the municipality dealing with their views embodied in G.O., No. 1864 M., dated 3rd December 1895, offered certain remarks on the subject.

There is no order bearing this date and number in 1895, and the memorandum referred to has not yet been received.

11. *Sanitary Administration.*—Since my last inspection, the offence of common nuisance seems greatly to have increased in prevalence; a fact that argues that either the police are lax in their working of the Towns Nuisance Act, or that the punishments awarded by the magistracy are too lenient to be deterrent. No attempt has been made to work the ward system, as the council was invited to do in G.O., No. 648 M., dated 23rd May 1894, paragraph 7. Much good could undoubtedly be done by the councillors, if they would take upon themselves the task of fulfilling sanitary inspection in their respective wards, and taking an active interest generally in public and private conservancy and vaccination.

The record of progress during the last two years has been very disappointing * but this may in part be ascribed to the waiting for fulfilment of the major works of water-supply and sewerage, and greatly to the absence of funds necessary for fulfilment of anything more than the upkeep of existing condition. The gradual withdrawal of funds that had been given annually as a special aid towards sanitation by Government has undoubtedly seriously affected the possibility of advance. In other respects, the sanitary administration of the municipality reflects much credit upon the Chairman, whose energy is widely admitted.

Ward system.—The municipal council passed the following resolution on the point, and submitted it to the Government with letter No. 1264, dated the 6th July 1894:—

"As regards the ward system, the council is of opinion that considering the straggling character of the town, it would not be convenient to introduce the system in this municipality."

* Yes; solely from want of funds.

COCANADA,
2nd September 1896.

(Signed) W. G. KING, Surgn.-Lieut.-Col.,
Sanitary Commissioner for Madras.

Inspection Notes. Chairman's Remarks.

EXTRACT from the Proceedings of a meeting of the Ootacamund Municipal Council held on Monday the 5th October 1896.

* * * * *

No. XX. Read inspection notes, dated 2nd September 1896, of the Sanitary Commissioner for Madras on the Ootacamund Municipality with Chairman's replies.

Resolution.—With reference to paragraph 11 of the notes, Colonel Stevenson will be requested to take charge of the following ward, viz., from Charing Cross along the north side of the main stream to Metucherry and bounded on the north by the Hospital road and Church hill road.

The notes with the Chairman's replies will be submitted to the Government.

N. Dis. No.

Forwarded.

2. The council is too straitened in means to do all it should, but further progress is hoped for. At the last meeting two wards were constituted and placed under ward councillors, viz., the main bazaar with the Agraharam and Metucherry; much advantage is expected from this, especially as the councillor in charge of the former ward is an officer so experienced in municipal work as Colonel Stevenson.

(Signed) H. TREMENHEERE,
Ag. Collector.

10th October 1896.

ORDER—No. 2021 M., dated 23rd November 1896.

Recorded, with the following remarks:—

(1) The action which the municipal council proposes to take on paragraphs 4 (*h*) and 5 (*h*) of the inspection notes has not been reported. This omission should be supplied at an early date.

(2) The work of inspecting bakeries, which is apparently being inefficiently performed by the Sanitary Inspector, should be supervised by the Chairman and licenses should be refused in the case of bakeries that do not satisfy the conditions prescribed by the bye-laws.

(3) The Sanitary Commissioner's attention will be drawn to the latter portion of the Chairman's remarks on paragraph 10 of the notes. The Government order quoted in this paragraph is one of 1894 and not 1895.

(True Extract.)

Secretary to Government.

To the Chairman, Municipal Council, Ootacamund.
" Collector of Nilgiris.
" Sanitary Commissioner.
" Sanitary Engineer.
Editors' Table.

Ext. A. Raitt.

Ooty Inspection Notes

2021 No. M., October 1896.

23 Nov No. 2759

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

Read—the following paper :—

From G. HAMNETT, Esq., Chairman, Municipal Council, Ootacamund, to the Acting Chief Secretary to Government, (through the Collector of Nilgiris), dated 6th October 1896, No. 2637.

I have the honour to submit for, the consideration and orders of his Excellency the Governor in Council, the notes of the Sanitary Commissioner for Madras on his inspection of the Ootacamund Municipality on the 11th to 19th June 1896, together with an extract from the Proceedings of a Meeting of the Municipal Council held on the 5th instant.

Enclosures.

Inspection notes of the Sanitary Commissioner for Madras.

NILGIRI DISTRICT.

Ootacamund Municipality.

Inspected, 11*th to* 19*th June* 1896.

Population as per census of 1891 15,053

Inspection Notes.	Chairman's Remarks.
Roads.—These, I consider, are in a creditable condition.	
2. *Dwellings*.—(*a*) Overcrowding exists in certain parts of the native town.	(*a*) The Government was addressed regarding the "overcrowding" of buildings on the 25th September 1895, 22nd February 1896 and 1st August 1896 in view to municipal councils being vested with larger powers than they now possess to prevent overcrowding.
(*b*) Having determined by careful inspection the nature of action required under sections 187 and 226, I would advise the council to frame estimates with the object of ascertaining whether it could not, with financial safety, build under section 177 model native dwellings for the poor, and offer them for reasonable rent upon the proceeds of a loan from Government—*vide* G.O., No. 415, Financial, dated 8th July 1896, paragraph 7.	(*b*) The Sanitary Commissioner's suggestion is a most laudable one, but there is no vacant land in this municipality which is vested in the municipal council, nor has the municipal council any funds which it can appropriate for the erection of buildings to be leased on favourable terms to the poor.

Inspection Notes.	Chairman's Remarks.
(*e*) *Municipal Chattram.*—The flooring requires repair. Correct removal of sullage water should be arranged for.	(*c*) Will be attended to.
(*d*) *Municipal Market Chattram.*—Demands similar attention.	(*d*) Will be attended to.
(*e*) *Caste Chattram.*—Ventilation of the centre room requires attention.	(*e*) This is an endowed chattram. The endowment is Rs. 120 per annum, the whole of which goes towards a care-taker, oil, &c. Rs. 175 were spent on repairs from Municipal funds in 1895–96.
(*f*) The chattram accommodation in this town is insufficient for the requirements of the fluctuating native population.	(*f*) Yes, and if funds were available the council would build a school-house and vacate the portion of the chattram in the main bazaar now appropriated for the municipal bazaar school.
3. *Water-supply.*—(*a*) In my report for 1893 I have entered fully into the question of water-supply of Ootacamund. Excellent water is doubtless available, but the methods of collection are not such as to ensure that its pristine purity shall be retained. Irrespective of the requisite improvements of cutting off inhabited areas both in the Marlimund and Dodabetta supplies, there can be no doubt that a mistake was committed in storing water at Marlimund. Several of the purest supplies of Great Britain are collected from peaty sources, but a peat bog is not wittingly selected for their storage. The two things are very different. This may be simply illustrated by the fact that when Major Morant selected the site he found water issuing from it that compared with that of Lock Katrine for purity. Now the water is a strong infusion of decomposing vegetable matter, with possible traces of the perilous washings of animal origin from the neighbouring estate. In the matter of microbes, I found on bacteriological examination the Marlimund supply contained about five times more than according to Koch, is permissible in a water intended for drinking purposes, and this without the aid of a temperature favourable for full development. In my report above alluded to, I have added to the description of the conditions found here the following:—	(3) *Water-supply.*—The improvement of the water-supply is at present under investigation by Mr. Walch—*vide* paragraph 4 (5) of G.O., No. 1363 M., dated 14th August 1896. A copy of these remarks will be supplied to him.

"Major Morant and the Sanitary Engineer have advised that the water (Marlimund supply) should be distributed after filtration. This also would be desirable, but before adopting it would be requisite to ascertain whether it would be absolutely necessary to accept so very low a type of water and use it after attempted purification."

Inspection Notes.

Chairman's Remarks.

This precautionary policy has been adopted by the Sanitary Board under orders from Government, and I presume a reply as to the financial possibility of the matter will be shortly before the municipality. Should it be found impossible to face the expenditure following abandonment of this reservoir, it will be necessary to filter the water after subjecting it to the action of Anderson's revolvers, as has been advised by me in connection with the necessity of supplying at least certain houses. I trust the council will understand distinctly that my endeavour has been not to plunge them recklessly into expense by abandonment of an important feature—albeit a peat bog—of the water-works; but, on the opposite, by demanding careful investigation before action is taken, one way or the other, to ensure that they shall obtain the best return for the money to be expended.

(*b*) Water derived from peaty sources has been found to encourage the growth of microbes which by giving an acid re-action readily brings about corrosion of lead. The extent to which it would be safe to use lead-piping in Ooty houses should be definitely settled by the Chemical Examiner.

(*c*) Insuction of foul gases and foul matters from the soil is liable to attend intermission of water-supply where leaks, defective joints, or defective valves and taps are present. Danger of this occurring is found in the erroneous position of Meanjee Sait's water-taps, and the running through the sewage contaminates stream of a pipe to the pavilion in the Gymkhana ground. An instance of the danger of household storage following intermission also came to my notice in an important hotel. Intermission of the supply should therefore be only practised under the most urgent conditions. It is not likely waste, otherwise than by the leaking of taps, occurs in thickly populated quarters; but it is exactly here that intermission is most dangerous. Economy would be best served by rigid attention to fittings. The following is the result of experiment by a recent author on the point:—

Description of fitting.	Gallons wasted per 24 hours.
½ inch washer, bad	700
½ inch tap „ „	920
½ inch tap, screw stripped ..	12,720
½ inch tap washer, bad ..	900
Taps left open—	
½ inch	23,520
¼ inch	12,000
⅛ inch	9,600

(*c*) The Marlimund reservoir has been estimated by the Sanitary Engineer to Government to contain about 42,000,000 gallons, which equals a year's supply at 20 gallons per head per diem for 5,750 people or at 15 gallons per head for 7,600 people. The number of people actually served is about 10,727 and if the intermission supply of water had not been enforced, the people would have had no water during some months of the year.

Meanjee Sait's water taps were laid by the late Municipal Engineer; an extract from this note will be now sent to Meanjee Sait with a request that the taps may be placed in less objectionable positions.

Inspection Notes.

Waste in gardens and in large houses generally is not easily prohibited. Control could be obtained by the use of meters.

(*d*) *Old Ootacamund supply.*—Within a few yards of the spring head was found fœcal matter. Within 25 yards of the gallery is an open excavation, from which water evidently is largely drawn by persons in the neighbourhood. A shower of rain would at any time bring the fœcal matter mentioned within this open cistern and the chances of safety by filtration through 25 feet of soil already permeated with a strong spring would be small. This opening cannot have been made with the consent of the municipality, and action should be taken to close it without delay.

In the event of water scarcity in future I advise old wells in inhabited areas not to be opened, but that tube wells be sunk for obvious sanitary reasons.

4. *Sewerage* (*a*).—The necessity for complete revision of the sewerage of Mootoocheri and the bazaar was duly placed before the council by me at a special meeting in June 1895. The matter is now being dealt with by the Sanitary Board.

(*b*) The intercepting sewer has now become an intolerable nuisance, and its overflow has resulted in serious contamination of the remaining part of the upper lake. The open drains of Ootacamund are largely used by natives for purposes of nature, and consequently during rainfall a considerable portion of the fœcal matter is washed down into the defective main sewer and thence into the upper lake. The water of this lake has been so highly charged with sewage as to prevent natural processes of self-purification. Sewage contamination is therefore rapidly getting the upper hand. The condition sufficiently explains the prevalence of sore-throat, and of musquitoes in Ooty of late. The remodelling of this highly defective main sewer should proceed with as little delay as possible. Speaking without a knowledge of the levels, I consider it is worth enquiring whether this diluted sewage cannot be got rid of by making a special temporary connection with the sewer passing below the lake.

(*c*) The Gymkhana ground and the part of the lake after filling should be

Chairman's Remarks.

(*d*) The conservancy of this portion of the town is now in charge of a sanitary inspector kindly selected by the Sanitary Commissioner and the council hopes that he will pay greater attention to the cleanliness of the place than the inspector whom he has succeeded.

Tube-wells.—The council has no funds for carrying out this suggestion.

(*b*) The question of rectifying defects in the intercepting sewer is under the consideration of the Government—*vide* paragraph 4 (5) of G.O., No. 1363, dated 14th August 1896.

More latrines are required in the heart of the town to admit of this objectionable practice being suppressed.

These remarks will be communicated to the Executive Engineer who has charge of the filling in of the upper portion of the lake, and also the improvement of the intercepting sewer.

Inspection Notes.

Chairman's Remarks.

underdrained. The report of Surgeon-General Gordon, C.B., styled it the "best catch-hold" place in Ooty, and so it will remain unless this be attended to.

(*d*) Ootacamund was just as nearly obtaining a decently constructed pipe sewerage system at the hands of Major Tulloch in the sixties as it is to-day at the hands of Mr. Ashpitel. Hence in view of the financial circumstances of the council, I am by no means decided as to what the future may bring forth. If pipe sewerage be adopted, either by "pail depôts" or by direct connection of specially constructed water latrines, removal of night-soil will be effected through the sewers to a sewage farm and the night-soil cart era will have disappeared. If pipe sewerage be not adopted, provided the main sewer be in correct order, and be furnished with a plush tank, as contemplated by Mr. Ashpitel, there can be no reason why "pail depôts" should not be adopted over the main sewer, and thus flush the night-soil to the longpromised sewagefarm—*vide* G.O., No. 648 M., dated 23rd May 1894, Local and Municipal.

(*e*) The Kandal sewer might be similarly used. Great economy in carting would result irrespective of profit from the farm. Pail depôts on this system are largely relied upon in Calcutta, Bombay, and Ahmedabad.

(*f*) Where houses and hotels are detached from the present sewerage system, it would be well if the municipality saw that either filtration or sewage farming in small plots were adopted-*vide* accompanying circular memorandum.

(*f*) The suggestion involves expenditure which the Municipal Council is unable to incur for want of funds.

(*g*) Meanjee Sait's lines have drains which are in disrepair. Under section 210, the shape should be altered from the square to the ovoid. A special catch-pit and grid should be provided at junction with the main drain.

(*g*) Correspondence has been going on since June last regarding the condition of these drains. An extract from this note will be sent to Messrs. Meanjee Sait and Co. with the intimation that the alteration of the drains and the construction of a catch pit shall be carried out without delay.

(*h*) In case of the Kandal drainage system, I am glad to find my advice as to getting rid of the useless catch-pits has has been attended to. It remains however to modify, on the same principles, the sumps along the main sewer. These are sanitarily unfit for their purpose.

Inspection Notes.

(*i*) It would be of considerable advantage in keeping the Kandal bazaar open street-drain in a cleanly condition, if intermittent flushing were arranged for by means of one of Doulton's automatic flush syphons, working under a small feeding pipe placed on the public water standpost, which is situated exactly at the head of the drain near the Police lines. One of these useful flush tanks could be procured from Messrs. Doulton and Co., Lambeth, London, for about £1–13–0.

(*j*) In paragraph 5 of my former report I pointed out the hardship suffered by the agraharam inhabitants by subjection to floods. My impression then was that this was due to the high flood level of the lake. I have been assured by a good authority that this is not so, and that the real cause is the absence of sufficient breadth of the stream. If this be so, the remedy is simple and should be applied.

5. *Night-soil Conservancy.*—(*a*) In the majority of the old type of latrines the prime idea of separating the urine from the fœces has not been followed. They are consequently very offensive. If it so happens that the water carriage system be indefinitely deferred, I would advise the Municipality in forming new latrines to arrange that they be worked correctly with automatic hoppers for depositing dried and powdered peat upon the fœcal matter as a deodorant. Under this system, the urine should be collected separately from the fœces. The council has at disposal the best peat bog in Ootacamund, namely, the Marlimund reservoir From this they have already withdrawn 82,392 cubic feet of peat without sensibly diminishing its supplies.

(*b*) As to the old latrine, it might be possible at little cost to so modify them as to render them less offensive. To this end, I would advise that accurate plans be prepared and be forwarded to the Sanitary Board for revision.

(*c*) The latrine for females in the chattram is so constructed as to be impossible for use without incurring exposure of a gross description.

(*d*) *The market latrine.*—This remains in the unsatisfactory condition noted in paragraph 15 of my report, dated 26th November 1893.

(*e*) The latrine near the Agraharam is so completely out of order, that the best course to pursue is to abolish it without delay.

Chairman's Remarks.

(*i*) An estimate of the cost of carrying out this arrangement will be prepared, and if funds are forthcoming it will be adopted.

(*j*) The stream will in all probability be widened in connection with the drainage scheme now under the consideration of the Public Works department.

(*a*) The suggestion will be adopted when new latrines are built.

(*b*) Plans will be prepared and sent to the Sanitary Board for revision.

(*c*) The latrine was not built by the municipality and its position until the collapse of the adjoining house was not objectionable. A temporary screen will be put up now.

(*d*) An estimate will be prepared for a flush tank cistern, and on funds being available it will be put up.

(*e*) A new latrine cannot be constructed until the council can allot funds.

(*f*) The urinals under shelter in the market are as constructed and worked a nuisance, and shall be abolished. Designs for correct form by the Sanitary Board are now available.

(*f*) The Sanitary Board will be asked to supply the designs.

(*g*) The private latrines in use by natives are also in many cases of exceedingly bad patterns. I advise that the municipality obtain a suitable design, and exhibit it at their office, and subsequently require under section 207 that private latrines be of the approved form. Mr. Donaldson, Calcutta (Agent Mr. A. W. Macleod, C.E.), has for years given much study to this question, and several of the forms exhibited at the late Medical Congress Sanitary Exhibition, Calcutta, received universal approval from sanitarians.

(*g*) The Agent will be asked to supply an improved form of private latrine.

(*h*) Private scavenging was worked during 1894–95 *at a profit* of Rs. 2,965. The principle of making as low charges as possible for this service, so long as it is self-supporting should be followed.

(*i*) Night-soil is disposed of by burial in pits at Titicul. This should cease in favour of burial in *trenches* of a depth not exceeding 18″. This has, I understand, been adopted on account of the small amount of ground at disposal. It should be another argument in favour of the pail depôt system just mentioned, or, in its absence, of attempting to secure night-soil depôts at places nearer the sites of collection. Thus it seems very undesirable that the night-soil from Kodapamund should be dragged along certain of the most important roads of Ootacamund in order to reach Titicul. I understand the Chairman has already had the fact under consideration.

(*i*) This suggestion to secure night-soil depôts at places near the sites of collection will be referred to the sub-committee for conservancy for its consideration and report.

6. *Slaughter-houses*—(*a*) *For cattle.*—The floor requires repair. The wooden tub, and the filthy wooden table should be burnt. A hydrant should be supplied for flushing the floor.

(*b*) *For sheep.*—The flooring requires repair. There is a hydrant, but no hose. This should be arranged for. The gut contents should not be scattered by the butchers on the floor. Failing the municipality being able to afford a special gutting room, a mounted conservancy bucket should be supplied, into which the butchers should be directed to place all gut contents. There can be no object in first scattering these over the floor and then attempting to get rid of them by sweeping, &c.

6 and 7. *Slaughter-houses and Markets.*—Estimates are under preparation for repairing and improving these places.

Inspection Notes.

7. *Markets.*—(*a*) Much of the interior requires re-modelling. The butchers up to date use old wooden boxes instead of Cuddapah slabs for exposing their meat upon. These are soaked with filth. No drains are made in connection with the stalls. Ropes instead of polished iron or steel hooks are employed for suspending the meat. The necessity for these reforms was pointed out by the Deputy Sanitary Commissioner in his last inspection notes.

(*b*) The mutton butchers represented to me that, at the present time, they store meat in their houses, or put it into boxes in the market, and that they would prefer a store-room in the market. This, I think, a most desirable improvement, and one that would not be expensive. The beef butchers have already been provided with a store-room by the municipality, but the floors require a drain, and more ventilation is required. The meat too should be hung, and not placed upon slabs. Granted that the council cannot afford to bring the whole of the market into correct condition, *it should at least be possible for it to fit up correctly the stalls in daily use.*

8. *Offensive trades*—(*a*) *Bakeries.*—Those visited were of a character that should have forbidden absolutely the issue of licenses. The following cases are typical :—

(1) *Syed Hussain, bakery No.* 3, *Charcoal lane.*—The floor is earthen and wet. The room is absolutely dark, and the man works by an oil lamp. The kneading board is filthy. The room is part of a dwelling, in which four persons sleep.

(2) *Dada Meah* (*License No.* 350).—The room is absolutely dark without means of ventilation. The floor is earthen ; the table is filthy. Two persons sleep in this room at nights.

(3) There are numerous other bakeries in like evil condition. As bread-eaters in Ootacamund are numerous, attention to this point is necessary. Contrary to what might be expected, recent researches show that the heat acquired during baking is not sufficient to make certain that disease germs shall be killed in the interior of bread.

(4) In stables I inspected also the requirements laid down in the licenses had not been fulfilled—although in this matter a high standard need not be demanded.

Chairman's Remarks.

Even to fit up stalls requires money.

The conditions prescribed in a license for a bake-house are—

"The bake-house shall have a cemented floor, be well ventilated, drained, white-washed half-yearly, swept daily, the tables and other utensils used be kept thoroughly clean, and be subject to the inspection of the Sanitary officers of the Municipal Council."

The Sanitary Inspector in charge of the circle in which the bakeries referred to are situated is a European who was specially trained at municipal expense at Madras for sanitary work.

It is his duty to inspect the bakeries and to take such action as may seem necessary.

The Council would not do much good by prosecuting persons who have no other means of livelihood and who are unable to provide themselves with better accommodation.

The council has not heard of any deterioration of the health of the people who ordinarily eat the bread made by poor bakers.

(4) The suggestion is noted.

Inspection Notes

(5) The number of bandies found here and there in Kandal points to the necessity for a bandy-stand. This would be a profitable investment.

(6) *Dhobies.*—Ootacamund has the honour of being the first to undertake the sanitary discipline of dhobies. What was accomplished was not secured without a struggle, and the result reflects great credit upon the Chairman. It remains, however, to perfect the work thus commenced. In paragraph 22 of my report, dated 26th November 1893, I pointed out the necessity for no longer permitting washing in the same stream indiscriminately by dhobies, but arranging for storage of clean water, and filtration by under-drained ground before allowing return to the stream. Although improvement has been effected in the matter of storing filthy clothing separately from clean, this arrangement is not complete, and instances of conditions not being satisfied were found. It must further be remembered that the dhobies wash in water that has received the surface flow of not over-cleanly villages, and that the banks of streams are, at all times, the favourite easement resorts of natives. It is high time that some efforts were made to have properly supervised "dhobie khanas," such as are worked successfully in Bombay.

(7) In connection with this matter the Chairman has pointed out a very obvious defect, namely, that the clothing of children in the Lawrence Asylum is brought to Ootacamund for washing. Seeing that infectious diseases appear from time to time there, it is undesirable that this mingling of clothing should occur. Moreover, it is not advantageous to the children that they should run the risk of importation of disease from dhobies' huts in Ootacamund. In a large institution of this description, it is essential for safety that all laundry arrangements be effected on the spot.

(8) The question of providing Ootacamund with "model cow-sheds" has evidently been one long before the council; as I find in my report above referred to that I mention the matter as having already been mooted. Having regard to the fact that typhoid fever appears from time to time in Ootacamund, I trust that the question will be again considered by the council. The conditions under which the

Chairman's Remarks.

(5) The necessity for a cart-stand at Kandal has been long reorganised, but it could not be established from want of funds.

(6) The conditions prescribed in licenses granted to dhobies are as follows:—

"The storage room must be well ventilated, swept daily, kept thoroughly clean, white-washed half-yearly, and be subject to the inspection of the sanitary officers of the municipal council.

"The clothes of any person suffering from any disease likely to be contagious or of persons who may have died from any contagious disease must not be deposited in the house."

As soon as the north supply water scheme is improved, steps will be taken for acquiring land and establishing dhobie khanas.

The Collector of Nilgiris, who is one of the Directors of the Lawrence Asylum at Lovedale, will be addressed on this point.

(8) The council can only repeat what it has already said about model cow-sheds and unprotected milk supply in its note 6 on the notes of the Sanitary Commissioner in September 1893.

"Under existing conditions, the protection of the milk supply is difficult. There are no proper cattle-sheds and until the "gowlees" and others who supply the town with milk be induced to build suitable sheds apart from their dwellings and to keep the milk in separate

Inspection Notes.

milk supply is obtained are absolutely bad. The animals are maintained in highly overcrowded sheds in a filthy condition. The milk is stored in some cases within the houses and both here and by mode of transport I found risks of contamination I need not detail.

(9) At Kodapamund, the water supply considered by the milkman particularly good is a well which, on each of my visits to Ootacamund, I have found had close to it a mixed rubbish and dung heap.

(10) Above the stream used by the Kodapamund milkmen is a small settlement of dhobies. The position held by these men is most dangerous, having regard to the fact that even if milk be not adulterated with water containing the dhobies washings, the vessels are certainly washed with it. It is of the greatest importance that this settlement be got rid of. This might be arranged by refusing licenses for the inhabitants as dhobies on the ground of their occupying sanitarily undesirable positions and, secondly, offering compensation for their houses. The value of these is not likely to be much. If necessary, the Land Acquisition Act might be appealed to.

(11) I know the municipality is aware of the dangers pointed out; still, as time has passed and no action has been taken, I consider it my duty to again urge both the question of "dhobie khanas" and "gowlee khanas" upon the attention of the council. A loan followed by action under section 177, and careful supervision under section 185 would get over the difficulty.

9. *Vaccination*—is conducted economically with glycerine paste. This preparation keeps well in this cool climate, as might be expected in view of its extensive use in Europe. No action has been taken upon the suggestion to cease transmission from generation to generation by glycerine lymph, which was made both in my report of 1893 and in that of the Deputy Sanitary Commissioner of 1894.

The following shows the state of working of the compulsory clauses as to infantile vaccination.

Chairman's Remarks.

compartments, from those occupied by themselves, or their cattle, the milk must be more or less contaminated."

The licenses issued now to those who keep cattle-sheds contain the following conditions:—

"The cattle-shed must be well ventilated, metalled, drained, swept daily, kept thoroughly clean and be subject to the inspection of the sanitary officers of the municipal council.

"The sweepings or manure removed daily from the cattle-shed must not be deposited near the cattle-shed or near any other building, water channel or dust-bin."

(9) Notice will be served for the removal of the rubbish, &c.

(10) The Collector of Nilgiris was asked with reference to paragraph 9 of the Sanitary Board's Proceedings, dated 16th August 1895, No. 2286, "to assist as far as may be possible to prevent the erection of more huts at Kodapamund." The question of entirely getting rid of the dhoby settlement will doubtless be considered in connection with the improvement of the water-supply of the town.

9. These remarks will be communicated to the Civil Surgeon and the Municipal Vaccinator will be directed to conform to them.

Name of municipality.	Total births during preceding six months, i.e., 1st January to 30th June 1895.	Number vaccinated successfully.	Number vaccinated unsuccessfully for the first time.	Number vaccinated on second time because first operation proved unsuccessful.		Postponed under medical certificate at the end of six months.	Died.	Left the town.	Unaccounted for.	Ratio of successful to total births per cent.	Prosecution for failure to accept vaccination during the year up to date.		
				Successful.	Unsuccessful.						Number of suits filed.	Number of cases disposed of by magistrates.	Number of convictions.
Ootacamund	267	178	..	..	..	..	54	35	..	..	302	302	..

10. *Vital Statistics.*—The following are the statistics gathered during the last five years :—

Years.	Ratio of births per mille of estimated population.	Ratio of deaths per mille of estimated population.	Percentage of deaths from						Infantile mortality.
			Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa	Injuries.	Other causes.	
1892	29·2	22·2	0·3	1·2	24·9	14·3	2·3	57·0	119·0
1893	27·5	20·8	..	0·6	27·5	13·7	1·5	56·7	188·9
1894	30·1	23·7	0·3	..	29·1	10·0	..	60·6	258·7
1895	30·9	22·2	..	..	37·7	9·1	1·1	52·1	245·9
1896	27·6	19·7	..	..	29·2	6·6	1·4	62·8	152·2

I have in a memorandum separately communicated to the municipality dealing with their views embodied in G.O., No. 1864 M., dated 3rd December 1895, offered certain remarks on the subject.

11. *Sanitary Administration.*—Since my last inspection, the offence of common nuisance seems greatly to have increased in prevalence; a fact that argues that either the police are lax in their working of the Towns Nuisance Act, or that the punishments awarded by the magistracy are too lenient to be deterrent. No attempt has been made to work the ward system, as the council was invited to do in G.O., No. 648 M., dated 23rd May 1894, paragraph 7. Much good could undoubtedly be done by the councillors, if they would take upon themselves the task of fulfilling sanitary inspection in their respective wards, and taking an active interest generally in public and private conservancy and vaccination.

The record of progress during the last two years has been very disappointing * but this may in part be ascribed to the waiting for fulfilment of the major works of water-supply and sewerage, and greatly to the absence of funds necessary for fulfilment of anything more than the upkeep of existing condition. The gradual withdrawal of funds that had been given annually as a special aid towards

There is no order bearing this date and number in 1895, and the memorandum referred to has not yet been received.

Ward system.—The municipal council passed the following resolution on the point, and submitted it to the Government with letter No. 1264, dated the 6th February 1894 :—

"As regards the ward system, the council is of opinion that considering the straggling character of the town, it would not be convenient to introduce the system in this municipality."

*Yes; solely from want of funds.

Inspection Notes.

Chairman's Remarks.

sanitation by Government has undoubtedly seriously affected the possibility of advance. In other respects, the sanitary administration of the municipality reflects much credit upon the Chairman, whose energy is widely admitted.

COCANADA,
2*nd September* 1896.

(Signed) W. G. KING, Surgn.-Lieut.-Col.,
Sanitary Commissioner for Madras.

EXTRACT from the Proceedings of a meeting of the Ootacamund Municipal Council held on Monday the 5th October 1896.

* * * * *

No. XX. Read inspection notes, dated 2nd September 1896, of the Sanitary Commissioner for Madras, on the Ootacamund Municipality with Chairman's replies.

Resolution.—With reference to paragraph 11 of the notes, Colonel Stevenson will be requested to take charge of the following ward, viz., from Charing Cross along the north side of the main stream to Metucherry and bounded on the north by the Hospital road and Church hill road.

The notes with the Chairman's replies will be submitted to the Government.

N. Dis. No.

Forwarded.

2. The council is too straitened in means to do all it should, but further progress is hoped for. At the last meeting two wards were constituted and placed under ward councillors, viz., the main bazaar with the Agraharam and Metucheri; much advantage is expected from this, especially as the councillor in charge of the former ward is an officer so experienced in municipal work as Colonel Stevenson.

10*th October* 1896.

(Signed) H. TREMENHEERE,
Ag. Collector.

[L. & 1,000 — 1-96.]

Local & Munl. (1896) Department.

CURRENT No. 2759/96.

Press.

Order No 2021 dated 23-11-96

Recorded with the following remarks: —

(1) The action which the municipal council proposes to take on paragraphs 4(g) & 5(h) of the inspection notes has not been reported. This omission should be supplied at an early date.

(2) The work of inspecting bakeries, which is apparently ~~not~~ being ~~properly~~ inefficiently performed by the Sanitary Inspector, should be supervised by the Chairman and licenses should be refused in the case of bakeries that do not satisfy the conditions prescribed by the by-laws

(3) The Sanitary Commissioner's attention will be drawn

From
The chairman,
Municipal Council,
Ootacamund

No. 2637

Dated 6.10.96
Received 13.10.96.
Registered
Enclosures Two.
Spare copies

SUBJECT.

Submitting the Sanitary Commissioner's Inspection Notes on the Ootacamund Municipality.

especially as the Councillor in charge of the former board is officer so experienced in Municipal work as Col. Stevenson

drawn to the latter portion of the Chairman's remarks on para 10 of the notes. The Government order quoted in this paragraph is one of 1894 & not 1895.

DP 14/11/96

S.R. 20/11/96

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

To

1 The Chairman, M.C. Ootacamund
2 " Collector of Nilgiris
4 " Sanitary Engineer
Commissioner
" "

Editors' Table. D.P. 16/12/96

No. 2637.

Ootacamund Municipal Office,
6th October 1896

Circ. No. 1387/96

Rec'd 8 Oct. 1896

From

THE CHAIRMAN,
MUNICIPAL COUNCIL,
OOTACAMUND.

Enclosures 1

To

The Honorable A.J. Arundel
Acting Chief Secretary to the Government,
Fort Saint George.
Through the Collector of Nilgiris.

Sir,

I have the honor to submit for the consideration and orders of His Excellency the Governor in Council, the notes of the Sanitary Commissioner for Madras, on his inspection of the Ootacamund Municipality on the 11th to 19th June 1896, together with an extract from the Proceedings of a meeting of the Municipal Council, held on the 5th instant.

I have the honor to be,
Sir,
Your most obedient Servant,

W. Ramsay
Chairman

D.P. 11-10.
N. Dis.

Forwarded. The Council is too straitened in means to do all it should, but further progress is hoped for. At the last meeting two wards were constituted 9th & placed under two Councillors - viz the main Bazaar with the Agraharam, & Metuchery; much advantage is expected from this, especially as the Councillor in charge of the former ward is office so experienced in Municipal work as Col Stevenson

1000.
9-9-96.

Inspection Notes of the Sanitary Commissioner for Madras.

Nilgiri District

Ootacamund Municipality

Population as per census of 1891 – 15053

Inspected 11th to 19th June 1896.

Roads. These, I consider, are in a creditable condition.

2. Dwellings (a) Overcrowding exists in certain parts of the native town. (b) Having determined by careful inspection the nature of action required under sections 187 and 226, I would advise the Council to frame estimates with the object of ascertaining whether it could not, with financial safety, build under section 177 model native dwellings for the poor, and let them for reasonable rent upon the proceeds of a loan from Government (vide G.O. No. 415 Financial dated 8th July 1896 para 7,

(a) The Government was addressed regarding "Overcrowding" of buildings, on the 25 September 1893, 22nd February 1896 and 1st August 1896 in view to municipal Councils being vested with larger powers than they now possess to prevent overcrowding.

(b) The Sanitary Commissioner's suggestion is a most laudable one, but there is no vacant land in this municipality which is vested in the municipal Council nor has the Municipal Council any funds which it can appropriate for the erection of buildings to be leased on favourable terms to the poor.

(c) Municipal Chattram.
The flooring requires — repair. Correct removal of sullage water should be arranged for.

(C) Will be attended to.

(d) Municipal Market Chattram - demands similar attention.

(d) Will be attended to.

(e) Caste Chattram. Ventilation of the centre room requires attention.

(e) This is an endowed chuttrum. The endowment is Rs 120 per annum the whole of which goes towards a care-taker, oil &c. Rs 175 were spent on repairs from municipal funds in 1895-96.

(f) The Chattram accommodation in this town is insufficient for the requirements of the fluctuating population.

(f) Yes - and if funds were available the Council would build a school-house and vacate the portion of the Chuttrum in the main Bazaar now appropriated for the Municipal Bazaar School.

3. Water supply. (a) In my Report for 1893, I have entered fully into the question of water supply of Vizagapatam. Excellent water is doubtless available, but the methods of collection are not such as to ensure that its pristine purity shall be retained. Irrespective of the requisite improvements

(3) Water supply. The improvement of the water supply is at present under investigation by Mr. Walch vide para 4 (c) of G. O. No. 1363. M. dated 14th August 1896. A copy of these remarks will be supplied to him.

of cutting off inhabited areas both in the Narlimmund and Bodabetta supplies, there can be no doubt that a mistake was committed in storing water at Narlimmund. Several of the purest supplies of Great Britain are collected from peaty sources, but a peat bog is not willingly selected for their storage. The two things are very different. This may be simply illustrated by the fact that when Major Morant selected the site he found water issuing from it that compared with that of Sick Katrine for purity. Now the water is a strong infusion of decomposing vegetable matter, with possible traces of the perilous washings

7

of animal origin from the neighbouring estate. In the matter of microbes, I found on bacteriological examination the Marlimound supply contained about 5 times more than, according to Koch, is permissible in a water intended for drinking purposes, and this without the aid of a temperature favourable for full development. In my Report above alluded to, I have added to the description of the conditions found here the following:-

"Major Morant and the Sanitary Engineer have advised that the water (Marlimound supply) should be distributed after filtration. This also would be desirable; but before adopting it, it would be requisite to ascertain whether it would be absolutely necessary to accept so very low a type of water, and use it after attempted purification. This precautionary policy has been adopted by the Sanitary Board under orders from Government, and I presume a reply as to the financial possibility of the matter will be shortly before the Municipality. Should it be found impossible to face the expenditure following abandonment of this reservoir, it will be necessary to filter the water after subjecting it to the action of Anderson's Revolvers, as has been advised by me in connection with the necessity of supplying at

at least certain houses.
I trust the Council will
understand distinctly
that my endeavour has
been not to plunge them
recklessly into expense
by abandonment of an
important feature - albeit
a peat bog - of the water
works; but, on the opposite,
by demanding careful
investigation before
action is taken, one way
or the other, to ensure
that they shall obtain
the best return for the
money to be expended.
(b) Water derived from
peaty sources has been
found to encourage
the growth of microbes
which by giving an acid
reaction readily brings
about corrosion of lead.
The extent to which it
would be safe to use
lead piping in Ooty
houses should be de-
finitely settled by the
Chemical

c. The Marlimund
reservoir has been estimated
by the Sanitary Engineer to Government, to
contain about 42000000 gallons which equals
a year's supply at 20 gallons per head per
diem for 5700 people or at 15 gallons per head
for 7600 people. The number of people
actually served is about 10727. and if the inter-
-mission supply of water had not been enforced
the people would have had no water during some
months of the year.

Meanji Saib's water taps were
laid by the late Municipal Engineer
an extract from this note will be
now sent to Meanji Saib with a
request that the taps may be
placed in less objectionable
positions.

Chemical Examiner.
(c) Insinuation of foul
gases and foul matters
from the soil is liable
to attend intermission
of water supply where
leaks, defective joints,
or defective valves and
taps are present. Danger
of this occurring is
found in the erroneous
position of Meanji Saib's
water taps, and the
running through the
sewage contaminated
stream of a pipe to
the pavilion in the
Gymkhana ground.
An instance of the dan-
-ger of household
storage following in-
-termission also came
to my notice in an
important hotel. In-
-termission of the sup-
-ply should therefore
be only practised under
the most urgent condi-
-tions. It is not likely
waste

waste otherwise than by the leaking of taps occurs in thickly populated quarters; but it is exactly here that intercommission is most dangerous. Economy would be best served by rigid attention to fittings. The following is the result of experiment by a recent author on the point:—

Description of fitting	Gallons wasted per 24 hours.
½ in: ×, washer bad —	700
⅜ in: tap " "	920
¾ in: tap screw stripped	12,720
⅜ in: tap washer bad	900
Taps left open ⅜ in: —	23,520
½ in: —	12000
⅜ in: —	9600

Waste in gardens and in large houses generally is not easily prohibited. Control

Contd

(d) The Conservancy of this portion of the town is now in charge of a Sanitary Inspector kindly selected by the Sanitary Commissioner and the Council hopes that he will pay greater attention to the cleanliness of the place than the Inspector whom he has succeeded.

could be obtained by the use of meters.

(d) Old Privy supply. Within a few yards of the spring head was found fecal matter. Within 25 yards of the gallery is an open excavation, from which water evidently is largely drawn by persons in the neighbourhood. A shower of rain would at any time bring the fecal matter mentioned within this open cistern, and the chances of safety by filtration through 25 feet of soil already permeated with a strong spring would be small. This opening cannot have been made with the consent of the Municipality, and action should be taken to close it without delay.

In the event of water scarcity

scarcity in future, I advise old wells in inhabited areas not to be opened but that tube wells be sunk— for obvious sanitary reasons.

Tube wells. The Council has no funds for carrying out this suggestion.

4. Sewerage. (a) The necessity for complete revision of the sewerage of Mortlochery and the Bazaar was duly placed before the Council by me at a special meeting in June 1895. The matter is now being dealt with by the Sanitary Board.

(b) The intercepting sewer has now become an intolerable nuisance, and its overflow has resulted in serious contamination of the remaining part of the Upper Lake. The open drains of Orby are largely used by natives for purposes of nature, and consequently during rainfall a considerable portion of the

(b) The question of rectifying defects in the intercepting sewer is under the consideration of the Government. Vide para 4 (b) of G. O. No 1363 dated 14th August 1896.

More latrines are required in the heart of the town to admit of this objectionable practice being suppressed.

These remarks will be communicated to the Executive Engineer who has charge of the filling in of the upper portion of the lake, and also the improvement of the intercepting sewer.

the faecal matter is washed down into the defective main sewer and thence into the Upper Lake. The water of this Lake has been so highly charged with sewage as to prevent natural processes of self-purification. Sewage contamination is therefore rapidly getting the upper hand. The condition sufficiently explains the prevalence of sore throat, and of mus-quitoes in Orby of late. The remodelling of this highly defective main sewer should proceed with as little delay as possible.

Speaking without a knowledge of the levels, I consider it is worth enquiring whether this diluted sewage cannot be got rid of by making a special

special temporary con-
-nection with the sewer
passing below the Lake.
(c) The Gymkhana ground
and the part of the Lake
after filling should be
under-drained. The
Report of Surgeon General
Gordon C.B. styles it the
"best catch-hold" place
in Orly, and as it will
remain unless this be
attended to.
(d) Obtacamund was
just as nearly obtaining
a decently constructed
pipe sewerage system
at the hands of Major
Tulloch in the sixties
as it is today at the
hands of Mr. Ashpital
in view of the financial circumstances of the Council,
Hence, I am by no means
decided as to what the
future may bring forth.
If pipe sewerage be
adopted, either by "pail
depôts" or by direct
connection of specially
constructed water latrines,
removal

removal of night soil
will be effected through the sewers to a sewage farm
and the night soil
cart era will have dis-
appeared. If pipe
sewerage be not adopted,
provided the main
sewer be in correct
order, and be furnished
with a flush tank, as
contemplated by Mr.
Ashpital, there can be
no reason why "pail
depôts" should not be
adopted over the
main sewer, and thus
flush the night soil
to the long-promised
sewage farm - vide G.O.
No. 648 M dated 23rd May 1874 &c.
(e) The Kandal sewer
might be similarly used.
Great economy in
carting would result
irrespective of profit
from the farm. Pail
depôts on this system
are largely relied
upon

upon in Calcutta, Bombay, and Ahmedabad.

(f) Where houses and hotels are detached from the present sewerage system, it would be well if the Municipality saw that either filtration or sewage farming in small plots were adopted vide accompanying Circular — Memorandum.)

(f) The suggestion involves expenditure which the Municipal Council is unable to incur for want of funds.

(g) Meanjee Saib's Lines have drains which are in disrepair. Under section 210, the shape should be altered from the square to the ovoid. A special catch-pit and grid should be provided at junction with the main drain.

(g) Correspondence has been going on since June last regarding the condition of these drains. An extract from this note will be sent to Messrs. Meanjee Saib's with the intimation that the alteration of the drains and the construction of the catch-pits shall be carried out without delay.

(h) In case of the Kandal drainage system, I am glad to find my advice as to getting rid of the useless catch-pits has

(i) An estimate of the cost of carrying out this arrangement will be prepared, and if funds are forth-coming it will be adopted.

has been attended to. It remains however to modify, on the same principles, the sumps along the main sewer. These are sanitarily unfit for their purpose.

(i) It would be of considerable advantage in keeping the Kandal bazaar open street drain in a cleanly condition, if intermittent flushing were arranged for by means of one of Doulton's — Automatic flush syphons, working under a small feeding tube placed in the public water standpost, which is situated exactly at the head of the drain near the Police lines. One of these useful flushing tanks could be procured from Messrs Doulton & Co Lambeth London

London for about £1.13.-.

(j) In para 5 of my former Report, I pointed out the hardship suffered by the Agraham inhabitants by reason of floods. My impression then was that this was due to the high flood level of the Lake. I have been assured by a good authority that this is not so, and that the real cause is the absence of sufficient breadth of the stream. If this be so, the remedy is simple and should be applied.

(j) The stream will in all probability be widened in connection with the drainage scheme now under the consideration of the Public Works Department.

5. Night soil conservancy.

(a) In the majority of the old type of latrines the prime idea of separating the urine from the fæces has not been followed. They are consequently very offensive. If it so happens that the water carriage system be indefinately deferred, I would advise the Municipality in forming new latrines to arrange that they be worked correctly with automatic hoppers for depositing dried and powdered peat upon the fæcal matter, as a deodorant. Under this system, the urine should be collected separately from the fæces. The Council has at disposal the best peat bog in Ootacamund, namely the Marlimund reservoir. From this they have already withdrawn 82,392 cubic feet of peat without sensibly diminishing its supplies.

(a) The suggestion will be adopted when new latrines are built.

(b) As to the old latrines, it might be possible at little cost to so modify them as to render them less offensive. To this end, I would advise that accurate plans be prepared and be forwarded to the Sanitary Board for revision.

(b) Plans will be prepared and sent to the Sanitary Board for revision.

(c) The

(c) The latrine for females in the Chattram is so constructed as to be impossible for use without incurring exposure of a gross description.

(C) The latrine was not built by the Municipality and its position until the collapse of the adjoining house was not objectionable! A temporary screen will be put up now.

(d) The Market latrine. This remains in the unsatisfactory condition noted in para 15 of my Report dated 26th November 1893.

(d) An estimate will be prepared for a flush tank cistern, and on funds being available it will be put up.

(e) The latrine near the Agraharam is so completely out of order, that the best course to pursue is to abolish it — without delay.

(e) A new latrine cannot be constructed, until the Council can allot funds.

(f) The urinals under shelter in the Market are as constructed and worked a nuisance, and should be abolished. Designs for correct form by the Sanitary Board are now available.

(f) The Sanitary Board will be asked to supply the designs.

(g) The private latrines in use by natives are also in many cases of exceedingly bad patterns. I advise that the Municipality obtain a suitable design, and exhibit it at their office, and subsequently require under Section 207 that private latrines be of the approved

(g) The Agent will be asked to supply an improved form of private latrine.

approved form. Mr Donaldson Calcutta (agent Mr A. W. Macleod CE) has for years given much study to this question, and several of the forms exhibited at the late Medical Congress Sanitary exhibition — Calcutta received universal approval from sanitarians.

(h) Private scavengering was worked during 1894/95 at a profit of Rs 2,965. The principle of making as low charges as possible for this service, so long as it is self supporting should be followed

(i) Night soil is disposed of by burial in pits at Titicul. This should cease in favour of burial in trenches of a depth not exceeding 18". This has, I understand, been adopted on account of the small amount of ground at disposal. It should be another argument in favour of the pail depôt system just mentioned, or, in its absence, of attempting to secure night soil depôts at places nearer the sites of collection. Thus it seems

(i) This suggestion to secure night soil depôts at places near the sites of collection will be referred to the Sub Committee for Conservancy for its consideration and report.

seems very undesirable that the night soil from Kodaganmud should be dragged along certain of the most important roads of Cotacammud in order to reach Titicul. I understand the Chairman has already had the fact under consideration.

6 Slaughter houses. (a) For cattle. The floor requires repair. The wooden tub, and the filthy wooden table should be burnt. A hydrant should be supplied for flushing the floor.

(b) For sheep. The flooring requires repair. There is a hydrant, but no hose. This should be arranged for. The gut contents should not be scattered by the butchers on the floor. Failing the Municipality being able to afford a special gutting room, a mounted conservancy bucket should be supplied, into which the butchers should be directed to place all gut contents. There can be no object in first scattering these over the floor and then

647. Slaughter-Houses & Market. Estimates are under preparation for repairing and improving these places.

then attempting to get rid of them by sweeping &c.

7. Markets. (a) Much of the interior requires remodelling. The butchers up to date use old wooden boxes instead of Cuddapah slabs for exposing their meat upon. These are soaked with filth. No drains are made in connection with the stalls. Ropes instead of polished iron or steel hooks are employed for suspending the meat. The necessity for these reforms was pointed out by the Deputy Sanitary Commissioner in his last Inspection notes.

(b) The mutton butchers represented to me that at the present time they store meat in their houses, or put it into boxes in the market, and that they would prefer a store room in the market. This, I think, a most desirable improvement, and one that would not be expensive. The beef butchers have already been provided with a store room by the Municipality, but the floors require

require a drain, and more ventilation is required. The meat too should be hung, and not placed upon slabs. Granted that the Council cannot afford to bring the whole of the market into correct condition, it should at least be possible for it to fit up correctly the stalls in daily use.

Even to fit up stalls requires money.

8. Offensive trades (a) Bakeries. Those visited were of a character that should have forbidden absolutely the issue of licenses. The following cases are typical:-

(1) Syed Hussain bakery No 3 Charcoal lane. The floor is earthen, and wet. The room is absolutely dark, and the man works by an oil lamp. The kneading board is filthy. The room is part of a dwelling, in which four persons sleep.

(2) Dada Meah (license No 350.) The room is absolutely dark, without means of ventilation. The floor is earthen; the table is filthy. Two persons sleep in this room at nights.

(3) There

The conditions prescribed in a license for a bake-house are:

"The bake house shall have a "Cemented floor, be well ventilated "drained, whitewashed half yearly "swept daily, the tables and other "utensils used be kept thoroughly "clean, and be subject to the "inspection of the Sanitary officers "of the Municipal Council."

The Sanitary Inspector in Charge of the Circle in which the bakeries referred to are situated is a European who was specially trained at Municipal expense at Madras for Sanitary work.

It is his duty to inspect the bakeries and to take such action as may seem necessary.

The Council would not do much good by prosecuting persons who have no other means of livelihood and who are unable to provide themselves with better accommodation.

The Council has not heard of any deterioration of the health of the people who ordinarily eat the bread made by poor bakers.

(4) The suggestion is noted.

(5) The necessity for a canteen at Kandal has been long recognized, but it could not be established from want of funds.

(6) The conditions prescribed in licenses granted to Dhobies are as follows:-

"The storage room must be "well ventilated, swept daily "kept thoroughly clean, whitewashed "half yearly, and be subject "to the inspection of the sanitary "officers of the municipal Council

"The clothes of any person "suffering from any disease likely

There are numerous other bakeries in like evil condition. As bread eaters in Cotacamund are numerous, attention to this point is necessary. Contrary to what might be expected, recent researches show that the heat acquired during baking is not sufficient to make certain that disease germs shall be killed in the interior of bread.

(4) In stables. I inspected also the requirements laid down in the licenses had not been fulfilled although in this matter a high standard need not be demanded.

(5) The number of bandies found here and there in Kandal, points to the necessity for a bandy stand. This would be a profitable investment.

(6) Dhobies. Cotacamund has the honor of being the first to undertake the sanitary discipline of dhobies. What was accomplished was not secured without a struggle, and the result reflects great credit upon the Chairman. It remains, however, to perfect the work thus commenced. In para 22 of my report

report dated 26th November 1893, I pointed out the necessity for no longer permitting washing in the same streams indiscriminately by dhobies, but arranging for storage of clean water, and filtration by under drained ground before allowing return to the stream. Although improvement has been effected in the matter of storing filthy clothing separately from clean, this arrangement is not complete, and instances of conditions not being satisfied were found. It must further be remembered that the dhobies wash in water that has received the surface flow of not over cleanly villages, and that the banks of streams are at all times the favorite easement resorts of natives. It is high time that some efforts were made to have properly supervised "dhobie khanas", such as are worked successfully in Bombay.

(7) In connection with this matter the Chairman has pointed out a very obvious defect, namely, that the clothing of children in the

"likely to be contagious, or of persons who may have died from any Contagious disease must not be deposited in the house.

As soon as the North Supply water scheme is improved, steps will be taken for acquiring land and establishing dhobie khanas.

The Collector of Nilgiris who is one of the Directors of the Lawrence Asylum at Lovedale will be addressed on this point.

the Lawrence Asylum is brought to Ootacamund for washing seeing that infectious diseases appear from time to time there, it is undesirable that this mingling of clothing should occur. Moreover it is not advantageous to the children that they should run the risk of importation of disease from dhobies' huts in Ooty. In a large institution of this description, it is essential for safety that all laundry arrangements be effected on the spot.

8. The Council can only repeat what it has already said, about model cowsheds and unprotected milk supply, in its note b on the notes of the Sanitary Commissioner in September 1893.

"Under existing conditions, the "protection of the milk supply is difficult. "There are no proper cattlesheds "and until the "gowlis" and others "who supply the towns with milk "be induced to build suitable "sheds apart from their dwellings "and to keep the milk in separate "Compartments, from those occupied "by themselves, or their cattle, the "milk must be more or less "Contaminated.

The licenses issued now to those who keep cattlesheds contain the following conditions.

"The cattlesheds must be "well ventilated, metalled, drained "swept daily, kept thoroughly clean "and be subject to the inspection

(8) The question of providing Ootacamund with "model cow sheds" has evidently been one long before the Council; as I find in my Report above referred to that I mention the matter as having already been mooted. Having regard to the fact that typhoid fever appears from time to time in Ooty, I trust that the question will be again considered by the Council. The conditions under which the milk supply is obtained are absolutely bad. The animals are maintained in highly

highly overcrowded sheds in a filthy condition. The milk is stored in some cases within the houses and both here and by mode of transport I found risks of contamination I need not detail.

(9) At Kodapamund, the water supply considered by the milkman particularly good is a well which, on each of my visits to Coty, I have found had close to it a mixed rubbish and dung heap.

(10) Above the stream used by the Kodapamund milkmen, is a small settlement of dhobies. The position held by these men is most dangerous, having regard to the fact that even if milk be not adulterated with water containing the dhobies washings, the vessels are certainly washed with it. It is of the greatest importance that this settlement be got rid of. This might be arranged by refusing licenses for the inhabitants as dhobies, on the ground of their occupying sanitarily undesirable position

of the Sanitary officers of the Municipal Council".

"The sweepings or manure removed daily from the Cattlesheds must not be deposited near the Cattlesheds or near any other building, water channel or dust bin"

(9) Notice will be served for the removal of the rubbish &c.

10. The Collector of Nilgiris was asked with reference to para 9. of the Sanitary Board's Proceedings dated 16 August '95 No 2286 "to assist as far as may be possible to prevent the erection of more huts at Kodappamund". The question of entirely getting rid of the dhoby settlement will doubtless be considered in connection with the improvement of the water-supply of the town.

9. These remarks will be communicated to the Civil Surgeon and the Municipal Vaccinator will be directed to conform to them.

positions and, secondly, offering compensation for their houses. The value of these is not likely to be much. If necessary, the Land acquisition act might be appealed to.

(11) I know the Municipality is aware of the dangers pointed out; still, as time has passed and no action has been taken, I consider it my duty to again urge both the question of "dhobie khanas" and "bowler khanas" upon the attention of the Council. A loan followed by action under section 177, and careful supervision under section 185 would get over the difficulty.

(9). Vaccination is conducted economically with glycerine paste. This preparation keeps well in this cool climate, as might be expected in view of its extensive use in Europe. ~~The following exhibits the result of the working of the compulsory clauses.~~ No action has been taken upon the suggestion to cease transmission from generation to generation by glycerine lymph which was made both in my

Report

Report of 1893 and in that of the Deputy Sanitary Commissioner of 1894-

The following shows the state of working of the compulsory clauses as to infantile Vaccination.

Name of Municipality	Total Children living & under 15 yrs. of age 30th June 1896 - Number Vaccinated - Medical Statistics	Number Vaccinated successfully for the first time	Number Vaccinated unsuccessfully for the first time	Success - full	Insufficient	Postponed under Sec. 10 of Act 5 of 1878	Died	Left the Town	Evasions	Marks of Syphilis & other Cachexia	Amount to be paid to Vaccinators during the year up to date	Amount of Grant allotted by Magistrate	Amount of Commission
Ootacamund	267	178	-	-	-	-	54	35	-	-	302	302	-

10. Vital Statistics. The following are the statistics gathered during the last five years:-

Years	Ratio of Births per mille of estimated population.	Ratio of deaths per mille of estimated population	Percentage of deaths from Cholera	Small pox	Fevers	Dysentery and Diarrhœa	Injuries	Other Causes	Infantile mortality
1892.	29·2	22·2	0·3	1·2	24·9	14·3	2·3	57·0	191·0
1893.	27·5	20·8		0·6	27·5	13·7	1·5	56·7	188·9
1894.	30·1	23·7	0·3	-	29·1	10·0	-	60·6	258·7
1895.	30·9	22·2	-	-	37·7	9·1	1·1	52·1	245·9
1896.	27·6	19·7	-	-	29·2	6·6	1·4	62·8	152·2

I have in a memo se- -parately communicated to the Municipality dealing with their views

There is no order bearing this date and no. in 1895, and the memorandum referred to

to has not yet been received.

Ward system. The municipal Council passed the following resolution on the point, and submitted it to the Government with letter no. 1264 dated the 6th February 1894.

"As regards the ward "system, the Council is of opinion "that considering the straggling "character of the town, it would "not be convenient to introduce the system in this "municipality"

X Yes; solely from want of funds.

G. W. Hammett
Chairman
26. Septr. 96.

views embodied in G.O. No. 1864 Mc dated 3rd December, 1895 offered certain remarks on the subject.

11. Sanitary Administration - Since my last inspection, the offence of common nuisance seems greatly to have increased in prevalence, a fact that argues that either the police are lax in their working of the Towns Nuisance Act, or that the punishments awarded by the magis- -tracy are too lenient to be deterrent. No attempt has been made to work the ward system, as the Council was invited to do in G.O. No. 648 M dated 23rd May 1894 para 7. Much good could undoubtedly be done by the Councillors, if they would take upon themselves the task of fulfilling Sanitary inspection in their respective wards, and taking an active interest generally in public and private conservancy and Vaccination.

The record of progress during the last two years has been very disappointing but this may in part be ascribed to the waiting for fulfilment of the

of the major works of water supply and sewerage, and greatly to the absence of funds necessary for fulfilment of anything more than the upkeep of existing condition. The gradual withdrawal of funds that had been given annually as a special aid towards sanitation by Government, has undoubtedly seriously affected the possibility of advance.

In other respects, the sanitary administration of the Municipality reflects much credit upon the Chairman, whose energy is widely admitted

W. King
Surgeon-Lieut Col:
Sanitary Commissioner.

Office of Sanitary Commr:
Camp Coonoor 2nd Sept 1896.

~~No.~~

Extract from the Proceedings of a Meeting of the Ootacamund Municipal Council held on ~~Saturday~~ Mon. day the 5th October 1896.

~~Subject No.~~

Present.

The Chairman
J. H. A. Tremenheere Esqre
J. Browne Esqre
Revd C. Bioley
W. E. Smith Esqre
Sithic Bin Meanjee Sait Sahib

RESOLUTION:—

Subject No. XV.

Read inspection notes dated 2nd September 1896, of the Sanitary Commissioner for Madras, on the Ootacamund Municipality with Chairman's replies.

"With reference to para 11 of the notes, Col: Stevenson will be requested to take charge of the following ward (viz) From charing cross along the north side of the main stream to Metuchery and bounded on the north by the Hospital road and Church hill road.

The notes with the Chairman's replies will be submitted to the Government."

MUNICIPAL OFFICE,
OOTACAMUND, 7th October 1896.

(True Extract)
W. Arnott
Chairman.

To

The Hon: A. J. Arundel
Acting Chief Secretary to the Government
Fort Saint George

2
2759 Instt

100.
8-9-96.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Local & Munl. (1896) Department.

CURRENT No. 2759 M

From

The Chairman
Municipal Council
Ootacamund.

Order.

No. 2637

Dated 6th October 1896.

Received 13 OCT. 96

Registered "

Enclosures Two.

Spare copies

SUBJECT.

Submitting with resolution of the Council dated 5th october '96, for the consideration of the Government, the notes of the Sanitary Commissioner, on his inspection of the Ootacamund Municipality.

Government {1896} of Madras.

LOCAL AND MUNICIPAL.

Recd. } 1896. *Enclosures*

Regd. } *Spare copies*

G.O., No. 2021 M., 23rd November 1896.

NOVEMBER.

Inspection Notes.

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

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper:—

From G. HAMNETT, Esq., Chairman, Municipal Council, Ootacamund, to the Acting Chief Secretary to Government (through the Collector of Nilgiris), dated 6th October 1896, No. 2637.

I have the honour to submit, for the consideration and orders of His Excellency the Governor in Council, the notes of the Sanitary Commissioner for Madras on his inspection of the Ootacamund Municipality on the 11th to 19th June 1896, together with an extract from the Proceedings of a Meeting of the Municipal Council held on the 5th instant.

ENCLOSURES.

INSPECTION notes of the Sanitary Commissioner for Madras.

NILGIRI DISTRICT.

OOTACAMUND MUNICIPALITY.

Inspected, 11*th to* 19*th June* 1896.

Population as per census of 1891 15,053

Inspection Notes.

Roads.—These, I consider, are in a creditable condition.

2. *Dwellings*.—(*a*) Overcrowding exists in certain parts of the native town.

(*b*) Having determined by careful inspection the nature of action required under sections 187 and 226, I would advise the council to frame estimates with the object of ascertaining whether it could not, with financial safety, build under section 177 model native dwellings for the poor, and offer them for reasonable rent upon the proceeds of a loan from Government—*vide* G.O., No. 415, Financial, dated 8th July 1896, paragraph 7.

(*c*) *Municipal Chattram*.—The flooring requires repair. Correct removal of sullage water should be arranged for.

Chairman's Remarks.

(*a*) The Government was addressed regarding the "overcrowding" of buildings on the 25th September 1895, 22nd February 1896 and 1st August 1896 in view to municipal councils being vested with larger powers than they now possess to prevent overcrowding.

(*b*) The Sanitary Commissioner's suggestion is a most laudable one, but there is no vacant land in this municipality which is vested in the municipal council, nor has the municipal council any funds which it can appropriate for the erection of buildings to be leased on favourable terms to the poor.

(*c*) Will be attended to.

Inspection Notes.

(*d*) *Municipal Market Chattram*.—Demands similar attention.

(*e*) *Caste Chattram*.—Ventilation of the centre room requires attention.

(*f*) The chattram accommodation in this town is insufficient for the requirements of the fluctuating native population.

3. *Water-supply*.—(*a*) In my report for 1893 I have entered fully into the question of water-supply of Ootacamund. Excellent water is doubtless available, but the methods of collection are not such as to ensure that its pristine purity shall be retained. Irrespective of the requisite improvements of cutting off inhabited areas both in the Marlimund and Dodabetta supplies, there can be no doubt that a mistake was committed in storing water at Marlimund. Several of the purest supplies of Great Britain are collected from peaty sources, but a peat bog is not wittingly selected for their storage. The two things are very different. This may be simply illustrated by the fact that when Major Morant selected the site he found water issuing from it that compared with that of Lock Katrine for purity. Now the water is a strong infusion of decomposing vegetable matter, with possible traces of the perilous washings of animal origin from the neighbouring estate. In the matter of microbes, I found on bacteriological examination the Marlimund supply contained about five times more than according to Koch, is permissible in a water intended for drinking purposes, and this without the aid of a temperature favourable for full development. In my report above alluded to, I have added to the description of the conditions found here the following:—

"Major Morant and the Sanitary Engineer have advised that the water (Marlimund supply) should be distributed after filtration. This also would be desirable, but before adopting it, it would be requisite to ascertain whether it would be absolutely necessary to accept so very low a type of water and use it after attempted purification."

This precautionary policy has been adopted by the Sanitary Board under orders from Government, and I presume a reply as to the financial possibility of

Chairman's Remarks.

(*d*) Will be attended to.

(*e*) This is an endowed chattram. The endowment is Rs. 120 per annum, the whole of which goes towards a care-taker, oil, &c. Rs. 175 were spent on repairs from Municipal funds in 1895–96.

(*f*) Yes, and if funds were available the council would build a school-house and vacate the portion of the chattram in the main bazaar now appropriated for the municipal bazaar school.

(3) *Water-supply*.—(*a*) The improvement of the water-supply is at present under investigation by Mr. Walch—*vide* paragraph 4 (5) of G.O., No. 1363 M., dated 14th August 1896. A copy of these remarks will be supplied to him.

Inspection Notes.

the matter will be shortly before the municipality. Should it be found impossible to face the expenditure following abandonment of this reservoir, it will be necessary to filter the water after subjecting it to the action of Anderson's revolvers, as has been advised by me in connection with the necessity of supplying at least certain houses. I trust the council will understand distinctly that my endeavour has been not to plunge them recklessly into expense by abandonment of an important feature—albeit a peat bog—of the water-works ; but, on the opposite, by demanding careful investigation before action is taken, one way or the other, to ensure that they shall obtain the best return for the money to be expended.

(*b*) Water derived from peaty sources has been found to encourage the growth of microbes which by giving an acid re-action readily brings about corrosion of lead. The extent to which it would be safe to use lead-piping in Ooty houses should be definitely settled by the Chemical Examiner.

(*c*) Insuction of foul gases and foul matters from the soil is liable to attend intermission of water-supply where leaks, defective joints, or defective valves and taps are present. Danger of this occurring is found in the erroneous position of Meanjee Sait's water-taps, and the running through the sewage-contaminated stream of a pipe to the pavilion in the Gymkhana ground. An instance of the danger of household storage following intermission also came to my notice in an important hotel. Intermission of the supply should therefore be only practised under the most urgent conditions. It is not likely waste, otherwise than by the leaking of taps, occurs in thickly populated quarters ; but it is exactly here that intermission is most dangerous. Economy would be best served by rigid attention to fittings. The following is the result of experiment by a recent author on the point :—

Description of fitting.	Gallons wasted per 24 hours.
½ inch washer, bad	700
½ inch tap „ „	920
½ inch tap, screw stripped ..	12,720
½ inch tap washer, bad ..	900
Taps left open—	
½ inch	23,520
½ inch	12,000
½ inch	9,600

Chairman's Remarks.

(*c*) The Marlimund reservoir has been estimated by the Sanitary Engineer to Government to contain about 42,000,000 gallons, which equals a year's supply at 20 gallons per head per diem for 5,750 people or at 15 gallons per head for 7,600 people. The number of people actually served is about 10,727 and if the intermission supply of water had not been enforced, the people would have had no water during some months of the year.

Meanjee Sait's water taps were laid by the late Municipal Engineer ; an extract from this note will be now sent to Meanjee Sait with a request that the taps may be placed in less objectionable positions.

Inspection Notes.

Waste in gardens and in large houses generally is not easily prohibited. Control could be obtained by the use of meters.

(*d*) *Old Ootacamund supply.*—Within a few yards of the spring head was found fœcal matter. Within 25 yards of the gallery is an open excavation, from which water evidently is largely drawn by persons in the neighbourhood. A shower of rain would at any time bring the fœcal matter mentioned within this open cistern and the chances of safety by filtration through 25 feet of soil already permeated with a strong spring would be small. This opening cannot have been made with the consent of the municipality, and action should be taken to close it without delay.

In the event of water scarcity in future I advise old wells in inhabited areas not to be opened, but that tube wells be sunk for obvious sanitary reasons.

4. *Sewerage* (*a*).—The necessity for complete revision of the sewerage of Mootoocheri and the bazaar was duly placed before the council by me at a special meeting in June 1895. The matter is now being dealt with by the Sanitary Board.

(*b*) The intercepting sewer has now become an intolerable nuisance, and its overflow has resulted in serious contamination of the remaining part of the upper lake. The open drains of Ootacamund are largely used by natives for purposes of nature, and consequently during rainfall a considerable portion of the fœcal matter is washed down into the defective main sewer and thence into the upper lake. The water of this lake has been so highly charged with sewage as to prevent natural processes of self-purification. Sewage contamination is therefore rapidly getting the upper hand. The condition sufficiently explains the prevalence of sore-throat, and of mosquitoes in Ooty of late. The remodelling of this highly defective main sewer should proceed with as little delay as possible. Speaking without a knowledge of the levels, I consider it is worth enquiring whether this diluted sewage cannot be got rid of by making a special temporary connection with the sewer passing below the lake.

(*c*) The Gymkhana ground and the part of the lake after filling should be

Chairman's Remarks.

(*d*) The conservancy of this portion of the town is now in charge of a sanitary inspector kindly selected by the Sanitary Commissioner and the council hopes that he will pay greater attention to the cleanliness of the place than the inspector whom he has succeeded.

Tube-wells.—The council has no funds for carrying out this suggestion.

(*b*) The question of rectifying defects in the intercepting sewer is under the consideration of the Government—*vide* paragraph 4 (5) of G.O., No. 1363, dated 14th August 1896.

More latrines are required in the heart of the town to admit of this objectionable practice being suppressed.

These remarks will be communicated to the Executive Engineer who has charge of the filling in of the upper portion of the lake, and also the improvement of the intercepting sewer.

Inspection Notes.

underdrained. The report of Surgeon-General Gordon, C.B., styled it the "best catch-hold" place in Ooty, and so it will remain unless this be attended to.

(*d*) Ootacamund was just as nearly obtaining a decently constructed pipe sewerage system at the hands of Major Tulloch in the sixties as it is to-day at the hands of Mr. Ashpitel. Hence in view of the financial circumstances of the council, I am by no means decided as to what the future may bring forth. If pipe sewerage be adopted, either by "pail depôts" or by direct connection of specially constructed water latrines, removal of night-soil will be effected through the sewers to a sewage farm and the night-soil cart era will have disappeared. If pipe sewerage be not adopted, provided the main sewer be in correct order, and be furnished with a plush tank, as contemplated by Mr. Ashpitel, there can be no reason why "pail depôts" should not be adopted over the main sewer, and thus flush the night-soil to the long-promised sewage-farm—*vide* G.O, No. 648 M., dated 23rd May 1894, Local and Municipal.

(*e*) The Kandal sewer might be similarly used. Great economy in carting would result irrespective of profit from the farm. Pail depôts on this system are largely relied upon in Calcutta, Bombay, and Ahmedabad.

(*f*) Where houses and hotels are detached from the present sewerage system, it would be well if the municipality saw that either filtration or sewage farming in small plots were adopted—*vide* accompanying circular memorandum.

(*g*) Meanjee Sait's lines have drains which are in disrepair. Under section 210, the shape should be altered from the square to the ovoid. A special catch-pit and grid should be provided at junction with the main drain.

(*h*) In case of the Kandal drainage system, I am glad to find my advice as to getting rid of the useless catch-pits has been attended to. It remains however to modify, on the same principles, the sumps along the main sewer. These are sanitarily unfit for their purpose.

(*i*) It would be of considerable advantage in keeping the Kandal bazaar open street-drain in a cleanly condition, if intermittent flushing were arranged for by

Chairman's Remarks.

(*f*) The suggestion involves expenditure which the Municipal Council is unable to incur for want of funds.

(*g*) Correspondence has been going on since June last regarding the condition of these drains. An extract from this note will be sent to Messrs. Meanjee Sait and Co. with the intimation that the alteration of the drains and the construction of a catch pit shall be carried out without delay.

(*i*) An estimate of the cost of carrying out this arrangement will be prepared, and if funds are forthcoming it will be adopted.

Inspection Notes.

means of one of Doulton's automatic flush syphons, working under a small feeding pipe placed on the public water standpost, which is situated exactly at the head of the drain near the Police lines. One of these useful flush tanks could be procured from Messrs. Doulton and Co., Lambeth, London, for about £1–13–0.

(*j*) In paragraph 5 of my former report I pointed out the hardship suffered by the agraharam inhabitants by subjection to floods. My impression then was that this was due to the high flood level of the lake. I have been assured by a good authority that this is not so, and that the real cause is the absence of sufficient breadth of the stream. If this be so, the remedy is simple and should be applied.

5. *Night-soil Conservancy.*—(*a*) In the majority of the old type of latrines the prime idea of separating the urine from the fœces has not been followed. They are consequently very offensive. If it so happens that the water carriage system be indefinitely deferred, I would advise the Municipality in forming new latrines to arrange that they be worked correctly with automatic hoppers for depositing dried and powdered peat upon the fœcal matter as a deodorant. Under this system, the urine should be collected separately from the fœces. The council has at disposal the best peat bog in Ootacamund, namely, the Marlimund reservoir. From this they have already withdrawn 82,392 cubic feet of peat without sensibly diminishing its supplies.

(*b*) As to the old latrines, it might be possible at little cost to so modify them as to render them less offensive. To this end, I would advise that accurate plans be prepared and be forwarded to the Sanitary Board for revision.

(*c*) The latrine for females in the chattram is so constructed as to be impossible for use without incurring exposure of a gross description.

(*d*) *The market latrine.*—This remains in the unsatisfactory condition noted in paragraph 15 of my report, dated 26th November 1893.

(*e*) The latrine near the Agraharam is so completely out of order, that the best course to pursue is to abolish it without delay.

(*f*) The urinals under shelter in the market are as constructed and worked

Chairman's Remarks.

(*j*) The stream will in all probability be widened in connection with the drainage scheme now under the consideration of the Public Works department.

(*a*) The suggestion will be adopted when new latrines are built.

(*b*) Plans will be prepared and sent to the Sanitary Board for revision.

(*c*) The latrine was not built by the municipality and its position until the collapse of the adjoining house was not objectionable. A temporary screen will be put up now.

(*d*) An estimate will be prepared for a flush tank cistern, and on funds being available it will be put up.

(*e*) A new latrine cannot be constructed until the council can allot funds.

(*f*) The Sanitary Board will be asked to supply the designs.

Inspection Notes.

a nuisance, and should be abolished. Designs for correct form by the Sanitary Board are now available.

(*g*) The private latrines in use by natives are also in many cases of exceedingly bad patterns. I advise that the municipality obtain a suitable design, and exhibit it at their office, and subsequently require under section 207 that private latrines be of the approved form. Mr. Donaldson, Calcutta (Agent Mr. A. W. Macleod, C.E.), has for years given much study to this question, and several of the forms exhibited at the late Medical Congress Sanitary Exhibition, Calcutta, received universal approval from sanitarians.

(*h*) Private scavenging was worked during 1894–95 *at a profit* of Rs. 2,965. The principle of making as low charges as possible for this service, so long as it is self-supporting, should be followed.

(*i*) Night-soil is disposed of by burial in pits at Titicul. This should cease in favour of burial in *trenches* of a depth not exceeding 18″. This has, I understand, been adopted on account of the small amount of ground at disposal. It should be another argument in favour of the pail depôt system just mentioned, or, in its absence, of attempting to secure night-soil depôts at places nearer the sites of collection. Thus it seems very undesirable that the night-soil from Kodapamund should be dragged along certain of the most important roads of Ootacamund in order to reach Titicul. I understand the Chairman has already had the fact under consideration.

6. *Slaughter-houses*—(*a*) *For cattle.*—The floor requires repair. The wooden tub, and the filthy wooden table should be burnt. A hydrant should be supplied for flushing the floor.

(*b*) *For sheep.*—The flooring requires repair. There is a hydrant, but no hose. This should be arranged for. The gut contents should not be scattered by the butchers on the floor. Failing the municipality being able to afford a special gutting room, a mounted conservancy bucket should be supplied, into which the butchers should be directed to place all gut contents. There can be no object in first scattering these over the floor and then attempting to get rid of them by sweeping, &c.

Chairman's Remarks.

(*g*) The Agent will be asked to supply an improved form of private latrine.

(*i*) This suggestion to secure night-soil depôts at places near the sites of collection will be referred to the sub-committee for conservancy for its consideration and report.

6 and 7. *Slaughter-houses and Markets.*—Estimates are under preparation for repairing and improving these places.

Inspection Notes.

7. *Markets.*—(*a*) Much of the interior requires re-modelling. The butchers up to date use old wooden boxes instead of Cuddapah slabs for exposing their meat upon. These are soaked with filth. No drains are made in connection with the stalls. Ropes instead of polished iron or steel hooks are employed for suspending the meat. The necessity for these reforms was pointed out by the Deputy Sanitary Commissioner in his last inspection notes.

(*b*) The mutton butchers represented to me that, at the present time, they store meat in their houses, or put it into boxes in the market, and that they would prefer a store-room in the market. This, I think, a most desirable improvement, and one that would not be expensive. The beef butchers have already been provided with a store-room by the municipality, but the floors require a drain, and more ventilation is required. The meat too should be hung, and not placed upon slabs. Granted that the council cannot afford to bring the whole of the market into correct condition, *it should at least be possible for it to fit up correctly the stalls in daily use.*

8. *Offensive trades*—(*a*) *Bakeries.*—Those visited were of a character that should have forbidden absolutely the issue of licenses. The following cases are typical :—

(1) *Syed Hussain, bakery No.* 3, *Charcoal lane.*—The floor is earthen and wet. The room is absolutely dark, and the man works by an oil lamp. The kneading board is filthy. The room is part of a dwelling, in which four persons sleep.

(2) *Dada Meah* (*License No.* 350).—The room is absolutely dark without means of ventilation. The floor is earthen ; the table is filthy. Two persons sleep in this room at nights.

(3) There are numerous other bakeries in like evil condition. As bread-eaters in Ootacamund are numerous, attention to this point is necessary. Contrary to what might be expected, recent researches show that the heat acquired during baking is not sufficient to make certain that disease germs shall be killed in the interior of bread.

(4) In stables I inspected also the requirements laid down in the licenses had not been fulfilled—although in this matter a high standard need not be demanded.

Chairman's Remarks.

Even to fit up stalls requires money.

The conditions prescribed in a license for a bake-house are—

"The bake-house shall have a cemented floor, be well ventilated, drained, white-washed half-yearly, swept daily, the tables and other utensils used be kept thoroughly clean, and be subject to the inspection of the Sanitary officers of the Municipal Council"

The Sanitary Inspector in charge of the circle in which the bakeries referred to are situated is a European who was specially trained at municipal expense at Madras for sanitary work.

It is his duty to inspect the bakeries and to take such action as may seem necessary.

The Council would not do much good by prosecuting persons who have no other means of livelihood and who are unable to provide themselves with better accommodation.

The council has not heard of any deterioration of the health of the people who ordinarily eat the bread made by poor bakers.

(4) The suggestion is noted.

Inspection Notes.

(5) The number of bandies found here and there in Kandal points to the necessity for a bandy-stand. This would be a profitable investment.

(6) *Dhobies.*—Ootacamund has the honour of being the first to undertake the sanitary discipline of dhobies. What was accomplished was not secured without a struggle, and the result reflects great credit upon the Chairman. It remains, however, to perfect the work thus commenced. In paragraph 22 of my report, dated 26th November 1893, I pointed out the necessity for no longer permitting washing in the same stream indiscriminately by dhobies, but arranging for storage of clean water, and filtration by under-drained ground before allowing return to the stream. Although improvement has been effected in the matter of storing filthy clothing separately from clean, this arrangement is not complete, and instances of conditions not being satisfied were found. It must further be remembered that the dhobies wash in water that has received the surface flow of not over-cleanly villages, and that the banks of streams are, at all times, the favourite easement resorts of natives. It is high time that some efforts were made to have properly supervised "dhobie khanas," such as are worked successfully in Bombay.

(7) In connection with this matter the Chairman has pointed out a very obvious defect. namely, that the clothing of children in the Lawrence Asylum is brought to Ootacamund for washing. Seeing that infectious diseases appear from time to time there, it is undesirable that this mingling of clothing should occur. Moreover, it is not advantageous to the children that they should run the risk of importation of disease from dhobies' huts in Ootacamund. In a large institution of this description, it is essential for safety that all laundry arrangements be effected on the spot.

(8) The question of providing Ootacamund with "model cow-sheds" has evidently been one long before the council; as I find in my report above referred to that I mention the matter as having already been mooted. Having regard to the fact that typhoid fever appears from time to time in Ootacamund, I trust that the question will be again considered by the council. The conditions under which the

Chairman's Remarks.

(5) The necessity for a cart-stand at Kandal has been long reorganised, but it could not be established from want of funds.

(6) The conditions prescribed in licenses granted to dhobies are as follows:—

"The storage-room must be well ventilated, swept daily, kept thoroughly clean, white-washed half-yearly, and be subject to the inspection of the sanitary officers of the municipal council.

"The clothes of any person suffering from any disease likely to be contagious or of persons who may have died from any contagious disease must not be deposited in the house."

As soon as the north supply water scheme is improved, steps will be taken for acquiring land and establishing dhobie khanas.

The Collector of Nilgiris, who is one of the Directors of the Lawrence Asylum at Lovedale, will be addressed on this point.

(8) The council can only repeat what it has already said about model cow-sheds and unprotected milk supply in its note 6 on the notes of the Sanitary Commissioner in September 1893.

"Under existing conditions, the protection of the milk supply is difficult. There are no proper cattle-sheds and until the "gowlees" and others who supply the town with milk be induced to build suitable sheds apart from their dwellings and to keep the milk in separate

Inspection Notes.

milk supply is obtained are absolutely bad. The animals are maintained in highly overcrowded sheds in a filthy condition. The milk is stored in some cases within the houses and both here and by mode of transport I found risks of contamination I need not detail.

(9) At Kodapamund, the water supply considered by the milkman particularly good is a well which, on each of my visits to Ootacamund, I have found had close to it a mixed rubbish and dung heap.

(10) Above the stream used by the Kodapamund milkmen is a small settlement of dhobies. The position held by these men is most dangerous, having regard to the fact that even if milk be not adulterated with water containing the dhobies washings, the vessels are certainly washed with it. It is of the greatest importance that this settlement be got rid of. This might be arranged by refusing licenses for the inhabitants as dhobies on the ground of their occupying sanitarily undesirable positions and, secondly, offering compensation for their houses. The value of these is not likely to be much. If necessary, the Land Acquisition Act might be appealed to.

(11) I know the municipality is aware of the dangers pointed out; still, as time has passed and no action has been taken, I consider it my duty to again urge both the question of "dhobie khanas" and "gowlee khanas" upon the attention of the council. A loan followed by action under section 177, and careful supervision under section 185 would get over the difficulty.

9. *Vaccination*—is conducted economically with glycerine paste. This preparation keeps well in this cool climate, as might be expected in view of its extensive use in Europe. No action has been taken upon the suggestion to cease transmission from generation to generation by glycerine lymph, which was made both in my report of 1893 and in that of the Deputy Sanitary Commissioner of 1894.

The following shows the state of working of the compulsory clauses as to infantile vaccination.

Chairman's Remarks.

compartments, from those occupied by themselves, or their cattle, the milk must be more or less contaminated."

The licenses issued now to those who keep cattle-sheds contain the following conditions:—

"The cattle-shed must be well ventilated, metalled, drained, swept daily, kept thoroughly clean and be subject to the inspection of the sanitary officers of the municipal council.

"The sweepings or manure removed daily from the cattle-shed must not be deposited near the cattle-shed or near any other building, water channel or dust-bin."

(9) Notice will be served for the removal of the rubbish, &c.

(10) The Collector of Nilgiris was asked with reference to paragraph 9 of the Sanitary Board's Proceedings, dated 16th August 1895, No. 2286, "to assist as far as may be possible to prevent the erection of more huts at Kodapamund." The question of entirely getting rid of the dhoby settlement will doubtless be considered in connection with the improvement of the water-supply of the town.

9. These remarks will be communicated to the Civil Surgeon and the Municipal Vaccinator will be directed to conform to them.

Inspection Notes. Chairman's Remarks.

Name of municipality.	Total births during preceding six months, *i.e.*, 1st January to 30th June 1895.	Number vaccinated successfully.	Number vaccinated unsuccessfully for the first time.	Number vaccinated on second time because first operation proved unsuccessful.		Postponed under medical certificate at the end of six months.	Died.	Left the town.	Unaccounted for.	Ratio of successful to total births per cent.	Prosecution for failure to accept vaccination during the year up to date.		
				Successful.	Unsuccessful.						Number of suits filed.	Number of cases disposed of by magistrates.	Number of convictions.
Ootacamund	267	178	..	..	..	..	54	35	..	..	302	302	..

10. *Vital Statistics.*—The following are the statistics gathered during the last five years:—

Years.	Ratio of births per mille of estimated population.	Ratio of deaths per mille of estimated population.	Percentage of deaths from						Infantile mortality.
			Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa.	Injuries.	Other causes.	
1892	29·2	22·2	0·3	1·2	24·9	14·3	2·3	57·0	191·0
1893	27 5	20·8	..	0 6	27·5	13·7	1·5	56·7	188·9
1894	30·1	23·7	0·3	..	29·1	10·0	..	60·6	258·74
1895	30·9	22·2	..	..	37·7	9·1	1·1	52·1	245·9
1896	27 6	19·7	..	..	29·2	6·6	1·4	62·8	152·2

I have in a memorandum separately communicated to the municipality dealing with their views embodied in G.O., No. 1864 M., dated 3rd December 1895, offered certain remarks on the subject.

There is no order bearing this date and number in 1895, and the memorandum referred to has not yet been received.

11. *Sanitary Administration.*—Since my last inspection, the offence of common nuisance seems greatly to have increased in prevalence; a fact that argues that either the police are lax in their working of the Towns Nuisance Act, or that the punishments awarded by the magistracy are too lenient to be deterrent. No attempt has been made to work the ward system, as the council was invited to do in G.O., No. 648 M., dated 23rd May 1894, paragraph 7. Much good could undoubtedly be done by the councillors, if they would take upon themselves the task of fulfilling sanitary inspection in their respective wards, and taking an active interest generally in public and private conservancy and vaccination.

The record of progress during the last two years has been very disappointing * but this may in part be ascribed to the waiting for fulfilment of the major works of water-supply and sewerage, and greatly to the absence of funds necessary for fulfilment of anything more than the upkeep of existing condition. The gradual withdrawal of funds that had been given annually as a special aid towards sanitation by Government has undoubtedly seriously affected the possibility of advance. In other respects, the sanitary administration of the municipality reflects much credit upon the Chairman, whose energy is widely admitted.

Ward system.—The municipal council passed the following resolution on the point, and submitted it to the Government with letter No. 1264, dated the 6th July 1894:—

"As regards the ward system, the council is of opinion that considering the straggling character of the town, it would not be convenient to introduce the system in this municipality."

* Yes; solely from want of funds.

COCANADA,
2nd September 1896.

(Signed) W. G. KING, Surgn.-Lieut.-Col.,
Sanitary Commissioner for Madras.

EXTRACT from the Proceedings of a meeting of the Ootacamund Municipal Council held on Monday the 5th October 1896.

* * * * *

No. XX. Read inspection notes, dated 2nd September 1896, of the Sanitary Commissioner for Madras on the Ootacamund Municipality with Chairman's replies.

Resolution.—With reference to paragraph 11 of the notes, Colonel Stevenson will be requested to take charge of the following ward, viz., from Charing Cross along the north side of the main stream to Metucherry and bounded on the north by the Hospital road and Church hill road.

The notes with the Chairman's replies will be submitted to the Government.

Forwarded.

2. The council is too straitened in means to do all it should, but further progress is hoped for. At the last meeting two wards were constituted and placed under ward councillors, viz., the main bazaar with the Agraharam and Metucherry; much advantage is expected from this, especially as the councillor in charge of the former ward is an officer so experienced in municipal work as Colonel Stevenson.

(Signed) H. TREMENHEERE,
Ag. Collector.

10th October 1896.

ORDER—No. 2021 M., dated 23rd November 1896.

Recorded, with the following remarks:—

(1) The action which the municipal council proposes to take on paragraphs 4 (*h*) and 5 (*h*) of the inspection notes has not been reported. This omission should be supplied at an early date.

(2) The work of inspecting bakeries, which is apparently being inefficiently performed by the Sanitary Inspector, should be supervised by the Chairman and licenses should be refused in the case of bakeries that do not satisfy the conditions prescribed by the bye-laws.

(3) The Sanitary Commissioner's attention will be drawn to the latter portion of the Chairman's remarks on paragraph 10 of the notes. The Government order quoted in this paragraph is one of 1894 and not 1895.

(True Extract.)

G. S. FORBES,
Secretary to Government.

To the Chairman, Municipal Council, Ootacamund.
" Collector of Nilgiris.
" Sanitary Commissioner.
" Sanitary Engineer.
Editors' Table.

Ed A. Raitt

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