THE

EIGHTH ANNUAL REPORT OF THE SANITARY BOARD,

THE FORTIETH ANNUAL REPORT OF THE SANITARY COMMISSIONER,

AND THE

FOURTEENTH ANNUAL REPORT OF THE SANITARY ENGINEER,

MADRAS.

1903.

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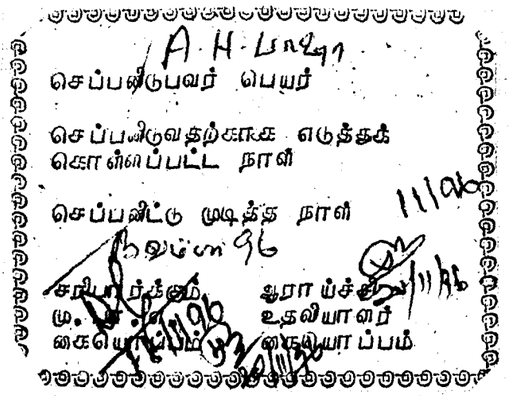

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EIGHTH REPORT OF THE SANITARY BOARD.

EIGHTH REPORT OF THE SANITARY BOARD

FOR THE YEAR 1903.

Constitution of the Board.—This remained unchanged.

2. *Personnel.*—Mr. W. B. deWinton, C.I.E., the President, having availed himself of one year's leave, his place was filled temporarily by Mr. A. H. Garrett, Acting Chief Engineer, Public Works Department, until February 1903. Mr. M. Hammick, C.I.E., continued to hold charge of the Civil Member's place till February 1903, when Mr. A. G. Cardew took office.

3. *Sanitary schemes.*—As in former years, the labours of the Board consisted principally in the examination of individual works of sanitary improvement, after detailed scrutiny of the plans and estimates by the Sanitary Commissioner and the Sanitary Engineer. One hundred and forty-nine such works, estimated to cost in the aggregate Rs. 17,66,394, came under the review of the Board during the year under notice. Of these, 50 were for Municipalities, 94 for Local Fund Boards, 1 for the Collector of Salem, 1 for the Collector of Madura, 1 for the District Magistrate of Anantapur, and 2 for the Inspector-General of Prisons.

4. The following are among the more important of the schemes reviewed :—

	Estimated cost. Rs.
(1) Madura drainage	6,57,380
(2) Hospital at Nandyal	55,000
(3) Improvements to the Cuddapah water-works	Not matured.
(4) Yercaud water-supply	74,200
(5) Hospital at Bezwada	58,565
(6) Extension of the Tuticorin water-supply	4,300
(7) Vellore water-supply	3,60,000
(8) Improvements to the market at Connoor	1,87,000
(9) Vegetable stalls in the market at Ootacamund	10,830
(10) Kodaikánal water-supply	62,250
(11) Improvement of the sanitation of Ootacamund	14,458
(12) Dispensary at Tirukkáttuppalli	5,000
(13) Ootacamund drainage	Not matured.
(14) General market at Calicut	30,300

5. *Rules.*—The rules for the conduct of the business of the Board were revised by Government principally in the direction of allowing more discretion of local bodies in the carrying out of small works, and delegating to the Sanitary Engineer the power of according professional sanction to projects. Thus, while under the old rules no work of sanitary improvement estimated to cost more than Rs. 200 could be undertaken by local bodies without the prior approval of the Sanitary Board, the revised rules allow the carrying out by these bodies on their own responsibility of all works the estimated cost of which does not exceed Rs. 500. No work will in future come before the Sanitary Board unless the estimated cost exceeds Rs. 1,000, works ranging between Rs. 500 and this limit being finally disposed of by the Sanitary Engineer. Under these arrangements the Sanitary Board will be relieved of a mass of detailed work which can perhaps be equally well done by other authorities, and the smaller schemes of local bodies will be carried through with greater expedition than has hitherto been practicable. The larger schemes will continue to receive the amount of attention hitherto bestowed on them by the Sanitary Board, while provision has been made for furnishing this Board with an annual report of progress in regard to all works the execution of which it has specifically approved.

6. A considerable amount of attention was also bestowed during the year on the revision of the rules issued by the Board for the designing and execution of hospital buildings. The discussion with sanitary authorities was in active progress when the year closed.

7. The reports of the Sanitary Commissioner and the Sanitary Engineer contain details of sanitary work undertaken during the year.

(Signed) R. PARSONS,
Secretary, Sanitary Board.

4th May 1904.

PART I.

GENERAL SANITATION.

FORTIETH ANNUAL REPORT

OF THE

SANITARY COMMISSIONER WITH THE GOVERNMENT OF MADRAS, 1903.

SECTION V.

GENERAL POPULATION.

RAINFALL.

1. In the district of Tinnevelly, the north-east monsoon was 22·5 per cent. and in Madura 2·8 per cent. below the average of the ten years ending 1900. In South Canara, the south-west monsoon was 1·1 per cent. below the average. With these exceptions, the rainfall was above the average in both monsoons in all districts: the total for the Presidency being 29·6 per cent. above it. In estimating the influence of amount of rainfall, it must be remembered that, in the immediately preceding ten years used for this comparison, there were three years in which one or other of the monsoons was 50 per cent. less than in the preceding decennium. The best successive annual rainfall period during the last thirty years was from 1882 to 1887, in which both monsoons gave a good yield. Compared with this average, the 1903 rainfall was 22·9 per cent. in excess.

FOOD-GRAINS.

2. The year must have been disappointing to certain of the native trading classes dealing in grain. Their surplus or reserve of grain, at the approach of the monsoons, is largely the subject of speculation. Day by day, as the monsoon seems to pause before its final declaration of strength, the holder of grain manipulates the market. Both monsoons, however, gave at their origin so unmistakeable evidence of their lasting power that there must have been little room for effecting movements of the kind; and selling out of useless reserves must have been more rapid than desirable in the interests of money-making. Although, with the exception of Tinnevelly, the production of grains must have been fairly uniform as to size of crops, allowing for the suitability of individual localities for the growth of certain grains and for differences as to means of transport, the prices realized in various districts are less uniform than might be expected. Madras, where considerable capital is in the hands of a few men, shows a marked variation. Here rice per rupee was but 1 seer cheaper than in the previous quinquennium, which was one of high prices; ragi also showed, by no means, the same proportionate fall of price as elsewhere. The natural supposition is that if rice is selling retail in North Arcot at 14·5 seers per rupee, the wholesale dealer would find it pay him

to bring rice thence into the Madras market, where it was selling at 10·4 seers per rupee. If the ryots in the Chingleput district with good crops could have realized a price so much better than their North Arcot prototypes, they ought also to have had a specially prosperous time of it. But, there is no reason to think this is particularly the case. The fact probably is that, with the exception of the larger land-owners, the ryots fail to derive that full amount of benefit from higher prices in the market that might reasonably be expected. The man who fattens on good seasons is the sowcar in whose hands the ryot is forced, as a result of debts for useless ceremonies, and early and imprudent marriages. The effective control of the market in Madras, during 1903, by the sowcar is a case in point. The necessity for an Act for this Presidency that would free the ryot from the demands of the sowcar when these become unreasonable, seems to be very obvious. "The Deccan Agriculturists' Relief Act," which has done much good in Bombay, is the type of Act required.

GENERAL POPULATION.*

3. In the presence of a prosperous season, it is probable that emigration has been less active than in the previous quinquennium, when high prices prevailed; but data are not available, as the usual returns by the Revenue Board have not yet been issued by it. The natural increase of the population according to registration was 768,735. The number for which registration returns were received during the year was 37,315,611, leaving 897,101† of the total census population unaccounted for. As usual, there has been no want of effort on the part of Government and the officers concerned to bring about improvements of methods of registration, and the whole subject was again considered by Government during the year (G.O., No. 329, Rev., dated 25th March 1903). There are, however, two very evident flaws in registration in rural areas that cannot be ignored; one is the fact that control of Revenue authorities of zamindari villages is imperfect, and consequently as a rule the total average results in certain districts have been hitherto seriously reduced by errors owing to the omission of events. The statistics for 1903, however, show great improvement in this particular. The second is the impossibility of trusting registration to the existing agency, when a population assumes certain proportions. I have long held that the moment a town possesses 5,000 inhabitants, it is beyond the powers of the village revenue officials to keep a strict record of vital statistics. If this statement be true of villages containing a population of 5,000, still more is it correct of those of 10,000 and over, and I believe, whether compulsory registration be put in force or not, unless a special staff be employed such as might economically result by a combination of sanitary, vaccination, and registration duties under one department, that registration must still remain defective. Consequently, it has seemed to me necessary to secure that registration returns of towns should be so compiled as to exhibit separately towns having populations of above 5,000 and above 10,000, and showing where the registration is compulsory and where not; so as to be able to point out to the local authorities concerned where the flaws actually exist, notwithstanding the theoretical enforcement of compulsion. With the consent of the Revenue Board (Proceedings No. 177, dated 23rd May 1903), the statements of vital statistics are now procurable compiled in this manner. The ruling had been in force for six months during 1903. The statistics obtained show that my contention as to the size of towns affecting results is sound. Notwithstanding compulsion in both instances, the total average for towns containing over 5,000 and below 10,000 inhabitants amounts to 28·1 for births and 21·1 for deaths; whereas in towns of 10,000 and over, the total average rate for births is 25·2 and deaths 19·8. In some of the towns containing 10,000 inhabitants, under compulsory registration, somewhat

* Throughout the Report rates *per mille* only are quoted, unless it be specifically stated otherwise: consequently, the constant repetition of the words "per mille" is not thought necessary.

† This figure represents the combined populations of (1) the Agency tracts of Vizagapatam (850,960); Banganapalle State (32,259); Amindivi islands (3,608); and the Laccadives (10,274).

startling results are obtained; thus, in Yemmiganúru, in the Bellary district, the birth-rate is said to be 9·8 and death-rate 15·8; for Gopichettipoliem in Coimbatore district, the birth-rate returned is 7·8 and the death-rate 4·3; in Gudur in Nellore district, the birth-rate is declared to be 11·5 and death-rate 10·2; whilst Nellikuppam in South Arcot district, not to be outdone by its northern compeers, is content with a birth-rate of 3 and a death-rate of 2·9. The attention of the authorities concerned has been drawn to these results, and, as they are unusually bad, I had no struggle with my conscience in doing so; but, it seems to me a hopeless task for them to exhibit anything approaching correct birth and death-rates in towns possessed of populations of 10,000 or over, if the efforts of the Village Heads alone are to be relied upon. In Ganjám, statistical results are uniformly untrustworthy, owing to the apparent impossibility of the local authorities securing returns from the same number of villages monthly. In G.O., No. 628 L., dated 4th July 1902, Government directed Collectors to select certain localities in their districts and to cause registration to be so effectually supervised that the cause of former inefficiency should be ascertained. Up to date, I am in possession of reports from only four Collectors on this subject. Beyond giving reason for a few cases escaping detection, no new fact of importance is revealed, except that in one union, where compulsory registration was in force, there had been neglect to require attendance of the Registrar at definite hours.

4. To all Municipal Registrars has been sent a pamphlet written by my late Personal Assistant, Assistant Surgeon Kistnamurthi, in which all common diseases are described in simple language. This, in addition to the course of instruction to municipal registrars by District Medical and Sanitary Officer previously arranged for, should go towards improving accuracy of registration of death causation.

5. In municipal areas, disobedience to compulsory clauses of the Act was followed by prosecution in 1,264 cases.

BIRTHS IN DISTRICTS.

6. The total number of registered births being 1,165,080, the birth-rate of the Presidency during 1903, when reckoned upon the Census population, is 31·2, against the average of the preceding 10 years ending 1900 of 28·5, of 25·1 for 1901, and 28·2 for 1902. A certain amount of this increase is discounted by the fact that, when reckoned upon the estimated population, the birth-rate is 30·6. Nevertheless, there is room to think that some improvement has occurred in registration, and no room to doubt that removal of the depressing influence on fecundity of high prices of food has been recovered from, as an effect of the prosperous seasons of 1902 and 1903. In my Report of 1901, I pointed out that the districts of Chingleput, North Arcot, Madras, Kistna, and Kurnool suffered special diminution of their birth-rates, in all probability in response to this influence: and I suggested, in my Report of 1902, it would be of some interest to ascertain whether these districts, which showed decreased birth-rates out of proportion to those of other districts which had been less affected, would exhibit a reaction at a greater rate than these, as soon as the results of better food supplies had time to operate. Taking Chingleput, it is found that, in 1901, the birth-rate was 26·6; this has increased to 39·2, thus exceeding the total average by 3·6. Kistna has from a rate of 27·2 advanced to 33·5. Kurnool from 23·3 has advanced to 31·3, thus exceeding its total average of 30·2. Madras has advanced from 37·1 to 39, but it has not yet reached the total average of 40·9. Here, as already noted, prices have not fallen to the same extent as elsewhere. North Arcot from 19·1 in 1901 has advanced to 29·1 and, therefore, has exceeded the total average by 1·4. On the other hand, the birth-rate of the year has exceeded the total average in 15 of the remaining 17 districts, which were also subjected to the strain of high prices but in a less marked degree. Of these, Nellore and Malabar should have also been selected by me. There is, therefore, sufficient reason to regard the rate of recovery in the affected districts since 1901, with the exception of Madras, as proportionately greater than during the period when prices were continuously nearer normal. Such facts as these go to disprove the popular opinion that high prices of food and epidemics specially affecting infantile life, cause

decrease in the population, or, put in another way, that scarcity of food is a divine dispensation in respect to increase of population; there are physiological reasons why this opinion would be true only if the causes were permanently in operation.

DEATHS IN DISTRICTS.

7. Notwithstanding the increased birth-rate and its frequent sequel of increasing the total mortality by increased infantile deaths, the total death-rate of the Presidency was but 22·2 against the total average of 21·4, and, when reckoned upon the estimated population, 21·7. No notable increase of mortality has occurred except in Anantapur, Coimbatore, Salem, South Canara and Malabar. In the case of the first four districts, the increase is due to plague. In Malabar, irrespective of improved registration (which is evident from the simultaneous better birth-rate registered side by side with the increased mortality), the increase seems to have been chiefly due to cholera. Exclusive of cholera, small-pox and plague, the total mortality of the Presidency was 776,964, affording a rate of 20·7.

8. Reckoned upon registered births, the total deaths of infants below one year of age was 177·6 against 168 of the preceding year—an increase largely due to mortality of infants in plague-infected areas. In both years, the ratio of deaths was practically the same, namely, 100 males to 90·1 females in the year 1903 against 100 males to 90·2 females in the year 1902. In 12 districts the average of 9·9 per cent. difference between male and female deaths was exceeded. The highest rate registered was in Madras and Chingleput districts, where it amounted to 286·1 and 210·6, respectively. It is probable that the marked endemic prevalence of diarrhœa and dysentery in these districts had much to do with this result.

BIRTHS IN MUNICIPALITIES.

9. 85,824 births were registered in municipalities in a Census population of 2,406,455, representing a birth-rate of 35·7. On the estimated population, the birth-rate would be 34·6. The ratio of male to female births was 100 to 94·3. This may be contrasted with the ratio for England and Wales from 1896 to 1900, which was 100 males to 96·6 females. When compared with last year, Coimbatore, Ootacamund, Tiruppattúr and Vellore, exhibit slight decreases in their respective rates which may be accounted for by exodus of the people during plague, and by less efficient registration of births during stress of preventive work. But, on the other hand, Adóni and Bellary, which were similarly affected, show no such decrease. Cocanada, Masulipatam, Periyakulam, Kodaikánal, Tirupati, Vániyambádi, Tinnevelly and Srívilliputtúr show a falling off in results, which may fairly be ascribed to careless registration. With the exception of the towns named, an increase of the birth-rate has occurred in all municipalities: a result which may be ascribed, in part, to improved registration and, in part, to relief from the conditions incident to dear food which have already been referred to. The highest registered birth-rate of 50·2 is reported by Vániyambádi against that for the preceding year of 63·1. This falling off of the normally high birth-rate of this town, notwithstanding the continued presence of a large section of Muhammadans who are well off and possessed of zenanas, is probably due to the fact that the population has suffered heavily from plague, and that some amount of emigration has occurred. Of municipal towns not possessed of this abnormal character of the population, Karúr has shown the highest birth-rate, namely, 45·3.

DEATHS IN MUNICIPALITIES.

10. The total mortality rate for municipal towns for the year, namely, 32·7, shows but little change when compared with that for the preceding year, namely, 32·5. The chief change in causation of mortality was a slight decrease in the case of

cholera and small-pox, and a slight increase in the mortality from plague. In the municipal towns of Coimbatore, Ootacamund, Coonoor, Vellore, Vániyambádi and Tiruppattúr, the increased mortality was due to plague. In Chicacole, Berhampur, Palni, Calicut, Gudiyáttam, Dindigul, Cuddapah, Parlákimedi, Karúr, Cochin, Trichinopoly, Mánnárgudi, Vizagapatam and Tiruvannámalai, the apparent increase is due to increased activity in registration, as the birth-rate has synchronously increased. In Tellicherry increased mortality is exhibited under "dysentery and diarrhœa," "respiratory diseases" and "fevers." Such a combination would give rise to suspicion of the existence of unrecognized plague. The Civil Surgeon informs me that he has no reason to suspect that this has been the case. In Salem, there has been a remarkable increase in the efficiency of registration, as the birth-rate has advanced from 37·1 in 1902 to 43; the heavy death-rate obtained is largely due to this cause, as, if deaths from cholera, etc., be subtracted, the more reasonable mortality, having regard to the birth-rate, of 34·0 per mille is arrived at. It is probable, however, the full birth-rate has not yet been secured in this municipality, but I think it very unlikely that cases of death escape notice; as the town has throughout the year been under the system of observation for plague, and, by personal inspection, I have ascertained that the duty of checking mortality is very carefully carried out. The severe rate of 162·4 in the case of Vániyambádi is in part accounted for by the heavy incidence of plague in the town, owing to the inhabitants obstinately refusing the precaution of evacuation. This was also added to by a number of deaths during floods, which swamped a portion of the town in November 1903.

11. In 1902, the total average infantile death-rate in municipalities reckoned upon the registered births per mille amounted to 233·3 and, in my Report for that year, I pointed out that the decline of 4 per mille compared with 1901 recorded for that period probably represented the withdrawal of the influence of high price of grain upon the adult, and its indirect influence upon infantile life. This remark is justified by the practically unaltered figure for 1903, which is 234 against 233·3 for 1902. The proportion of male to female deaths among infants below one year of age was 100 to 88·5 against 90·2 in the previous year. By way of contrast I may state that the proportion for England is about 100 males to 79·5 females. It is possible the difference may reflect in some degree the less care likely to be taken of females than males when sickness overtakes them in this country by the uneducated classes. The average difference of 11·5 per cent. between male and female deaths was exceeded in 31 towns, in 19 of which the variation was more than 20 per cent. Whilst this total average rate is decidedly heavy and must imply great avoidable mortality, those for Masulipatam (288), Ellore (299·6), Guntúr (331·1), and Bezwada (333·7) are records of a lamentable loss of infantile life. These towns are within the districts of Kistna and Gódávari, where the inhabitants must have much the same customs and method of treating infants. The only other places outside these districts where the same results are approached are in the crowded and insanitary City of Madras (286·1) and in Tuticorin, which is famous for its brackish and unsatisfactory water-supply (288). Unfortunately, to arrive at a conclusion as to the nature of this large mortality, information such as is not now available in statistics furnished for this report would be necessary; that is, the actual nature of causation of death has to be ascertained, and even then one is confronted with the difficulty that the causation stated by uneducated mothers must be received as sufficient diagnosis by municipal registrars. It is in the investigation of such matters that my suggestion to group registration according as they have been verified by medical diagnosis or not, would have been of peculiar value (G.O., No. 1767 M., dated 26th November 1903). In the meantime, the matter is one which should engage the attention of the District Medical and Sanitary officers concerned. As soon as the medical aspects of the question are at disposal, the sanitarian's function could doubtless be exercised with value; but this preliminary is necessary. One of the genuine predisposing causes of "convulsions" which form so frequent a cause of death as registered, amongst native children certainly is the means taken by anxious mothers to prevent them, namely, by producing open and slow healing wounds subject to contamination by the earthen floors of dwellings by branding them with a red-hot needle on the abdomen; although I think this is less frequent than in former days. If actually these convulsions be proved to be due to tetanus,

it would be most desirable to attempt Calmette's preventive treatment by the use of dried anti-tetanic serum powder. This, on the opening of the Serum Section of the King Institute is a point that will be kept in mind. In any case, disregarding the trite fact that heavy infantile mortality bespeaks a high grade of local insanitary conditions, it is certain that the sanitary reformer and the educationist have before them a duty in securing that native mothers should better understand the care of infants. In such matters, by the spread of knowledge by means of pamphlets, Mrs. Brander, a late Inspectress of Schools, has to my knowledge done much good; but there is ample room for more lady workers.

SECTION VI.

GENERAL HISTORY OF CHIEF DISEASES.

CHOLERA.

12. There was a decline in the incidence of cholera in the population when compared with the previous year, the rate being ·7 against ·8. The districts most severely affected were Madura and Malabar. The conditions in Malabar, in the rural parts, are not at first sight favourable to the spread of cholera, owing to the frequency with which the people reside at distances from each other, and utilize water-supplies which are within the private control of individuals. Nevertheless, there are portions of towns, especially parts inhabited by Moplahs, which present exactly the opposite features: there is much overcrowding and the water-supplies are open to contamination. It is customary for local officials to regard the former condition of affairs as typical of the district, and to hold that sanitary requirements are very few. Guided by such opinions, the Malabar District Board last year (1902–1903) spent under the head of sanitation only 0·23 per cent. of the total revenue against an average of 5·57 per cent. expended for that purpose in the other districts of the Presidency. Whatever impression be conveyed to the casual observer of scattered residences and ample water-supply, there can be no doubt there is much solid sanitary work that demands attention in this district. Certainly the idea that no special sanitary care is requisite does not seem to fit in with the fact that typhoid appears to have a special predilection for Malabar, and that it returned the heaviest cholera mortality during 1903. The next district in the order of severity of affection is Madura, where the mortality from this cause was 4,422. Possibly, the large number of zamindari villages in this district handicaps local authorities as to efficiency of sanitary control during epidemics. In any case, neither here, nor in any other area affected with cholera under District Boards, is there reason to believe that the Sanitary or Medical staff employed was sufficient in numbers to cope with the duties on which they were placed.

13. At Guindy, in the Chingleput district, an interesting outbreak came to my notice. A bricklayer, resident in Mylapore, was attacked with cholera when working in the compound of a public building situated on the banks of the Adyar. He was known to have vomited and purged on the banks of the river. The same night there was rain. In three days cholera made its appearance in the village at Guindy, which obtained its water-supply from a spot about a quarter of a mile below it on the same bank. A temporary water-supply was opened by the people; but 24 deaths in the population of 431 occurred before the epidemic was arrested. With one exception, all cases had used the water up to the date when it was declared infected. It so happened that from the same source the Government house at Guindy was supplied *after filtration* for minor domestic and garden purposes; drinking water being obtainable from a different source. The household was absent during the period, but, although a few servants were present, none of them were attacked. Seeing that this part of the river, in spite of magisterial injunctions to the contrary, is liable to faecal contamination as well as from the washings of clothing, it certainly is not a spot that can commend itself as a fit source for the water-supply of a large household, notwithstanding its rough filtration and restriction to minor offices. I thought I had obtained in this case an "object lesson" that would not be thrown away upon the local Taluk Board. Therefore, with some confidence that my suggestion would be adopted, I forwarded a scheme for a small-water supply at 10

gallons per head for the village to be derived from a clean subsoil source. Lifting was to be fulfilled by a kerosine-oil engine pumping to an elevated iron reservoir, whence it was to be distributed by pipes and taps throughout the village. The Taluk Board of Saidapet was not, however, to be thus hastily disturbed from that state of equanimity with which it has for years regarded sanitary matters. With the District Medical and Sanitary officer's concurrence, they pointed out that the same well which would have been protected under my scheme was already available for the people, and that "during the prevalence of cholera, the Taluk Board would protect the well from contamination by appointing a watchman." It did not seem to enter into the Taluk Board's calculation to consider this particular well (unprotected mechanically) might be the first contaminated, and be the means of the spread of cholera, notwithstanding the appointment of that constant scapegoat of the sanitary conscience of public bodies, known as the "tank watchman." I quote this little incident, as evidence of the difficulty that is encountered in securing even petty sanitary advance by rural bodies. Although Rs. 2,410 may be regarded as a large sum for a Taluk Board to provide, still it is obvious the arrangement would have represented once and for all a permanent improvement in the village concerned. The upkeep of a kerosine-oil engine neither demands great skill nor unreasonable expenditure for fuel. The question of attempting to persuade local bodies to undertake methods of protection of water-supplies by definite mechanical means, instead of by the omniscient tank watchman, has been much pressed by Government in its Reviews of Reports during 1903, and its importance will, it is hoped, in time force itself upon notice.

14. In municipalities, the incidence of cholera decreased from a rate of 1 of the previous year to ·9. The towns most severely affected were Salem (9·8), Periyakulam (5), Cochin (4·9). These towns have notoriously evil water-supplies. In Salem, the washing of clothes proceeds at portions of the river above the town from which water is drawn by people for drinking purposes, although during cholera prevalence its use is discouraged. Into this river is discharged much of the drainage of the town, although of late the Municipal Secretary, who is a Certificated Sanitary Inspector, has managed to persuade the Council to divert a considerable amount of it to sewage filters, so as to use the filtrate for farming. At Periyakulam, the whole washings of the town proceed to the particular part of the river, which forms the chief water-supply. At Cochin, the supply obtainable locally is brackish, and is largely drawn direct from shallow unprotected holes dug in the sandy soil within inhabited areas. The improvement of the water-supply in these three towns has long been considered. In the case of Salem and Periyakulam, the question is chiefly one of finance; whereas, in Cochin, there are certain physical difficulties that have to be overcome. In this latter case, however, the problem of protecting the existing water-supply against both cholera and filariasis (for which the place is notorious) is of the most simple nature: but the Council continue to regard this aspect of the question with apathy. In the meantime, these towns afford good examples of the results of unprotected water-supplies.

15. So far as the method of spread of cholera is concerned, I see no reason, with further experience, to modify the views expressed by me in my Report for 1893 (page 58 *et seq.*). The chances are, irrespective of well-recognized facts following introduction into a locality, that, in certain areas, the cholera microbe exists in water in a modified or feeble condition and that the epidemic appearance is due to enhancement of its virulence following inflow of suitable pabulum especially from the subsoil and possibly from the surface. At any rate, in this Presidency, cholera is confined in certain districts to certain months with clock-like regularity. The bacteriologist has left the sanitarian with no more information than was obtained by Koch originally as to the behaviour of the cholera microbe. It seems to me there is plenty of bacteriological work applicable to epidemiology that should secure attention. As regards distribution, the sacred river Cauvery is obviously an active agent.

SMALL-POX.

16. Vaccination is compulsory in all municipalities, and in only 145 of the 379 Unions in the total area of 142,121 square miles of the Presidency. The fact, however, that of the total municipal population of 2,466,455 only 0·1 died from small-pox goes to show that, in spite of possible frequent chances of importation, the influence of protection afforded by vaccination is demonstrable. In rural areas, 0·4 per mille (or 14,667) of population died of small-pox, against 0·7 (or 22,926) in the previous year. Of these deaths, 6,984 were below 1 year of age, giving a rate of 6·47 per mille of births; whilst 4,017 were between 1 and 10 years of age, or at the rate of 0·46 per mille of the population of that age. In municipalities, there were 71 deaths of infants below one year of age or 0·83 per mille of births, and 127 deaths between 1 and 10 years of age, or at the rate of 0·21 per mille of the population of that age. These figures show clearly the advantage of the more prompt vaccination of infants in municipalities than now occurs in rural areas, and especially the influence of the more uniform protection afforded to children under ten years of age which necessarily follows. The large mortality of children under ten years of age from this preventible disease is a matter that has engaged the attention of Government, for some time past; and it recently called for a scheme for the reorganization of the Vaccination Department coupled with compulsory vaccination in rural tracts. This should prove a most valuable reform and should, within a short period of its inauguration, be capable of showing much life-saving power (G.O., No. 1558 L., dated 7th December 1903).

PLAGUE.

17. A total of 13,291 deaths from plague was recorded, of which 6,203 were cases of females and 7,088 cases of males. The total rate of mortality in the aggregate population of the districts infected was 0·5. Of this figure, the Bellary district contributes the high rate of 6·2. The districts indigenously affected were Anantapur, Bellary, Coimbatore, Kurnool, the Nilgiris, North Arcot, Salem and South Canara. Plague has therefore acquired possession of the central districts of the Presidency. Fortunately, the epidemic in South Canara has never assumed a large proportion, and no spread along the West Coast has yet occurred. As a special report is annually made on the subject by me, it is not necessary here to enter into details. I may however state that the policy pursued by the Madras Government has varied little from the commencement of plague in Bombay up to date, except that the great safeguard of early evacuation has been trammelled, so as to give the enemy a decided advantage. The result has been, on the whole, the contesting of the advance of plague inch by inch, as contrasted with a policy that would first permit of its presence being demonstrated and then taking action. The system is not without the drawback of expense; but even omelettes cannot be made without breaking eggs. During 1902–1903, the total spent on behalf of Local Fund Boards and municipalities under plague charges was Rs. 4,03,927, so that the contribution per head of the population of the Presidency for the year was 2 pies. So far as it is possible to gauge facts, it would seem that in restraining the advance of plague throughout the Presidency, the money demanded is well spent, in that trade and lives are husbanded. Even if it so happens the advance of the disease should prove irresistible, and the weak measure of attempting to restrain the spread of the disease only after it is proved to be actually present be resorted to, instead of attempting to prevent its securing a foothold, which is the leading feature of the existing policy, the chances are considerable that the inimical result upon public funds would be even more marked than at present, as the producer would be more seriously crippled.

18. In my report of 1902, I invited the attention of Government to the lack of bacteriological knowledge that should prove a safe guide to the sanitarian, with special reference to the theory of "recrudescence," which is, up to date, popular in India in connection with the supposed survival of the microbes on or in

the soil. It seems to me that it is important that this question should be thoroughly threshed out by a specially appointed bacteriologist. The technique of such a subject is beset with many difficulties, like other matters that require a certain amount of perseverance to overcome them, but it would be absolutely economical to appoint a specialist capable of working out the subject fully, even if a liberal salary for several months and an honorarium were to be debited to "plague charges." At any rate, from the sanitarian's point of view, it is absurd to go on spending money in disinfecting with such rigour the walls and floors of houses, without full knowledge of the microbe's capability of survival and fitness to increase in such environments. If, for instance, the bacteriologist would relieve the sanitarian as to burden of doubt as to the period of survival of the plague microbe in earthen floors and walls, and especially as to possibility of its "growing through" soil, as apparently on poor grounds maintained by Yersin, it would be a cheap, easy, efficient, rapid and cleanly method to apply the intense heat of the kerosine oil blue flame (8,000—25,000 candle power is easily secured) under air pressure at the end of flexible tubes to all indestructible surfaces, so that by merely painting over them death of the exposed plague microbes would be certain. This I have already shown by bacteriological experiment to be the probable result. But such results, when secured otherwise than on the surface of soil, are rendered dubious by the presence of air and moisture in the interstices, and are far too slow for work in practice. Surely, an answer to the question is worth having and paying for. In every village in this Presidency, kerosine oil could be obtained, whilst the machinery to give air pressure need be but of the most simple nature. The method of recording plague in this Presidency and the passport system enable each case of first appearance of the disease to be traced with fair accuracy. Investigation of records by me for this purpose goes to prove that town after town that has been infected has suffered solely from importation, and not from recrudescence of the disease of a past season; and that, similarly, it by no means follows that a town once infected may be visited again by the disease. The truth seems to be that plague is kept up not by germs retaining their vitality in formerly plague-infected dwellings, but by direct descent through cases that are not detected by the local authorities, either as a result of too early withdrawal of the sanitary staff during the hot season, or its too great attenuation for the purposes of economy, so that there is failure to maintain correct surveillance of the population concerned. Therefore, the idea that plague must exist in this or any other country for a number of years until its cycle has been fulfilled, seems to me altogether theoretical; in practice, an honest appreciation of the fact that the surveillance of the population should be as active during the hot season when plague wanes, as during the cold season when it waxes, would definitely refute an opinion that is an excuse for, and breeds, apathy. Above all things, much more attention seems to be necessary to secure plague-infected clothing than is possible under a mode of disinfection which requires soakage in liquid disinfectants, and its temporary removal from the owner. The best way to secure confidence *and* the clothing of inhabitants is undoubtedly by the use of a good class of steam disinfector, which is capable of doing its work rapidly at the doors of the infected dwellings in front of the owners concerned, so that they find themselves possessed of their clothing without appreciable deterioration. This view the Government of Madras is now attempting to meet and one light steam disinfector (Alliot & Paton) has already been imported, and it is hoped before next plague season this Presidency will be in possession of a number of light steam portable disinfectors possessed of vacuum and steam pressure arrangements, worked by means of kerosine oil instead of solid fuel. The use of kerosine oil will enable the apparatus to be lightly built, whilst it possesses the advantage of being procurable in every bazaar in the country. Putting aside the risk of being re-infected from foreign areas, I feel convinced that the energetic working of staffs during the hot weather and more effectual arrangements as to disinfection of clothing than at present existing, would render it possible to absolutely stamp out plague. Such statements ignore infection amongst rats. But I have never yet heard of proved recrudescence through rats. There is against this the evidence of the second appearance of plague in Glasgow, but the chances are there as elsewhere fresh importation had occurred. Rats may be trusted not to stop in

any place where their lives are unsafe by reason of disease, or are rendered uncomfortable by reason of various appliances to that end used by human beings. Undoubtedly, much of the plague infection of this Presidency has been derived from Mysore where there is an unusual method of treatment of plague, the chief feature of which has been that no compulsion has been applied. This is closely allied to the so-called "common-sense plague policy." During the year, a conference with the authorities concerned in Madras and in Mysore was held, at which I was present. Although that grade of sanitary co-operation with this Presidency which, it was hoped would be secured, has not been fully attained in Mysore, the Government of that territory has at least sanctioned a staff, the object of which is to secure inter-communication between Mysore and Madras districts. Nominally, at least, disinfection is now compulsory. It is hoped that, during the ensuing year, Mysore may prove of less danger to Madras than it has hitherto.

FEVERS.

19. In municipalities, the death-rate from fevers was 6·3 against 6·7 in the preceding year, and in districts, 8·1 against 7·7. Having regard to the fact that plague prevailed in certain of the districts, the small variation under the head of "fevers" and absence of a marked increase under "all other causes" bespeak a fair amount of accuracy as to finding cases of plague, and, therefore, the prevention of their being placed under incorrect heads of registration. The town of Madura shows an increase under fevers of 1·2. The Chief Certificated Sanitary Inspector has shown that, in several localities of the town, the anopheles mosquito is present. A possible rise of fever prevalence in this district should be watched for by the local authorities with care. Under the influence of the Periyár project, large tracts of formerly dry land surrounding the town are being placed under wet cultivation. It is possible that the necessary conditions of a human germ bearer and a readily-infected species of anopheles may yet conjointly exist, although at the present time so far as the rural tracts are concerned and statistics disclose, no evil results have occurred. Nevertheless, the necessity throughout this district for carefully getting rid, by efficient drainage, of the water that has fulfilled its function of irrigation should be held in mind. Kurnool shows a decrease of 3·9 of the fever rate. The registration is probably fairly correct when judged by the existence of an increased birth-rate, the total diminished death-rate, and the lack of tendency to quote deaths under any other particular head. This diminution is therefore apparently in direct response to altered conditions as to irrigation surrounding the town. In 1881, when Vice-President of this Municipality, I was able to prove by records in my possession to the Municipal Council that the introduction of malarial fever into the town immediately followed the large use of irrigation in the vicinity, and advised that a zone of a mile radius should be established round the town, in which no wet cultivation should be permitted. Fortunately, the belief deduced from long observation by formerly received authorities as to the influence of moisture on earth and its removal by drainage, which existed at this time, under the impression that the earth contained the germ (which may yet in part be proved correct) made no difference as to the results. On adoption of this measure, a marked fall of the fever rate occurred: but, as years passed, the Council became less strict in observance of the zone and the fever rate increased. Government recently ruled, on a reference by the Collector of the district, that not the mile zone but the whole of municipal limits * should be free of wet cultivation. Cuddapah, which shares with Kurnool the unenviable notoriety of being highly malarious, is also about to secure a dry zone within its municipal limits, which will doubtless prove helpful in restraining the conditions favourable to the incidence of malarial fever. On the opposite, Masulipatam is increasing its wet cultivation in the immediate neighbourhood of the town. I found in pools on its outskirts no lack of anopheles held to be good malaria bearers. Here, the expenditure of considerable capital for conducting

* The change has not materially altered the size of the Zone.

drainage on the method employed in Holland would be necessary to secure efficient results: but much valuable land would thereby be rendered arable, and would be an offset to expenditure.

20. The question of the extent to which malarial fever prevailed in the Madras City has been a matter of medical and sanitary discussion for several years. That malarial fever can be acquired in Black Town is indubitable; but it has been long perceived that the cases recognized as malarial fever and accompanied by enlargement of the spleen did not respond readily to quinine treatment, and pursued a curiously obstinate course. In my own experience, a marked characteristic of this form of Madras fever was the frequency of the occurrence of lobular pneumonia as a complication. Although the subject is yet incomplete, the highly important researches of Captain Donovan, I.M.S., who found certain micro-organisms in the spleen, which have been named after him *Piroplasma Donovani*, and an investigation which subsequently was opened up, under the orders of the Government of India, by Lieutenant Christophers, lately on duty with the Malaria Commission, go to prove that this fever is not malarial but of a type depending upon the presence of the specific bodies discovered by Captain Donovan, of which the nature is not yet fully ascertained. If this enquiry be successful, it will form an important addition to medical science generally, and will prove of special benefit to the City of Madras which has so long suffered from this hitherto misunderstood form of fever.

21. In June, 1900, I sent a Circular inviting all Local Bodies to take advantage of the discovery of Ross as to the connection between the mosquito and spread of malarial fever, and especially pointed out that, granted the hitherto recognized policy of drainage of large areas was beyond their means, the palliative mode of causing destruction of mosquito larvæ in pools by kerosine and of the germ in the human being by means of quinine, was at least open to them. For this end, they were advised to select areas for experiments. With the exception of the Kurnool District Board, which put aside a sum of Rs. 500 for an experiment, no action of importance followed. This seemed to me greatly due to absence on the spot of persons trained to observing mosquitoes and their larvæ. I consequently, as stated in last Report, assembled a class of Sanitary Inspectors at the highly malarious village of Dhone in the Kurnool District, and trained them for the work. Since then, I have attempted to follow up action taken by the men on their return to their municipalities, by means of reports through the Chairmen of the Municipalities concerned. They were particularly directed to insert in a map of their towns the spots where anopheles pools were found, and ascertain the subsequent influence of their disappearance under their efforts towards destruction, or removal of the water by filling in or draining. With few exceptions, Certificated Sanitary Inspectors have taken up the matter energetically and the Chairmen concerned have encouraged their efforts. Reports of special interest as exhibiting progress have been received from Certificated Sanitary Inspectors G. C. Nallaswami Pillai (Madura); K. Seshagiri Rao (Cuddalore); T. C. Sankara Kurup (Calicut); S. Sitharama Aiyar (Cocanada); T. S. Venkatarama Aiyar (Conjeeveram); M. Venugopalaswami Pillai (Bellary); and S. Velayudam Pillai (Palamcottah). In reviewing progress of efforts towards extermination of malaria (G.O., No. 1343 L., dated 17th December 1902), the Surgeon-General called the attention of Government to my proposal made to local bodies to select areas for experiment, and suggested that definite orders as to this should be issued. The result has been that Government has directed that funds be allotted by local bodies for experiments in six carefully selected areas, having for their object the extermination of malaria by the conjoint use of mosquito larvæ destruction, administration of quinine to human beings, and minor engineering works.* The officer selected for the duty will work under this office, and will have attached to him an intelligent engineering subordinate. There are here, therefore, the elements for a thoroughly honest trial of modern methods of dealing with malaria.

* The necessity for a reversion to the ancient policy of making engineering works the first line of defence is well borne out by Lieutenant Christophers' candid estimate of results secured in Mian Mir (Second Report of the Anti-malarial operation at Mian Mir, 1901—1903).

DYSENTERY AND DIARRHŒA.

22. In rural areas, the total average death-rate from dysentery and diarrhœa amounted to 1·1 whereas, in municipalities, it amounted to 4·6; in the former case, the higest figures reached were in the Nilgiris (3·3), in Malabar (2·8) and in Chingleput (2·7). Such rates are however small when compared with those obtaining in the municipal towns of Palamcottah (14·9), Tiruvannámalai (11·0), Vizianagram (8·1), Cochin (7·7), Periyakulam (7·5), Coonoor (7·4), Gudiyáttam and Vizagapatam (7·2 each), Tuticorin (7·0), Parlákimedi (6·9), Masulipatam (6·8), Chingleput and Vellore (6·6 each), Tirupati (6·1), and Conjeevaram (6·0). It would serve no good purpose for me in this Report to descant upon the individual local causes which lead to these results. It is obvious that the aggregation of human beings upon a site, as found in large towns, is more favourable to the propagation of the causes of diarrhœa and dysentery than in the more thinly populated villages of rural areas, and that defects of water-supply and of badly conserved soils are more liable to exhibit their mark in a locality where certain conditions of natural soil and surface and subsoil drainage exist than in others. The more experience accumulates in reference to these diseases, the more it is evident that a town cannot rely upon abolishing them by simply taking a new supply of water, and that the supply must be so distributed that its inhabitants shall not have recourse to inferior water at intervals, and, even when this is attended to, that the soil must be kept pure, as a result of correctly conceived and correctly carried out conservancy systems. There are eleven towns at the present time which possess expensive water-supply systems in this Presidency to which these criticisms are applicable, whilst in no case can it be said that the conservancy system of any municipal town is complete. It is a curious fact that a people who are possessed of scriptures which are spoken of with reverence by them, and which lay down rules of great hygienic value as to the disposal of human excretions, should find no representative in Municipal Councils that would take up the matter of conservancy seriously. In a town famous for its advance in European education, where the municipal representatives are largely vakils, always profoundly happy at the prospect of a debate at its Council meetings, I found, in a thickly-populated area, up to the door of an important temple, a normal not casual place of easement.

INJURIES.

23. The rate for injuries noted for the year 1902 was maintained during 1903, namely, ·4. As usual, suicides of females were in greater proportion than those of males, namely, 100 of males to 125·3 of females.

ALL OTHER CAUSES.

24. Under this most unsatisfactory heading (so far as nosological purposes and the possibility of locating diseases are concerned), 45·9 per cent. of the total mortality was registered. Having regard to the presence of plague in the Presidency, the possibility of an increased number of events being registered by the people under this heading, with the object of getting rid of plague measures, is necessarily of importance to local authorities. Notwithstanding that the total plague cases for the year were 2,496 more than in 1902, the advance under this head, granting there is any necessary connection between the two, does not seem to have been of much importance, namely, 1 per mille more than the former year (9·2). The increase was not confined to districts affected with plague.

SECTION IX.

SANITARY WORKS—CIVIL.

MUNICIPALITIES.

25. It goes without saying that the possession of a soil free from contamination by rubbish and more especially by human excrement, is of prime importance to the health of a town. In recognition of the value of soil cleanliness, in the present day, many towns in Great Britain do not scruple at great expense to flush narrow court-yards within insanitary areas, at regular intervals. The late Boer war afforded a repetition of a familiar hygienic lesson, by again proving that the uncleanly soil of even temporarily inhabited areas was followed by a distribution by means of dust, flies and water, of the causative agents of diarrhœa, dysentery and typhoid, with the attendant heavy, yet preventible, mortality. Municipal Councils, although undoubtedly improving year by year in recognition of the importance of soil cleanliness, still leave much to be desired in this respect. For instance, in the town of Madura, which has a population of 105,984 and therefore ranks as the second largest town in the Presidency, the number of public latrines is eight specially built for the purpose (and, in this respect, it is worth remembering that these latrines are usually for males and females in one spot and, therefore, they should obviously be quoted as four only) together with four brick wall and one mud wall "simple enclosures." It also possesses 12,000 so-called "private latrines," of which, however, only 5,356 (serving a population, say, of 26,780) are cleansed by municipal agency, whilst it is doubtful if any form of systematic cleansing of the remainder really takes place unless that agency be employed. Under such circumstances, a large part of the duty of the night-soil collecting staff consists in perambulating the nooks and corners of inhabited areas. Under this system even if the fæcal matter were removed, it cannot be imagined that it is so fully effected as to leave the soil uncontaminated, and that dust and flies may not serve as distributing agents of pathogenic germs. In quoting the case of Madura, I have merely chosen it for illustration, on account of its large population; its incomplete system of conservancy is but typical of what occurs in a less degree in certain other towns. On the other hand, it must not be thought that advance however slow has not been made steadily from year to year. Thus, one of the errors constantly made by Councils is the neglect of the removal of the night-soil in favour of rubbish. Hence, readjustments of staffs demanding an increase of scavengers for night-soil removal and a decrease of sweepers for rubbish removal, usually denote a tendency in the right direction. The use of light tramways, or a suitable adaptation of the Shone system after the Warrington method for rapid removal of night-soil, is within the financial capabilities of some municipalities, but conservatism in favour of lumbering bullock carts will take some time to disappear. During the year, the number of sweepers was decreased from 2,671 to 2,603, whilst that of public scavengers was increased from 1,456 to 1,480. The night-soil carts have been increased from 764 to 867. If the whole mass of the municipal population be regarded, exclusive of Madras City, it is found that, for each 10,000 there are 0·6 Sanitary Inspectors, 3·0 conservancy subordinates, 7·7 public night-soil scavengers, 12·3 municipal scavengers serving private houses and 13·6 sweepers. In 1894, the proportions were 1·2, 2·8, 6·7, 6·1 and 14·3. The Sanitary Inspectors of that year were unqualified, and consequently their reduction in quantity, in favour of the smaller number of Certificated Sanitary Inspectors of the present day, represents loss.

26. In reference to disposal of night-soil, there is evidence of advance: its utility for agricultural purposes, notwithstanding caste prejudices, is year by year more fully recognized. Thus, during 1902–1903, municipalities realized under rubbish and night-soil disposal the sum of Rs. 42,078 against Rs. 41,824 in the previous year and Rs. 22,773 during 1892–93. In regard to utilization of sewage there are *promises* that action will be taken by Chingleput, Karúr, Chicacole, Tinnevelly and Bezwada. Kumbakónam, Negapatam, Tanjore, Rajahmundry and the City of Madras continue to secure good financial results by their efforts in this direction. Vizianagram and Vizagapatam, under the stimulating care of the present District Medical and Sanitary Officer Major Vickers, I.M.S., have made specially useful endeavours by diverting sewage from directions where hitherto its effects were harmful. In Tanjore, the net profit from sewage farming was Rs. 1,875; in Madras City, it amounted to the sum of Rs. 36,016. Modified filter trenches to replace cesspools have been introduced under my advice with success in Cuddalore, Palamcottah and Periyakulam. For the last place, the filter trench principle was also advised for a public latrine with success, and it seems to me by such adaptation economical latrines can be secured.

27. In the important matter of public water-supplies, beyond the completion of the Cocanada scheme, no advance has been made; nor does there seem any possibility of any town undertaking a scheme of any sanitary importance until Government is in a position to again offer grants-in-aid, which usually amounted to one-half the capital to be sunk. As an alternative, seeing that the financial condition of most municipal towns is sound, it seems to me it ought to be possible, by Councils putting their wants before English investors, to secure English capital on the security of taxes for investment. There is, of course, no lack of capital in this country that might be thus suitably invested, but the Indian capitalist's estimate of what is a fair return for his money is warped by his experience of the profit of money-lending.

28. With the advance of plague, it is probable that more attention will be given by municipalities to the condition of overcrowded localities than hitherto. Bad examples of these are in Rajahmundry, Madura, Tinnevelly, Negapatam, Coimbatore and Ootacamund. Improvement schemes are in course of preparation in all these localities. Under Mr. Pears, the present President of the Municipal Commission, City of Madras, the subject is also receiving attention in respect to the notoriously insanitary locality known as the Tinnevelly Settlement.

29. During the year, Government undertook the amendment of the City of Madras Municipal Act. The introduction of several efficient sanitary clauses is contemplated.

30. Attached is the usual table (Appendix XI) showing the results of completed sanitary works on public health. As to the six towns with protected water-supply, where distribution is fairly efficient, the following average figures are obtained:— For five years previous to the introduction of water-supply, the average cholera rate was 4·1; for the five years ending 1903, it was 1·4 and, during 1903, 1·3. The fever death-rate for five years prior to the introduction of water-supply was 8·9; in the five years ending 1903, it was 4·4, and, in 1903, 3·6. The total death-rate for five years prior to introduction of water-supply was 30·4; for the five years ending 1903, it was 27, and, in 1903, it was 27·6. Under these circumstances, I do not think there is any reason to doubt that the introduction of protected water-supplies (although not in a single instance in this Presidency can it be said that it has been so fully introduced into a town to the exclusion of other sources that its full benefits could be derived by the population) has been followed by a marked reduction in total mortality, and in the fever and cholera rates. In other parts of India, I am aware it is held that the introduction of water-supply into towns when unattended with a drainage system, as is the case in this Presidency, has been followed by an increase of the fever-rate, and it is of course no stretch of theory to ascribe exacerbation to better opportunities for propagation of the anopheles mosquitoes. However, statistics have continued now for some years past to teach the one lesson that, with the introduction of improved water sources in this Presidency, a diminution of fever-rate has followed. It has been long felt by the medical profession that

there prevail amongst the people still imperfectly recognized forms of fever, and it is quite possible that certain of these are connected with the water-supply. For example, we know nothing of the real origin of the *piroplasma Donovani*, and it may happen this may be proved to be connected with the water-supply, or that the theory that water-supply is connected with malarial fever has still truth in it, notwithstanding the clear demonstration that it is certainly capable of being propagated by transfer by mosquitoes from man to man. In respect to the fever-rate, it is worth remembering that there may be less inclination during the period of plague prevalence to register deaths to be due to "fever"; but how little this possibility need be taken into account can be judged by contrasting the conditions of towns where protected water-supplies have not been introduced. Here, we find that in 14 towns the average fever-rate for the five years ending 1898 was 6·7 and for the same period ending 1903 5·9; a reduction of ·9 against 4·5 in the case of the towns supplied with water. Moreover, the total mortality, far from being reduced, rose from 29·4 to 30·0. Although, therefore, I think that the towns that are now supplied with water by no means have obtained the maximum benefit they should secure for the money they have spent, were they to arrange for more perfect distribution and for the closing of all promiscuous water sources, it seems to me evident that the populations in decreased mortality are already reaping the benefit that should compensate for the inconvenience caused by increased taxation. There is, I believe, room for reform in the matter of supplying houses with water. It is rarely necessary for native houses on account of a climate of the character of the South of India, or on account of caste, to require distribution of the water in private premises beyond the reach of ready inspection. When distribution of this nature is necessary, it should be paid for as a luxury, and thus both economy of water and its purity would be controlled better than at present. Unfortunately, no real effort to secure economy of water by Councils seems to be made beyond shutting off the water-supply for a certain number of hours daily—thus causing all the danger of intermittent supplies. Beyond the Cocanada water-works already referred to, which were opened in July 1903, no new major sanitary works were completed during the year.

DISTRICT BOARDS.

31. I regret I have nothing to record as to advance by District Boards that would appeal to the average sanitarian. The people under the administration of these Boards number 34,598,644 against 2,406,455 in municipalities. The total income of these Boards (1902–1903) amounted to Rs. 96,57,247. Of this amount, if the total income after meeting "plague charges" be regarded as that solely available, 5·4 was spent on sanitation, as contrasted with 7·2 per cent. on education (irrespective of Rs. 21,24,402 * from Provincial Funds) and 8·5 on medical services. In the midst of a population larger than that of England and Wales, the expenditure in obtaining new sources of water-supply, which are certainly most urgently required, amounted to ·1 pie per head. In not a single village, up to date, is there any pretence towards public water-supplies delivered in protected pipes by lifting or by gravitation, after modern methods. Aeromotors and kerosine-oil engines are, at the present time, cheap and require but modest skill for their use, whilst the possibility of landing pipes in rural parts by rail and canal is now infinitely better than 30 years back; yet, District Boards continue to forget that to protect their water-supplies by less crude methods than at that period might reasonably be expected of them. The remainder of the 5·3 per cent. of the total funds was spent in *repairing* old wells and tanks, in conserving 399 unions and 140 villages, and in the sanitation of fairs and festivals. The absence of new sanitary works to which I have invited attention is in the main due to the Cinderella share that sanitation receives from the income of Boards, but also to the absence of officers who have the time to devote to not only suggesting but drawing up the main outlines of simple schemes. Much may be hoped for in the future in initiating small and useful sanitary schemes, by Government

* This is the figure for 1901–1902.

having sanctioned the employment of District Health officers of the Assistant Surgeon class (G.O., No. 1558 L., dated 7th December 1903). These men, I have recently proposed to Government, should be required to take the "Licentiate of Sanitary Science" degree of the University of Madras. They would be aided by competent Engineering Subordinates. The appointments now sanctioned form an important link in the scheme some years back placed by me for consideration before Government in which Vaccination, Sanitation and Registration of rural areas were placed under the administration of a single Sanitary Department (G.O., No. 435, Public, dated 17th April 1897). All hopes of such an advance have however been aborted by Government which had hitherto fostered the growth of a movement to supply the Presidency with Certificated Sanitary Inspectors suddenly forbidding their use in rural areas in permanent posts, on the ground that their employment "with a roving commission to point out sanitary defects in villages would be attended with grave danger," and that "their right to recommend or report would furnish a powerful weapon for misconduct" (G.O., No. 1131 L., dated 11th September 1903). Although the same Order secured an improvement in the education of Sanitary Inspectors by giving them a course in Sanitary Engineering, the conditions brought about by it are such as to react generally upon sanitary advance in rural areas. Not only has this Order operated in this manner, but it will undoubtedly greatly limit the outturn of Sanitary Inspectors. It has already rendered the supply of certificated men for plague duty a matter of difficulty.

MECCA PILGRIMAGE.

32. No pilgrim for Mecca departed from ports of the Madras Presidency during the year.

SECTION X.

PERSONAL PROCEEDINGS AND GENERAL REMARKS.

33. On a reference by Government as to the conditions governing malaria prevalence in the municipality of Nandyal, I inspected that town and its neighbourhood. Also in reference to malaria conditions, I inspected the village of Dhone, which had been selected as a suitable site for an experimental improvement. After my return to Madras, I proceeded to Jalarpet, where I inspected the plague hospital and the infected village in its neighbourhood. Plague prevalence in and around Vániyambádi and Tiruppattúr in the Salem district then demanded special enquiry. With the same object, I inspected Udiyandrum and neighbourhood, and the municipal town of Vellore, in the North Arcot district. In March, Certificated Sanitary Inspectors were collected by me at Dhone (the malarious village above referred to) and there they were trained by me with reference to the recognition of malaria-bearing mosquitoes, and the methods for malaria prevention amongst communities. On my return to Madras, I found that plague had appeared at Gúdalúr in the Nilgiri district, and, in view of the danger which that outbreak implied (in that this district forms a link between the West Coast and the south of India) I thought it desirable to at once proceed thither. I therefore inspected Gúdalúr, and consulted with the Collector and other officers concerned as to arrangements with reference to Ootacamund, Coonoor and Wellington. From thence, I proceeded to the municipal town of Bellary, and inspected the plague arrangements there. Subsequently, I went to Coimbatore with the object of carrying out an ordinary sanitary inspection. Before this could be completed, it was ascertained that plague had appeared at Ootacamund. As soon as I had, in consultation with the Collector and other authorities concerned, advised as to the defence of the Coimbatore district, I proceeded to the Nilgiri district, and again saw as to arrangements at Coonoor, the Cordite Factory, Wellington and Kotagiri. On my return, I inspected the organization at Coimbatore and then proceeded to Tiruppúr, where the local authorities suspected the existence of plague. I then proceeded to Masulipatam, and inspected that town more especially with reference to the proposed water-supply, and, during the same journey, inspected alternative positions for the Bezwada hospital. On my return, I was deputed by Government to attend a conference of Madras and Mysore officials at Bangalore, which had for its object the securing of some method of organized co-operation as to plague. The town of Trichinopoly was inspected with reference to selection of new extension sites. At Srírangam, the condition of an offensive trade was entered into at the request of the District Magistrate. Méttupálaiyam was now infected with plague, and threatened the safety of the rest of the Coimbatore district, and therefrom the south of India. This was now specially inspected. Erode, as forming the junction by rail between these infected districts and the south, was also visited and arrangements examined. The town of Salem was formally inspected, and the question of a source for its water-supply was specially entered into. Yercaud was also visited and its suggested sources of water-supply were sanitarily surveyed. I inspected Nellore in regard to a burial-ground question. With the President, Municipal Commission, Madras, an insanitary area in that city was inspected, with special reference to a scheme for radical improvement. As plague at Coimbatore still showed no signs of abatement I again visited the town, my real objective being Palghat which I considered threatened, but I was unable to effect the inspection of the latter place before the end of the year.

34. On behalf of the Sanitary Board 153 plans and estimates, etc., for sanitary works were scrutinized from a sanitary point of view.

35. Up to July 1903, I had personally trained all Temporary Sanitary Inspectors for plague duty: but I then handed over this work to my Personal Assistant. I have however continued to set the examination questions, and have examined all papers of candidates judged by him to be fit; that is, I have spared myself the duty of examining failures. In this way, 1,152 papers were examined during the year. 33·6 per cent. of the candidates passed the examination. Four hundred and twenty-three Temporary and Certificated Sanitary Inspectors were posted by my office to plague duty. This duty of itself *plus* the scrutiny of papers embodying complaints of both employés and employed, disputed points as to pay, travelling allowance, etc., cause as much work as administering a special department.

36. My only Deputy, Captain Cornwall, I.M.S. (who is burdened with the following multiple of offices—"Deputy Sanitary Commissioner and Inspector of Vaccination, Professor of Hygiene and of Practical Bacteriology in the Madras Medical College"), being practically an Educational officer was not available, except for sufficient time daily to see to *routine* papers of the Vaccination Department. He was not at my disposal for inspection duty, except for about six weeks in the year. Of this period he, however, made excellent use, by making an inspection of Mangalore as to plague arrangements, and the borders of Malabar in reference to the existence of plague in the Nilgiri district. He also made a similar inspection of the area around Udiyandrum in the North Arcot district. During his tours, he did his best to obtain a grasp of the working of the Vaccination Department and, for this purpose, managed to ascertain the state of affairs in a large number of villages by means of rapid surprise visits. Since, 1898, when Lieutenant-Colonel Bannerman was first deputed to proceed to Bombay, I have had no Deputy that was more than spasmodically at my disposal, although from July 1902 to November 1903 Government sanctioned the employment of a Personal Assistant. Assistant Surgeon S. Krishnamurthi, who has since secured the appointment of Sanitary Commissioner for Travancore, occupied this post and proved of much utility. He was succeeded by Assistant-Surgeon J. C. Bartley who performed his duty satisfactorily up to 9th December 1903, when he was removed under G.O., No. 513, dated 20th May 1901.

37. In contrast with what may be judged to be the carping spirit adopted in respect to measures which, rightly or wrongly, I judge may stay or trammel sanitary advance, it is a pleasure to record that, during the year, Government sanctioned the addition to the group of buildings (which it has been good enough to pay a compliment to the Indian Medical Service by naming the King Institute of Preventive Medicine) already in process of erection at Guindy, for the preservation of animal vaccine and bacteriological investigation, a further block for the purpose of serum manufacture and investigation. In pursuing the policy of making this combination, there can be no doubt that Government has placed at the disposal of the medical profession in this Presidency opportunities for research such as, so far as I can ascertain, are nowhere else procurable with the same facility; whilst both public bodies and private individuals should, in the capability of securing early bacteriological diagnosis of diseases, find sound cause for comfort. Lieutenant-Colonel Bannerman, I.M.S., joined for duty on the 10th December as the first Superintendent of the still incomplete buildings. For this post, his long experience of bacteriological work in Bombay should eminently fit him. If to this advance be added the fact already alluded to (paragraph 16) that Government has called for a scheme for reorganization of the Vaccination Department of the Presidency during 1903, which if found reasonable there is evidently a wish to adopt, it may be fairly stated that if, in a day, it be not possible to reduce the sanitation of bodies enjoying the privilege of self-government to a state of mechanical accuracy in working that, at least, where advance has been considered feasible by Government, the opportunity has been afforded by it.

38. One hundred and sixty-one reports as to the state of towns and villages were received from 19 District Medical and Sanitary officers. In 114 instances special references to local authorities were made as to the nature of action taken, with the recommendations of this office when thought necessary. Several reports were also received from the District Medical and Sanitary officers as to the sanitary condition of schools and in selected cases action was urged upon local authorities by

this office. In connection with school hygiene, I may state that I specially urged upon the attention of the Director of Public Instruction the desirability of his arranging that lecturers in teaching should undergo a course of training in school hygiene. Intimations of approaching important festivals were received and, in each case, the nature of the sanitary arrangements contemplated was ascertained from the District Medical and Sanitary officers concerned, and, where thought necessary, local authorities were advised on the subject. Reports of fairs and festivals were received in 102 cases and advice was offered in 71 cases for future guidance. Necessary correspondence on matters connected with plague with various authorities added considerably to routine sanitary work.

39. In December last in response to my request (on the requisition of the Army Sanitary Commission) a specimen of water supposed to be contaminated with the cholera microbe was received. The Superintendent of the King Institute of Preventive Medicine examined it bacteriologically with negative result.

40. In 1903, 56 candidates qualified as Certificated Sanitary Inspectors.

41. Excluding Malabar, the Nilgiris and South Canara, where there are no unions and consequently no village sanitation inspection books have been opened, there are 18 districts where they should be maintained. In Vizagapatam no books were opened during the year. Ganjam has furnished no information on the point. Of the remaining districts, in 12 the books were kept with care, in 2 indifferently, and in 2 badly. Some improvement may be expected in future years by Government having directed that village sanitary inspection books should be produced before District Revenue officers, during jamabandi.

42. Orders as to office stores and service registers have been obeyed.

(Signed) W. G. KING, Lt.-Col., I.M.S.,
Sanitary Commissioner for Madras.

OFFICE OF SANITARY COMMR., CHETPUT,
MADRAS, *15th May* 1904.

APPENDIX.

VITAL STATISTICS OF THE GENERAL POPULATION.

No. I.—*Shewing the Births registered in the districts of the Madras Presidency during the year* 1903.

1	2			3	4			5			6			7	8	9	10		
Number.	Population (exclusive of Europeans and Eurasians) as per census of 1901.			Districts.	Population (exclusive of Europeans and Eurasians) for which returns were received.			Number of births registered (exclusive of Europeans and Eurasians and still-births).			Ratio of births per 1,000 of population.			Number of males born to every 100 females born.	Excess of births over deaths per 1,000 of population.	Excess of deaths over births per 1,000 of population.	Mean ratio of births per 1,000 during previous five years.		
	Males.	Females.	Total.		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.				Males.	Females.	Total.
1	403,090	384,662	787,752	Anantapur	403,090	384,662	787,752	11,872	11,831	23,703	15·1	15·0	30·1	100·8	8·3	...	13·9	13·7	27·6
2	485,642	471,425	957,067	Bellary	485,642	471,425	957,067	15,370	14,654	30,024	16·1	15·3	31·4	104·9	2·2	...	15·9	15·4	31·3
3	659,902	649,468	1,309,370	Chingleput	659,902	649,468	1,309,370	26,188	25,192	51,380	20·0	19·2	39·2	104·0	13·8	...	17·3	16·6	33·9
4	1,082,528	1,118,145	2,200,673	Coimbatore	1,082,528	1,118,145	2,200,673	34,778	33,621	68,399	15·8	15·3	31·1	103·4	8·7	...	14·5	14·2	28·7
5	655,730	635,395	1,291,125	Cuddapah	655,730	635,395	1,291,125	18,310	17,848	36,158	14·2	13·8	28·0	102·6	6·6	...	12·4	12·0	24·4
6	961,706	1,048,243	*2,009,949	Ganjám	961,706	1,048,243	2,009,949	25,690	24,057	49,747	12·8	12·0	24·8	106·8	10·2	...	13·4	12·4	25·8
7	1,131,231	1,169,569	*2,300,800	Gódávari	1,131,291	1,169,569	2,300,800	32,813	31,756	64,569	14·3	13·8	28·1	103·3	8·8	...	15·2	14·5	29·7
8	1,089,994	1,064,236	2,154,230	Kistna	1,089,904	1,064,236	2,154,230	36,660	35,584	72,244	17·0	16·5	33·5	103·0	11·2	...	17·2	16·7	33·9
9	456,779	447,428	904,207	Kurnool	440,553	431,395	871,948	13,855	13,422	27,277	15·5	15·4	31·3	103·2	9·4	...	14·2	13·7	27·9
10	248,742	244,938	493,680	Madras	248,742	244,938	493,680	9,821	9,435	19,256	19·9	19·1	39·0	104·1	1·1	...	20·5	19·5	40·0
11	1,356,693	1,472,951	2,830,644	Madura	1,856,693	1,473,951	2,830,644	33,688	32,151	65,339	11·9	11·4	23·3	104·8	7·2	...	11·9	11·3	23·2
12	1,381,300	1,414,281	2,795,581	Malabar	1,876,329	1,408,978	2,785,307	48,238	45,423	93,661	17·3	16·3	33·6	106·2	9·7	...	12·3	11·7	24·0
13	752,243	744,267	1,496,510	Nellore	752,243	744,267	1,496,510	22,140	21,779	43,919	14·8	14·5	29·3	101·7	9·6	...	12·5	12·3	24·8
14	58,350	49,323	107,673	Nilgiris	58,350	49,323	107,673	1,682	1,600	3,282	15·6	14·9	30·5	105·1	1·9	...	14·2	13·5	27·7
15	1,100,354	1,106,463	2,206,817	North Arcot	1,100,354	1,106,463	2,206,817	32,611	31,571	64,182	14·8	14·3	29·1	103·3	10·6	...	12·8	12·3	25·1
16	1,085,090	1,118,943	2,204,033	Salem	1,085,090	1,118,943	2,204,033	38,249	36,772	75,021	17·3	16·7	34·0	104·0	6·6	...	16·1	15·3	31·4
17	1,167,748	1,181,429	2,349,177	South Arcot	1,167,748	1,181,429	2,349,177	41,106	39,039	80,145	17·5	16·6	34·1	105·3	10·3	...	15·2	14·5	29·7
18	548,345	586,044	1,134,389	South Canara	546,588	584,193	1,130,781	19,521	18,905	38,426	17·3	16·7	34·0	103·8	7·6	...	15·2	14·7	29·9
19	1,065,791	1,178,158	2,243,949	Tanjore	1,065,791	1,178,158	2,243,949	39,377	37,701	77,078	17·5	16·8	34·3	104·4	8·4	...	16·1	15·2	31·3
20	1,001,578	1,057,625	2,059,203	Tinnevelly	1,001,578	1,057,625	2,059,203	35,772	34,771	70,543	17·4	16·9	34·3	102·9	10·5	...	17·0	16·2	33·2
21	699,274	744,421	1,443,695	Trichinopoly	699,274	744,421	1,443,695	24,880	23,810	48,640	17·2	16·5	33·7	104·3	9·3	...	15·4	14·8	30·2
22	1,445,598	1,482,590	*2,928,188	Vizagapatam	1,016,471	1,064,757	2,081,228	31,142	30,445	61,587	15·0	14·6	29·6	102·3	11·5	...	14·7	14·2	28·9
22	18,841,708	19,371,004	38,212,712	Grand Total for the Presidency.	18,385,627	18,929,984	37,315,611	593,713	571,367	1,165,080	15·9	15·3	31·2	103·9	9·0	...	14·7	14·1	28·8
232	2,031,013	2,106,964	4,137,977	Total of Town circles in the Presidency.	2,031,013	2,106,964	4,137,977	66,895	63,002	129,897	16·2	15·2	31·4	106·2	4·1	...	17·0	16·1	33·1
185	16,810,695	17,264,040	34,074,735	Total of Rural circles in the Presidency.	16,354,614	16,823,020	33,177,634	526,818	508,365	1,035,183	15·9	15·3	31·2	103·6	9·7	...	14·5	13·9	28·4

* Including the Hill Tracts.

NOTE.—The population for which the returns were received from the district of Ganjám is not available according to the census of 1901. Hence the ratios have been calculated on the total population of the district.

No. II.—*Statement of births and deaths registered in the districts of the Madras Presidency during the year 1903.*

1	2	3	4	5			6		7			8
Serial number.	Districts.	Area in square miles.	Average population per square mile.	Population (exclusive of Europeans and Eurasians) for which returns were received. Males.	Females.	Total.	Births. Total number.	Birth-rate per 1,000 of population.	Number of deaths registered (exclusive of Europeans and Eurasians and born dead). Males.	Females.	Total.	Number of deaths of males to every 100 deaths of females.
1	Anantapur ...	5,557	141·8	403,090	384,662	787,752	23,703	30·1	8,695	8,182	17,177	102·5
2	Bellary ...	5,875	162·9	485,642	471,425	957,067	30,024	31·4	14,370	13,563	27,933	106·0
3	Chingleput ...	3,079	425·3	659,902	649,468	1,309,370	51,380	39·2	16,972	16,323	33,295	104·0
4	Coimbatore ...	7,860	280·0	1,082,528	1,118,145	2,200,673	68,399	31·1	24,860	24,542	49,402	101·3
5	Cuddapah ...	8,723	148·0	655,730	635,395	1,291,125	36,158	28·0	14,046	13,572	27,618	103·5
6	Ganjám ...	8,372	240·1	961,706	1,048,243	2,009,949	49,747	24·8	14,944	14,465	29,409	103·3
7	Gódávari ...	7,972	288·6	1,131,231	1,169,569	2,300,800	64,569	28·1	22,947	21,367	44,314	107·4
8	Kistna ...	8,498	253·5	1,089,994	1,064,236	2,154,230	72,244	33·5	24,571	23,504	48,075	104·5
9	Kurnool ...	7,578	115·1	440,553	431,395	871,948	27,277	31·3	9,824	9,272	19,096	106·0
10	Madras ...	27	18,284·4	248,742	244,938	493,680	19,256	39·0	9,618	9,102	18,720	105·7
11	Madura ..	8,701	325·3	1,356,693	1,473,951	2,830,644	65,839	23·3	23,479	22,068	45,547	106·4
12	Malabar ...	5,793	480·8	1,376,329	1,408,978	2,785,307	93,661	33·6	34,087	32,616	66,703	104·5
13	Nellore ...	8,761	170·8	752,243	744,267	1,496,510	43,919	29·3	14,933	14,510	29,443	102·9
14	Nilgiris ...	957	112·5	58,350	49,323	107,673	3,282	30·5	1,632	1,449	3,081	112·6
15	North Arcot ...	7,386	298·8	1,100,354	1,106,463	2,206,817	64,182	29·1	20,449	20,392	40,341	100·3
16	Salem ...	7,530	292·7	1,085,090	1,118,943	2,204,033	75,021	34·0	30,301	30,042	60,343	100·9
17	South Arcot ...	5,217	450·3	1,167,748	1,181,429	2,349,177	80,145	34·1	28,448	27,366	55,814	104·0
18	South Canara ...	4,022	281·1	546,588	584,193	1,130,781	38,426	34·0	15,203	14,661	29,864	103·7
19	Tanjore ...	3,710	604·8	1,065,791	1,178,158	2,243,949	77,078	34·3	28,647	29,383	58,030	97·5
20	Tinnevelly ...	5,389	382·1	1,001,578	1,057,625	2,059,203	70,543	34·3	24,584	24,522	49,106	100·3
21	Trichinopoly ...	3,632	397·5	699,274	744,421	1,443,695	48,640	33·7	17,726	17,440	35,166	101·6
22	Vizagapatam ...	4,690	452·4	1,016,471	1,064,757	2,081,228	61,587	29·6	18,939	18,747	37,686	101·0
	Grand total for the Presidency.	129,239	288·7	18,385,627	18,929,984	37,315,611	1,165,080	31·2	419,275	407,388	826,663	102·9
	Total of Town circles in the Presidency.	...	...	2,031,013	2,106,964	4,137,977	129,897	31·4	57,668	55,219	112,887	104·4
	Total of Rural circles in the Presidency.	...	...	16,354,614	16,823,020	33,177,634	1,035,183	31·2	361,607	352,169	713,776	102·7

1	2	9											10		
		Ratio of deaths per 1,000 of population from											Mean ratio of deaths per 1,000 during previous five years.		
										All causes.					
Serial number.	Districts.	Cholera.	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Injuries.	All other causes.	Males.	Females.	Total.	Males.	Females.	Total.
1	Anantapur	...	0·2	0·9	2·1	1·2	0·5	0·5	16·4	21·6	22·1	21·8	19·8	19·6	19·7
2	Bellary	0·001	0·8	0·2	2·7	2·0	0·4	0·4	16·7	29·5	28·8	29·2	25·7	24·9	25·3
3	Chingleput	0·1	0·3	0·01	4·9	2·7	0·4	0·4	16·6	25·7	25·1	25·4	26·7	25·8	26·3
4	Coimbatore	0·4	0·2	0·5	7·5	1·9	0·4	0·4	11·1	23·0	21·9	22·4	19·4	17·8	18·6
5	Cuddapah	0·01	0·7	0·002	15·8	0·6	0·2	0·5	3·6	21·4	21·4	21·4	20·7	19·9	20·3
6	Ganjám	0·4	0·2	...	11·2	1·0	0·1	0·1	1·6	15·5	13·8	14·6	17·4	14·8	16·1
7	Gódávari	0·05	0·6	0·01	9·3	0·7	0·2	0·3	8·2	20·3	18·3	19·3	21·6	19·9	20·8
8	Kistna	0·01	0·2	..	12·2	0·7	0·4	0·3	8·5	22·5	22·1	22·3	23·1	22·5	22·8
9	Kurnool	...	0·4	0·6	13·0	0·8	0·2	0·4	6·5	22·3	21·5	21·9	20·6	19·5	20·0
10	Madras	0·05	0·01	0·01	12·3	5·3	1·9	0·4	18·0	38·7	37·2	37·9	45·7	45·7	45·7
11	Madura	1·6	0·3	0·002	5·2	0·6	0·1	0·4	7·9	17·3	15·0	16·1	17·5	15·2	16·3
12	Malabar	2·2	0·3	0·002	8·7	2·8	0·9	0·3	8·7	24·8	23·1	23·9	19·5	17·0	18·2
13	Nellore	0·3	0·6	...	10·0	0·5	0·1	0·3	7·9	19·9	19·4	19·7	19·7	18·6	19·2
14	Nilgiris	...	0·3	5·6	10·9	3·3	1·2	0·3	7·0	28·0	29·4	28·6	25·9	27·5	26·6
15	North Arcot	0·03	1·1	0·4	5·6	1·8	0·3	0·5	8·8	18·6	18·4	18·5	20·1	19·3	19·7
16	Salem	1·8	0·3	1·4	8·6	1·6	0·4	0·5	12·8	27·9	26·8	27·4	22·3	20·9	21·6
17	South Arcot	0·9	0·8	0·0004	7·4	0·9	0·2	0·4	13·2	24·4	23·2	23·8	23·6	22·5	23·0
18	South Canara	0·02	0·5	0·3	10·8	2·6	0·4	0·7	11·1	27·8	25·1	26·4	26·4	23·7	25·0
19	Tanjore	1·7	0·2	0·001	4·4	0·9	0·4	0·4	17·9	26·9	24·9	25·9	27·4	25·3	26·3
20	Tinnevelly	0·7	0·3	0·001	6·0	1·1	0·4	0·4	14·9	24·5	23·2	23·8	24·7	22·8	23·7
21	Trichinopoly	2·1	0·03	...	6·4	0·7	0·3	0·4	14·5	25·3	23·4	24·4	22·7	21·3	22·0
22	Vizagapatam	0·02	0·03	...	15·5	0·6	0·2	0·2	1·6	18·6	17·6	18·1	18·3	16·7	17·5
	Grand total for the Presidency.	0·7	0·4	0·4	8·4	1·3	0·4	0·4	10·2	22·8	21·5	22·2	22·0	20·4	21·2
	Total of Town circles in the Presidency.	0·9	0·1	1·3	5·9	3·1	1·1	0·4	14·5	28·4	26·2	27·3	31·6	29·4	30·5
	Total of Rural circles in the Presidency.	0·7	0·4	0·2	8·8	1·1	0·3	0·4	9·6	22·1	20·9	21·5	21·1	19·6	20·4

NOTE.—The born-dead cases are not included in this or any of the other statements.

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No. III.—*Deaths registered in the districts of the Madras Presidency during each month of the year 1903.*

1	2	3												4
Number.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths registered during the year.
1	Anantapur	1,212	1,025	1,056	1,303	1,246	1,312	1,548	1,514	1,534	1,577	1,808	2,042	17,177
2	Bellary	3,330	2,156	1,850	1,526	1,338	1,735	2,007	2,186	2,080	2,648	3,025	4,054	27,933
3	Chingleput	3,137	2,612	2,814	2,283	2,397	2,523	2,900	2,703	2,631	2,831	3,163	3,301	33,295
4	Coimbatore	4,469	3,479	3,363	3,110	3,471	4,096	4,206	3,944	4,140	4,275	4,519	6,330	49,402
5	Cuddapah	2,071	1,641	2,000	2,201	2,117	2,152	2,353	2,388	2,270	2,510	2,801	3,134	27,618
6	Ganjám	1,747	1,567	1,586	1,928	2,261	2,448	3,121	3,473	2,970	2,560	2,609	3,139	29,409
7	Gódávari	2,934	2,847	2,849	2,966	2,802	3,429	4,103	4,715	4,165	4,526	4,320	4,658	44,314
8	Kistna	2,662	2,064	2,902	1,645	3,016	3,542	3,812	4,740	5,129	5,590	6,157	6,807	48,075
9	Kurnool	1,515	1,306	1,266	1,272	1,373	1,551	1,579	1,717	1,632	1,787	1,937	2,161	19,096
10	Madras	1,575	1,410	1,636	1,456	1,484	1,450	1,490	1,508	1,557	1,592	1,768	1,794	18,720
11	Madura	3,787	3,077	3,350	3,298	3,136	4,477	4,755	3,801	3,836	3,895	3,767	4,368	45,547
12	Malabar	4,526	4,660	5,335	5,325	6,294	7,147	9,043	6,805	4,874	4,260	4,045	4,389	66,703
13	Nellore	2,480	2,491	2,143	2,136	2,246	2,255	2,109	2,301	2,357	2,580	2,961	3,384	29,443
14	Nilgiris	128	161	209	210	309	334	379	302	232	284	291	242	3,081
15	North Arcot	3,735	3,268	3,570	3,077	2,822	2,663	2,900	3,095	3,102	3,507	4,269	4,813	40,341
16	Salem	5,598	4,564	4,833	3,773	4,007	4,803	5,047	4,841	4,442	5,128	5,897	7,910	60,343
17	South Arcot	4,890	4,853	4,559	3,840	4,029	4,165	4,572	4,891	4,481	4,411	5,017	6,106	55,814
18	South Canara	2,449	2,285	2,182	1,971	1,901	2,395	3,601	2,075	2,606	2,333	2,146	3,020	29,864
19	Tanjore	4,794	4,121	4,132	3,733	4,341	4,132	4,559	4,729	4,716	5,150	5,202	8,450	58,030
20	Tinnevelly	7,548	4,633	4,132	3,288	3,268	3,362	3,283	3,329	3,357	3,656	3,975	5,325	49,106
21	Trichinopoly	2,975	2,342	2,224	2,521	2,934	2,650	2,935	2,907	2,686	2,631	3,120	5,241	35,166
22	Vizagapatam	2,914	2,421	2,278	2,198	2,387	2,795	2,566	3,581	4,173	4,134	3,748	4,491	37,686
	Total, Madras Presidency ...	70,496	58,983	59,769	55,010	59,177	65,386	72,839	72,454	68,970	71,865	76,545	96,159	826,663
	Ratio of deaths per 1,000 in each month ...	1·9	1·6	1·6	1·5	1·6	1·8	2·0	1·9	1·8	1·9	2·1	2·5	22·2

No. IV.—*Deaths registered according to age in the districts of the Madras Presidency during the year 1903.*

1	2	3		4		5		6		7		8		9		10		11		12	
		Under 1 year.		1 to 4.		5 to 9.		10 to 14.		15 to 19.		20 to 29.		30 to 39.		40 to 49.		50 to 59.		60 and upwards.	
Number.	Districts.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1	Anantapur ...	1,928	1,792	1,222	1,195	481	472	269	283	245	381	532	800	659	705	782	571	806	645	1,711	1,629
2	Bellary ...	2,681	2,643	1,814	1,844	927	1,007	841	756	675	605	1,308	1,398	1,399	1,181	1,284	915	1,206	927	1,925	2,167
3	Chingleput ...	5,813	5,009	2,072	2,162	879	819	488	427	417	588	821	1,301	1,069	1,048	1,263	1,035	1,301	1,162	2,764	2,772
4	Coimbatore ...	6,662	5,858	3,040	3,035	1,347	1,256	972	844	837	917	1,691	2,229	2,024	2,043	2,230	1,850	2,297	2,212	3,760	4,280
5	Cuddapah ...	3,360	2,805	1,805	1,716	826	811	443	429	351	589	815	1,356	1,221	1,268	1,401	1,107	1,671	1,434	2,083	2,067
6	Ganjám ...	4,779	3,990	1,014	1,771	759	748	535	502	559	725	985	1,160	1,042	936	1,160	905	1,308	1,384	1,903	2,335
7	Gódávari ...	5,578	4,826	3,520	3,465	1,597	1,451	984	898	1,132	1,256	1,001	1,931	1,770	1,442	1,734	1,182	1,613	1,329	3,118	3,589
8	Kistna ...	7,853	6,671	3,582	3,402	1,363	1,463	731	766	771	1,060	1,645	2,185	1,400	1,414	1,557	1,138	1,720	1,251	3,889	4,064
9	Kurnool ...	2,473	2,182	1,490	1,464	629	666	312	283	291	318	576	787	816	765	996	620	922	730	1,319	1,457
10	Madras ...	2,971	2,599	1,204	1,214	381	382	295	249	253	324	680	773	714	676	773	533	718	540	1,629	1,872
11	Madura ...	4,937	4,287	2,908	2,061	1,305	1,242	993	803	882	862	2,058	2,107	2,273	1,911	2,288	1,805	2,290	2,038	3,455	4,052
12	Malabar ...	6,780	5,672	5,548	5,585	2,382	2,341	1,372	1,217	1,118	1,266	2,832	3,385	3,533	3,448	3,164	2,277	2,767	2,046	4,601	5,384
13	Nellore ...	3,520	2,985	1,879	1,894	1,066	1,128	799	788	690	763	858	1,304	916	953	1,096	947	1,402	1,106	2,707	2,942
14	Nilgiris ...	362	304	241	273	99	96	72	62	83	58	199	183	190	145	158	96	83	82	149	150
15	North Arcot ...	5,464	4,869	2,533	2,544	1,117	1,108	681	769	593	894	1,113	1,631	1,426	1,472	1,753	1,380	1,061	1,722	3,806	4,003
16	Salem ...	8,325	7,229	3,836	4,080	2,041	2,048	1,401	1,272	1,033	1,264	1,983	2,722	2,458	2,296	2,568	2,101	2,488	2,406	4,168	4,624
17	South Arcot ...	8,232	7,273	4,915	4,939	1,491	1,501	899	743	694	1,005	1,523	2,125	1,748	1,940	2,310	1,700	2,459	2,054	4,177	4,086
18	South Canara ...	3,803	3,273	1,755	1,860	691	713	411	409	476	585	1,284	1,626	1,478	1,293	1,602	1,120	1,524	1,250	2,179	2,621
19	Tanjore ...	8,655	7,345	3,257	3,142	1,206	1,197	888	719	765	1,304	1,864	2,061	3,087	2,233	2,218	1,873	2,447	2,307	5,220	6,302
20	Tinnevelly ...	6,836	6,178	4,073	4,273	1,147	1,074	660	663	593	784	1,462	1,784	1,089	1,560	2,062	1,516	2,176	1,351	3,947	4,833
21	Trichinopoly ...	4,927	4,179	2,486	2,433	927	880	657	526	524	683	1,115	1,537	1,210	1,269	1,328	1,106	1,497	1,415	3,061	3,412
22	Vizagapatam ...	4,631	4,157	2,970	2,783	1,214	1,070	755	657	669	775	1,358	1,564	1,483	4,482	1,634	1,349	1,661	1,671	2,564	3,230
	Total, Madras Presidency ...	110,870	91,080	58,064	58,125	24,055	23,473	15,403	14,063	13,651	17,096	28,599	36,458	32,665	31,471	35,375	27,102	36,466	31,568	64,127	71,869
	* Ratio per mille of population ...	203·5	169·6	30·1	28·6	9·1	8·8	6·4	6·5	9·0	12·0	10·6	11·5	12·6	[illegible]	18·4	14·4	30·0	25·8	66·6	63·4

* Calculated on the total population as per census of 1901 including Europeans and Eurasians, though the statistics are exclusive of Europeans and Eurasians and born dead.

No. V.—*Deaths registered according to Classes in the districts of the Madras Presidency during the year 1903.*

1	2	3					4					5				
		Population for which returns were received.					Number of deaths registered.					Ratio of deaths per 1,000 of population.				
Number.	Districts.	Native Christians.	Muhammadans.	Hindus.	Other classes.	Total.	Native Christians.	Muhammadans.	Hindus.	Other classes.	Total.	Native Christians.	Muhammadans.	Hindus.	Other classes.	Total
1	Anantapur ...	2,473	68,917	718,301	8,391	787,752	41	1,072	16,042	22	17,177	18·9	18·2	22·3	2·7	21·8
2	Bellary ...	3,756	97,474	851,056	1,781	957,067	61	3,071	24,596	205	27,933	16·2	31·5	28·8	115·1	29·2
3	Chingleput ...	23,714	30,010	1,255,257	389	1,309,370	375	656	32,246	18	33,295	15·8	21·9	25·7	46·3	25·4
4	Coimbatore ...	17,808	50,745	2,126,068	6,052	2,200,673	457	1,250	47,633	22	49,402	25·7	25·4	22·4	3·6	22·4
5	Cuddapah ...	18,781	129,537	1,142,454	353	1,291,125	266	2,316	24,875	161	27,618	14·2	17·9	21·8	456·1	21·4
6	Ganjam ...	3,042	5,940	1,723,581	277,377	2,009,949	18	135	29,208	48	29,400	5·9	22·7	16·9	0·2	14·6
7	Godávari ...	15,836	43,481	2,236,983	5,200	2,300,800	297	823	43,096	98	44,314	18·8	18·9	19·3	18·8	19·3
8	Kistna ...	100,841	132,053	1,912,914	8,122	2,154,230	1,784	2,880	43,308	4	48,075	17·7	21·0	22·7	0·5	22·3
9	Kurnool ...	33,886	107,626	728,782	1,604	871,948	621	2,208	16,176	91	19,096	18·3	20·5	22·2	56·7	21·9
10	Madras ...	25,292	57,331	410,648	409	493,680	824	2,308	15,586	2	18,720	32·6	40·3	38·0	4·9	37·9
11	Madura ...	171,201	168,618	2,550,783	42	2,830,644	1,187	3,393	40,967	10	45,547	16·7	20·1	16·1	238·1	16·1
12	Malabar ...	46,519	832,970	1,904,174	1,344	2,785,307	1,282	21,831	43,537	53	66,703	27·6	26·2	22·9	39·4	23·9
13	Nellore ...	53,471	82,886	1,356,246	3,907	1,396,510	495	1,320	27,628	...	29,443	9·3	15·9	20·4	...	19·7
14	Nilgiris ...	11,081	5,867	89,668	4,057	107,673	328	241	2,184	328	3,081	29·6	41·1	25·2	80·8	28·6
15	North Arcot ...	22,069	103,038	2,068,386	13,324	2,206,817	149	1,876	38,651	105	40,841	6·8	18·2	18·7	12·4	18·5
16	Salem ...	18,701	68,497	2,116,768	67	2,204,033	500	3,314	56,529	...	60,343	26·7	48·4	26·7	...	27·4
17	South Arcot ...	65,748	64,076	2,212,548	5,905	2,349,177	1,090	1,311	53,290	150	55,841	16·1	20·2	24·1	25·4	23·8
18	South Canara ...	83,779	122,261	911,147	9,594	1,130,781	1,908	2,853	21,835	208	29,844	22·8	23·1	27·2	27·0	26·4
19	Tanjore ...	85,899	123,053	2,044,399	598	2,243,940	2,218	3,218	52,587	7	58,030	25·8	20·2	25·8	11·7	25·9
20	Tinnevelly ...	158,909	101,875	1,798,519	...	2,059,203	3,374	2,658	43,074	...	49,106	21·2	26·1	23·9	...	23·8
21	Trichinopoly ...	75,585	43,319	1,321,768	23	1,443,695	1,784	1,067	32,278	...	35,166	23·0	25·2	24·4	...	24·4
22	Vizagapatam ...	2,757	22,476	2,005,926	50,069	2,181,228	47	278	37,298	63	37,686	17·0	12·4	18·6	1·3	18·1
	Total, Madras Presidency.	980,738	2,453,959	33,482,036	398,818	37,315,611	19,073	60,071	745,804	1,715	826,663	19·4	24·5	22·3	4·3	22·2

No. VI.—*Births and Deaths registered from different causes in the districts and towns of the Madras Presidency during the year 1903.*

1	2	3	4		5	6	7	8	9	10	11					12	13	14									
			Births.								Injuries.							Ratio of deaths per 1,000 of population.								From all causes.	
											Suicides.																
Number.	Districts and towns.	Population for which returns were received.	Total number.	Birth-rate per mille of population.	Cholera.	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Males.	Females.	Wounds and accidents.	Snake-bite and killed by wild beasts.	Total.	All other causes.	Total deaths from all causes.	Cholera.	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Injuries.	All other causes.	For the year.	Mean of previous 5 years.
	*A.—Districts.**																										
1	Anantapur ...	673,322	21,114	31·3	...	169	591	1,382	806	357	13	34	249	51	347	11,738	15,390	...	0·3	0·9	2·0	1·2	0·5	0·5	17·4	22·8	19·8
2	Bellary ...	810,419	26,568	32·8	1	715	4,205	2,327	1,511	351	30	28	246	61	365	13,687	23,270	0·001	0·9	5·3	2·9	1·9	0·4	0·5	16·8	28·7	24·2
3	Chingleput ...	1,113,948	46,031	41·1	65	317	7	5,505	2,877	359	22	16	349	115	502	19,022	28,654	0·1	0·3	0·01	4·9	2·6	0·3	0·4	17·0	25·6	28·1
4	Coimbatore ...	2,041,007	63,691	31·2	646	484	587	15,939	3,322	629	52	62	585	168	867	22,408	45,082	0·3	0·3	0·3	7·8	1·7	0·3	0·4	11·0	22·1	18·2
5	Cuddapah ...	1,172,286	34,126	29·1	13	892	1	19,740	694	131	32	45	446	70	593	4,079	26,183	0·01	0·8	0·001	16·8	0·6	0·3	0·5	3·4	22·3	20·2
6	Ganjam ...	1,916,815	46,520	24·3	780	378	...	21,923	1,540	80	7	21	177	54	259	2,286	27,246	0·4	0·2	...	11·5	0·8	0·04	0·1	1·2	14·2	15·7
7	Godávari ...	2,109,500	58,542	27·8	104	1,290	21	20,279	1,275	312	37	37	346	111	531	16,070	39,882	0·05	0·6	0·01	9·6	0·6	0·1	0·3	7·7	18·9	20·5
8	Kistna ...	1,968,814	66,405	33·7	14	479	...	24,703	1,052	690	38	52	366	109	560	15,397	42,904	0·01	0·2	...	12·6	0·5	0·4	0·3	7·8	21·8	22·4
9	Kurnool ...	824,935	25,556	31·0	...	371	486	10,971	589	17	39	42	205	45	331	6,042	17,801	...	0·4	0·6	13·3	0·7	0·01	0·4	0·2	21·6	19·6
10	Madura ...	2,488,729	56,231	22·6	3,045	940	2	12,943	1,018	151	46	75	597	276	994	18,290	37,893	1·4	0·4	0·001	5·2	0·4	0·1	0·4	7·5	15·2	15·6
11	Malabar ...	2,567,400	85,361	33·2	5,851	877	1	22,836	6,887	2,108	59	25	491	185	760	20,707	60,027	2·3	0·3	0·0004	8·9	2·7	0·8	0·3	8·1	23·4	17·3
12	Nellore ...	1,374,938	40,788	29·7	261	911	...	14,035	596	143	17	34	359	60	470	10,695	27,111	0·2	0·7	...	10·2	0·4	0·1	0·3	7·8	19·7	19·6
13	Nilgiris ...	80,552	2,376	29·5	...	31	234	1,109	222	14	...	1	16	3	20	370	2,030	...	0·4	2·9	13·8	2·8	0·5	0·2	4·6	25·2	26·0
14	North Arcot ...	2,037,263	59,178	29·0	44	2,416	407	11,956	3,190	610	49	75	717	147	988	16,944	36,457	0·02	1·2	0·2	5·8	1·6	0·3	0·5	8·3	17·9	19·2
15	Salem ...	2,027,067	68,914	34·0	3,256	726	690	17,989	3,035	620	52	75	637	228	992	25,072	52,680	1·6	0·4	0·5	8·9	1·5	0·3	0·5	12·3	26·0	21·0
16	South Arcot ...	2,177,242	75,084	34·5	1,872	1,794	...	16,722	1,478	270	45	42	645	279	1,011	28,431	51,678	0·9	0·8	...	7·7	0·7	0·1	0·5	13·0	23·7	22·8
17	South Canara ...	1,078,632	36,833	34·2	18	669	88	12,078	2,711	333	35	43	576	83	747	11,656	28,200	0·02	0·5	0·1	11·2	2·5	0·3	0·7	10·8	26·1	24·8
18	Tanjore ...	1,891,508	65,904	34·8	3,408	494	...	8,262	1,262	485	23	19	472	203	717	33,304	47,982	1·8	0·3	...	4·4	0·7	0·2	0·4	17·6	25·4	25·9
19	Tinnevelly ...	1,636,447	56,315	34·4	1,114	674	1	10,233	921	303	33	69	401	212	715	24,027	38,578	0·7	0·4	0·001	6·3	0·6	0·2	0·4	15·0	23·6	23·5
20	Trichinopoly ...	1,238,142	44,080	34·2	2,504	29	...	8,304	642	280	24	34	338	162	555	18,536	31,266	1·9	0·02	...	6·7	0·5	0·2	0·4	14·5	24·2	21·5
21	Vizagapatam ...	1,887,370	55,578	29·4	43	58	...	30,736	969	145	30	27	253	68	378	1,559	33,429	0·03	0·03	...	16·3	0·8	0·1	0·2	0·8	17·7	17·1
	Total, Rural districts ...	33,177,634	1,035,183	31·2	23,746	14,561	7,711	290,445	36,370	8,411	685	856	8,471	2,699	12,702	319,890	713,776	0·7	0·4	0·2	8·8	1·1	0·3	0·4	9·6	21·5	20·4

* Exclusive of B—Towns.

No. VI.—*Births and Deaths registered from different causes in the Districts and Towns of the Madras Presidency during the year 1903.*

1	2	3	4		5	6	7	8	9	10	11					12	13	14									
			Births.								Injuries.							Ratio of deaths per 1,000 of population.								From all causes.	
											Suicides.																
Number.	Districts and towns.	Population for which returns were received.	Total number.	Birth-rate per mille of population.	Cholera.	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Males.	Females.	Wounds and accidents.	Snake-bite and killed by wild beasts.	Total.	All other causes.	Total deaths from all causes.	Cholera.	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Injuries.	All other causes.	For the year.	Mean of previous 5 years.
	B.—Towns.																										
	Anantapur—																										
1	M.T.C. Anantapur ...	7,658	288	36·3	...	...	4	23	37	20	...	...	6	1	7	116	212	...	...	0·5	3·5	4·7	2·5	0·9	14·6	26·7	21·2
2	T.C. Hindupur ...	19,575	394	20·1	...	...	11	63	28	...	...	...	4	1	5	167	264	...	...	0·6	3·2	1·4	...	0·3	8·0	13·5	*
3	T.C. Tadpatri ...	10,859	377	34·7	...	...	...	31	19	...	...	...	1	...	1	222	273	...	...	...	2·9	1·7	...	0·1	20·4	25·1	18·7
4	T.C. Madakasira ...	10,466	179	16·8	...	2	...	17	7	...	...	...	...	...	...	64	90	...	0·2	...	1·6	0·6	...	...	6·0	8·4	*
5	T.C. Dharmavaram ...	10,658	128	12·0	...	...	...	7	...	...	...	1	...	...	1	48	56	...	...	...	0·7	...	...	0·1	4·5	5·3	*
6	T.C. Pamidi ...	10,657	281	26·4	...	...	1	6	5	33	...	...	...	...	...	120	165	...	...	0·1	0·5	0·5	3·1	...	11·2	15·5	*
7	T.C. Gooty ...	9,682	265	27·4	...	...	2	16	7	...	...	...	2	...	2	134	161	...	...	0·2	1·7	0·7	...	0·2	13·8	16·6	*
8	T.C. Uravakonda ...	9,385	153	16·3	...	...	67	37	9	16	1	1	2	...	1	82	215	...	...	7·1	3·9	1·0	1·7	0·4	8·8	22·0	*
9	T.C. Kalyandrug ...	6,815	184	20·0	...	...	...	20	...	...	...	...	4	...	4	94	118	...	...	...	2·3	...	...	0·5	10·6	15·1	*
10	T.C. Yadiki* ...	7,359	195	26·4	...	...	...	2	3	...	...	...	3	...	5	119	127	...	...	...	0·3	0·4	...	0·7	16·1	17·2	*
11	T.C. Penukonda ...	6,896	146	21·3	...	...	1	26	1	7	...	...	2	...	2	69	106	...	...	0·1	3·8	0·1	1·1	0·3	10·2	15·6	*
	Bellary—																										
12	M.T.C. Bellary ...	58,247	1,522	26·1	...	7	719	130	224	53	1	...	12	...	13	1,056	2,202	...	0·1	12·3	2·2	3·9	0·9	0·2	18·2	37·8	38·2
13	M.T.C. Adoni ...	30,416	891	29·3	...	4	49	38	77	2	2	...	5	...	7	526	703	...	0·1	1·6	1·3	2·5	0·1	0·2	17·3	23·1	30·3
14	T.C. Hospet ...	18,482	364	19·7	...	7	459	19	47	...	1	1	1	1	4	233	799	...	0·4	26·5	1·0	2·5	...	0·2	12·6	43·2	25·8
15	T.C. Yemmiganuru ...	13,800	136	9·8	...	...	54	3	18	16	1	...	1	...	2	126	219	...	...	3·9	0·2	1·3	1·2	0·1	9·1	15·8	*
16	T.C. Rayadrug ...	10,488	132	12·6	...	5	216	7	7	1	...	...	1	...	1	82	319	...	0·4	20·6	0·7	0·7	0·1	0·1	7·8	30·4	18·9
17	T.C. Harpanahalli ...	9,320	303	32·5	...	...	24	46	11	...	...	...	1	...	1	138	220	...	...	2·6	4·9	1·2	...	0·1	14·8	23·6	*
18	T.C. Siruguppa ...	5,805	108	18·6	...	2	50	28	24	5	...	...	6	...	6	77	192	...	0·4	8·6	4·8	4·1	0·9	1·0	13·3	33·1	*
	Chingleput—																										
19	M.T.C. Conjeeveram ...	46,164	1,547	33·5	...	10	2	164	279	23	...	...	12	...	12	1,005	1,495	...	0·2	0·04	3·6	6·0	0·5	0·3	21·8	32·4	31·7
20	M.T.C. Chingleput ...	10,551	434	41·1	...	...	...	28	70	...	1	...	5	3	9	178	285	...	...	...	2·7	6·6	...	0·9	16·8	27·0	31·3
21	T.C. Sembiem ...	17,567	524	29·8	...	...	1	84	79	3	...	...	10	1	11	320	489	...	...	0·1	4·8	3·9	0·2	0·6	18·2	27·8	*
22	T.C. Tiruvottiyur ...	15,919	267	16·8	...	...	...	139	112	53	1	1	4	...	6	130	440	...	...	...	8·7	7·0	3·3	0·4	8·2	27·6	*
23	T.C. St. Thomas' Mount (C) ...	15,571	158	10·1	...	1	...	38	12	5	...	1	...	...	1	55	112	...	0·1	...	2·4	0·8	0·3	0·1	3·5	7·2	10·2
24	T.C. Poonamallee (C) ...	15,323	399	26·0	...	2	1	61	34	23	...	...	2	1	3	165	289	...	0·1	0·1	4·0	2·2	1·5	0·2	10·8	18·9	*
25	T.C. Saidapet ...	11,254	412	31·0	7	...	...	102	47	9	...	...	...	...	...	186	351	0·5	...	...	7·2	3·3	0·6	...	13·6	24·6	*
26	T.C. Uttaramerur ...	10,432	283	27·1	...	2	...	28	10	...	...	...	7	...	7	137	184	...	0·2	...	2·7	1·0	...	0·6	13·1	17·6	*
27	T.C. Tiruvallur ...	9,092	224	24·6	...	3	...	50	13	2	...	...	2	1	3	141	212	...	0·3	...	5·5	1·5	0·2	0·3	15·5	23·3	*
28	T.C. Pallavaram (C) ...	6,416	106	16·5	...	...	3	11	8	2	...	...	1	...	1	54	79	...	...	0·5	1·7	1·2	0·3	0·2	8·4	12·3	*
29	T.C. Maduvantakam ...	6,266	296	47·2	42	...	...	33	21	...	...	...	...	2	2	148	246	6·7	...	...	5·3	3·4	...	0·3	23·6	39·3	*
30	T.C. Tirukkalikunram ...	5,738	144	25·1	...	...	...	16	5	...	...	...	4	...	4	58	83	...	...	...	2·8	0·9	...	0·7	10·1	14·5	*
31	T.C. Sriperumbudur ...	5,481	225	41·1	...	...	...	47	10	4	...	...	1	...	1	93	155	...	...	...	8·6	1·8	0·7	0·2	17·0	28·3	*
32	T.C. Pulicat ...	5,448	118	21·7	1	...	...	97	3	...	...	...	...	...	...	29	130	0·2	...	...	17·8	0·6	...	...	5·3	23·9	*
33	T.C. Cheyur ...	5,216	182	34·9	...	...	...	16	11	3	...	...	2	...	2	59	91	...	...	...	3·1	2·1	0·6	0·4	11·3	17·5	*
	Coimbatore—																										
34	M.T.C. Coimbatore ...	53,689	1,962	35·8	6	...	571	102	297	172	...	7	10	3	20	949	2,117	0·1	...	10·8	1·9	5·6	3·2	0·4	17·9	39·9	31·2
35	M.T.C. Erode ...	15,529	572	36·7	16	9	2	41	88	28	1	...	9	...	10	193	387	1·0	0·6	0·1	2·6	5·7	1·8	0·6	12·5	24·9	29·6
36	M.T.C. Karúr ...	12,769	578	45·3	47	3	...	78	51	25	1	...	5	3	9	224	437	3·7	0·2	...	6·1	4·0	2·0	0·7	17·5	34·2	31·8
37	T.C. Dharapuram ...	17,178	566	32·9	...	...	2	94	113	3	...	...	1	1	2	210	424	...	...	0·1	5·5	6·6	0·2	0·1	12·2	24·7	*
38	T.C. Kollegal ...	13,728	171	12·5	...	...	17	22	28	3	...	...	3	...	3	127	200	...	...	1·2	1·6	2·1	0·2	0·2	9·3	14·6	*
39	T.C. Udamalpet ...	10,503	203	19·3	...	...	...	97	14	...	...	...	2	...	2	37	150	...	...	...	9·3	1·3	...	0·2	3·5	14·3	*
40	T.C. Gobichettipálayam ...	10,227	80	7·8	1	...	...	7	...	...	...	...	...	...	...	36	44	0·1	...	...	0·7	...	...	...	3·5	4·3	*
41	T.C. Pollachi ...	8,958	256	28·6	...	...	2	51	18	24	...	...	8	1	9	71	175	...	...	0·2	5·7	2·0	2·7	1·0	7·9	19·5	*

* Being a new rural town the information is not available.

No. VI.—*Births and Deaths registered from different causes in the Districts and Towns of the Madras Presidency during the year* 1903—cont.

Number.	Districts and towns.	Population for which returns were received.	Births. Total number.	Births. Birth-rate per mille of population.	Cholera.	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Injuries. Suicides. Males.	Suicides. Females.	Injuries. Wounds and accidents.	Injuries. Snake-bite and killed by wild beasts.	Injuries. Total.	All other causes.	Total deaths from all causes.	Ratio of deaths per 1,000 of population. Cholera.	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Injuries.	All other causes.	From all causes. For the year.	From all causes. Mean of previous 5 years.
	B.—Towns—cont.																										
	Kistna—*cont.*																										
81	T.C. Narasaraopet	7,103	288	33·5	...	...	...	46	21	2	...	1	2	...	3	106	178	...	...	...	6·5	2·9	0·3	0·4	14·9	25·0	•
82	T.C. Gudivada	6,719	237	35·3	...	...	...	53	5	...	...	...	...	1	1	109	168	...	...	...	7·9	0·7	...	0·2	16·2	25·0	•
	Kurnool—																										
83	M.T.C. Kurnool	25,376	1,038	40·9	...	1	4	185	114	118	...	...	17	...	17	307	748	...	0·04	0·2	7·3	4·5	4·7	0·7	12·0	29·4	28·6
84	M.T.C. Nandyal	15,137	511	33·8	...	...	1	182	22	48	...	...	...	1	1	162	416	...	...	0·1	12·0	1·4	3·2	0·1	10·7	27·5	26·9
85	T.C. Cumbum	6,502	172	26·5	...	17	...	22	9	...	...	...	...	1	1	84	133	...	2·6	...	3·4	1·4	...	0·2	12·9	20·6	•
86	M.T.C. Madras	493,680	19,276	39·0	24	7	4	6,052	2,615	914	22	13	155	2	193	8,912	18,720	0·05	0·01	0·01	12·3	5·3	1·9	0·4	18·0	37·9	45·7
	Madura—																										
87	M.T.C. Madura	105,984	3,254	30·5	136	2	...	336	407	199	1	2	20	2	25	1,445	2,660	1·3	0·02	...	3·1	3·6	1·9	0·2	13·7	25·1	25·5
88	M.T.C. Dindigul	25,182	989	39·9	1	...	1	118	138	4	...	1	4	...	5	375	642	0·04	...	0·04	4·7	5·5	0·2	0·2	14·9	25·5	18·8
89	M.T.C. Periyakulam	17,960	750	41·8	89	...	...	114	135	98	...	...	1	2	3	134	573	5·0	...	...	6·3	7·5	5·5	0·2	7·4	31·9	32·8
90	M.T.C. Palni	17,188	654	38·1	1	...	2	74	40	...	...	...	...	...	5	286	408	0·1	...	0·1	4·3	2·3	...	0·3	16·7	23·8	24·5
91	M.T.C. Kodaikánal	1,913	70	36·6	...	...	...	2	2	...	...	...	...	...	...	27	31	...	...	...	1·0	1·0	...	...	14·2	16·2	•
92	T.C. Aruppukottai	23,633	667	28·2	14	...	...	198	...	...	6	3	4	...	13	187	412	0·6	...	...	8·4	...	...	0·5	7·9	17·4	10·4
93	T.C. Bodinayakkanur	22,269	457	19·7	102	...	...	267	...	...	...	1	...	5	6	32	407	4·6	...	...	12·0	...	...	0·3	1·4	18·3	•
94	T.C. Paramagudi	16,184	373	23·1	20	...	...	101	...	...	...	...	3	...	3	125	249	1·2	...	...	6·3	...	...	0·2	7·7	15·4	11·8
95	T.C. Ramnad	14,546	398	27·4	143	...	...	77	1	...	...	...	5	...	5	250	476	9·8	...	...	5·3	0·1	...	0·3	17·2	32·7	24·2
96	T.C. Karaikudi	11,501	149	11·9	8	...	...	6	7	...	1	3	3	...	7	128	156	0·7	...	...	0·3	0·6	...	0·6	10·8	13·2	•
97	T.C. Kilakarai	11,078	237	20·5	6	...	...	126	...	...	...	...	2	1	3	59	194	0·5	...	...	11·4	...	...	0·3	5·3	17·5	18·5
98	T.C. Melur	10,100	217	21·5	35	...	...	30	10	...	1	...	3	...	4	186	265	3·4	...	...	3·0	1·0	...	0·4	18·4	26·2	•
99	T.C. Uttamapalaiyam	10,009	324	32·4	14	...	...	71	...	...	...	...	3	1	4	95	184	1·4	...	...	7·1	...	...	0·4	9·5	18·4	•
100	T.C. Devakkottai	9,503	161	16·9	99	...	...	17	9	...	...	...	2	...	2	95	222	10·4	...	...	1·8	1·0	...	0·2	10·0	28·4	•
101	T.C. Sivaganga	9,097	311	34·2	10	...	...	57	2	1	1	...	1	...	2	168	240	1·1	...	...	6·3	0·2	0·1	0·2	18·5	26·4	•
102	T.C. Tirumangalam	8,804	188	17·8	...	...	...	17	2	...	...	...	1	...	1	41	61	...	...	...	1·9	0·3	...	0·1	4·6	6·9	•
103	T.C. Abiramam	7,338	174	23·7	41	5	...	6	...	...	...	1	...	...	1	86	139	5·6	0·7	...	0·8	...	...	0·1	11·7	18·9	•
104	T.C. Kamandi	6,854	115	16·8	9	...	...	81	1	...	...	...	1	...	1	7	49	1·3	...	...	4·6	0·1	...	0·1	1·0	7·1	•
105	T.C. Rameswaram	6,052	84	14·2	18	...	...	25	13	...	...	...	...	...	...	98	154	2·7	...	...	3·8	1·9	...	...	14·8	23·2	•
106	T.C. Tiruppattur	5,881	175	29·8	81	...	...	18	9	...	...	...	1	1	2	72	132	5·5	...	...	3·1	1·5	...	0·3	12·2	22·4	•
	Malabar—																										
107	M.T.C. Tellicherry	27,883	1,074	38·4	...	11	...	197	95	103	...	...	7	...	7	337	750	...	0·4	...	7·1	3·4	3·7	0·3	12·0	26·9	25·5
108	M.T.C. Calicut	76,981	2,961	37·2	109	17	...	493	309	152	...	1	9	1	11	1,471	2,571	1·4	0·2	0·1	6·5	4·0	2·0	0·1	10·1	33·4	32·0
109	M.T.C. Palghat	34,177	1,389	42·8	...	4	...	357	258	...	1	...	8	3	12	823	1,454	...	0·1	...	8·1	5·8	...	0·3	18·6	32·9	34·8
110	M.T.C. Cochin	19,274	592	30·7	95	10	...	114	149	...	...	...	3	...	3	331	702	4·9	0·5	...	5·9	7·7	...	0·2	17·2	30·4	34·9
111	M.T.C. Cannanore	27,811	1,231	45·9	...	31	...	181	77	...	...	...	3	...	3	338	681	...	1·1	...	6·5	2·6	2·0	0·1	12·2	24·5	25·0
112	T.C. Badagara	11,319	393	34·9	...	2	...	46	41	51	1	...	5	...	6	109	235	...	0·2	...	4·1	3·6	2·8	0·5	9·6	20·8	•
113	T.C. Ponnani	10,562	249	23·6	103	...	...	36	23	3	...	...	4	...	4	115	283	9·6	...	...	3·4	2·2	0·3	0·4	10·9	26·8	•
	Nellore—																										
114	M.T.C. Nellore	32,049	969	30·2	62	2	...	239	45	12	...	...	12	3	15	508	883	1·9	0·1	...	7·5	1·4	0·4	0·5	15·8	27·6	27·5
115	M.T.C. Ongole	12,864	491	38·2	...	3	...	104	45	8	...	...	5	1	6	172	338	...	0·2	...	8·1	3·5	0·6	0·5	13·4	28·3	28·6
116	T.C. Gudur	17,251	198	11·5	60	1	...	57	5	...	1	...	3	...	4	49	176	3·5	0·1	...	3·3	0·3	...	0·2	2·8	10·2	•
117	T.C. Venkatagiri	13,302	311	23·4	...	...	...	74	3	...	...	1	4	...	5	105	187	...	...	...	5·6	0·2	...	0·4	7·9	14·1	•

* Being a new rural town the information is not available.

No. VI.—*Births and Deaths registered from different causes in the Districts and Towns of the Madras Presidency during the year 1903—cont.*

Number. (1)	Districts and towns. (2)	Population for which returns were received. (3)	Births. Total number. (4)	Births. Birth-rate per mille of population. (4)	Cholera. (5)	Small-pox. (6)	Plague. (7)	Fevers. (8)	Dysentery and diarrhœa. (9)	Respiratory diseases. (10)	Injuries. Suicides. Males. (11)	Injuries. Suicides. Females. (11)	Injuries. Wounds and accidents. (11)	Injuries. Snake-bite and killed by wild beasts. (11)	Injuries. Total. (11)	All other causes. (12)	Total deaths from all causes. (13)	Ratio per 1,000: Cholera. (14)	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Injuries.	All other causes.	From all causes. For the year.	From all causes. Mean of previous 5 years.
	B.—Towns—cont.																										
	Nellore—*cont.*																										
118	T.C. Kandukur	9,569	195	20·4	...	1	...	97	...	...	...	...	1	...	1	11	110	...	0·1	...	10·1	...	...	0·1	1·2	11·5	*
119	T.C. Kavali	8,636	170	19·7	2	2	...	16	5	...	...	...	4	1	5	56	86	0·2	0·2	...	1·9	0·6	...	0·6	6·5	10·0	*
120	T.C. Alluru-Kottapatnam. *	7,620	161	21·1	...	2	...	122	6	...	...	...	...	...		21	151	...	0·3	...	16·0	0·8	...	...	2·7	19·8	*
121	T.C. Alluru	7,527	256	34·0	5	2	...	37	4	...	...	...	2	...	2	104	154	0·7	0·3	...	4·9	0·5	...	0·3	13·8	20·5	*
122	T.C. Adanki	7,230	233	32·2	...	1	...	82	4	...	...	...	3	...	3	36	126	...	0·1	...	11·3	0·6	...	0·4	5·0	17·4	*
123	T.C. Kanigiri	5,528	127	23·0	...	...	...	120	...	...	...	...	1	...	1	...	121	...	...	...	21·7	...	...	0·2	...	21·9	*
	Nilgiris—																										
124	M.T.C. Ootacamund ...	18,596	637	34·3	...	...	246	35	73	78	1	...	7	...	8	230	670	...	...	13·2	1·9	3·9	4·2	0·4	12·4	36·0	29·0
125	M.T.C. Coonoor	8,525	269	31·6	...	...	121	27	63	4	...	...	6	...	6	160	381	...	...	14·2	3·2	7·4	0·5	0·7	18·7	44·7	29·7
	North Arcot—																										
126	M.T.C. Vellore	43,537	1,144	26·3	27	16	450	45	285	97	...	2	22	...	24	505	1,449	0·6	0·4	10·3	1·0	6·6	2·2	0·6	11·6	33·3	25·7
127	M.T.C. Walajapet ...	10,067	391	38·8	...	...	4	5	3	...	...	...	1	...	1	252	270	...	...	0·4	0·5	0·8	...	0·1	25·0	26·8	36·4
128	M.T.C. Gudiyattam ...	21,335	855	40·1	...	29	...	50	153	85	1	1	17	1	20	294	631	...	1·4	...	2·3	7·2	4·0	0·9	13·8	29·6	31·5
129	M.T.C. Tirupati	15,485	425	27·4	...	1	1	99	95	...	...	...	4	2	6	271	473	...	0·1	0·1	6·3	6·1	...	0·4	17·5	30·5	32·2
130	T.C. Ambur	15,903	420	26·4	...	2	18	21	55	11	...	...	27	...	27	223	357	...	0·1	1·1	1·3	3·5	0·7	1·7	14·0	22·4	26·9
131	T.C. Kalahasti	11,992	304	25·4	...	...	1	30	3	...	1	...	3	...	4	210	248	...	...	0·1	2·5	0·3	...	0·3	17·7	20·7	21·7
132	T.C. Chittoor	10,893	363	33·3	...	...	2	19	3	...	...	1	...	...	1	185	210	...	...	0·2	1·7	0·3	...	0·1	17·0	19·3	*
133	T.C. Arcot	10,734	355	33·1	...	5	4	3	19	...	...	2	...	...	2	230	263	...	0·4	0·4	0·3	1·8	...	0·2	21·4	24·5	22·5
134	T.C. Polur	9,206	145	15·8	...	5	...	41	9	9	...	...	...	...	...	22	86	...	0·5	...	4·5	1·0	1·0	...	2·3	9·3	*
135	T.C. Ranipettai	7,607	211	27·7	...	17	...	13	15	1	...	...	2	...	2	83	131	...	2·2	...	1·7	2·0	0·1	0·3	10·9	17·2	*
136	T.C. Sholinghur	6,442	193	30·0	...	...	...	27	7	2	...	...	5	...	5	88	129	...	...	...	4·2	1·1	0·3	0·8	13·6	20·0	*
137	T.C. Punganuru	6,363	198	31·2	...	7	...	13	3	5	...	...	3	...	3	106	137	...	1·1	...	2·0	0·5	0·8	0·5	16·7	21·6	*
	Salem—																										
138	M.T.C. Salem	70,621	3,040	43·0	695	16	2	443	200	134	1	6	29	3	39	1,579	3,102	9·8	0·1	0·03	6·3	2·8	1·9	0·6	22·4	43·9	27·9
139	M.T.C. Vaniyambadi ...	12,005	603	50·2	...	2	1,365	5	61	23	...	...	126	1	127	367	1,950	...	0·2	113·7	0·4	5·1	1·9	10·6	30·5	162·4	80·1
140	M.T.C. Tiruppattur ...	18,689	583	31·2	3	5	617	20	74	47	...	...	6	...	6	281	1,053	0·2	0·3	33·0	1·1	3·9	2·5	0·3	15·0	56·3	33·4
141	T.C. Shendamangalam ...	13,584	295	21·7	7	...	...	104	8	5	...	...	2	...	2	78	204	0·5	...	...	7·6	0·7	0·4	0·1	5·7	15·0	12·2
142	T.C. Rasipuram	11,512	252	21·9	3	...	1	40	5	...	...	...	5	...	5	133	187	0·3	...	0·1	3·5	0·4	...	0·4	11·5	16·2	16·3
143	T.C. Krishnagiri	10,446	333	31·9	1	...	107	5	28	5	...	1	3	1	5	148	299	0·1	...	10·2	0·5	2·7	0·5	0·5	14·1	28·8	*
144	T.C. Atur	9,073	328	33·9	74	...	...	97	16	...	...	...	3	2	5	84	276	7·7	...	...	10·0	1·6	...	0·5	8·7	28·5	*
145	T.C. Tiruchengodu ...	8,196	128	15·6	1	...	...	65	8	...	...	1	4	1	6	51	131	0·1	...	...	7·9	1·0	...	0·7	6·3	16·0	*
146	T.C. Dharmapuri	8,102	303	37·4	1	...	1	39	11	...	[illegible]	[illegible]	5	1	6	158	216	0·1	...	0·1	4·8	1·4	...	0·5	19·5	26·7	*
147	T.C. Namakkal	6,843	115	16·8	5	...	...	50	2	...	1	[illegible]	[illegible]	1	6	25	97	0·7	...	...	8·6	0·3	...	0·9	3·7	14·2	*
148	T.C. Hosur	6,695	127	19·0	2	...	49	2	9	3	...	...	...	...	...	83	148	0·3	...	7·3	0·3	1·3	0·5	...	12·4	22·1	*
	South Arcot—																										
149	M.T.C. Cuddalore ...	52,216	2,132	40·8	33	...	...	162	148	51	...	[illegible]	11	1	12	1,260	1,606	0·7	...	...	2·0	2·9	1·0	0·2	24·1	30·8	30·3
150	M.T.C. Chidambaram ...	19,969	601	30·2	22	...	...	96	98	1	...	[illegible]	1	...	1	335	555	1·1	...	...	4·8	4·9	0·1	0·1	16·8	27·8	34·1
151	M.T.C. Tiruvannamalai.	17,069	770	45·1	10	...	1	121	189	10	1	[illegible]	12	1	17	303	651	0·6	...	0·1	7·1	11·0	0·6	1·0	17·7	38·1	30·4
152	T.C. Panruti	15,[illegible]	300	19·7	24	...	...	75	32	...	...	...	2	...	2	142	275	1·6	...	...	4·9	2·1		0·1	9·4	18·1	*
153	T.C. Porto Novo	13,712	318	23·2	3	...	...	62	1	...	...	...	...	...	...	143	209	0·2	...	...	4·5	0·1	...	...	10·4	15·2	11·1
154	T.C. Nellikuppam ...	13,237	39	3·0	3	...	...	12	1	...	...	...	1	...	1	21	35	0·2	...	...	0·9	0·1	...	0·1	1·6	2·9	*
155	T.C. Tindivanam	11,273	147	12·9	...	...	...	20	9	...	...	...	1	...	1	90	120	...	...	...	1·8	0·8	...	0·1	7·9	10·6	*
156	T.C. Villupuram	11,263	279	24·8	1	...	...	45	15	...	...	...	1	...	1	197	259	0·1	...	...	4·0	1·3	...	0·1	17·5	23·0	*
157	T.C. Vriddhachalam ...	9,433	244	25·9	25	1	...	112	20	...	1	...	3	...	4	59	221	2·6	0·1	...	11·9	2·1	...	0·4	6·3	25·4	*
158	T.C. Tirukkoyilur ...	8,617	251	29·1	5	...	...	85	24	24	1	...	3	...	4	62	204	0·6	...	...	9·8	2·8	2·8	0·5	7·2	23·7	*

* Being a new rural town the information is not available.

No. VI.—*Births and Deaths registered from different causes in the Districts and Towns of the Madras Presidency during the year 1903—cont.*

Number. (1)	Districts and towns. (2)	Population for which returns were received. (3)	Births. Total number. (4)	Births. Birth-rate per mille of population. (4)	Cholera. (5)	Small-pox. (6)	Plague. (7)	Fevers. (8)	Dysentery and diarrhœa. (9)	Respiratory diseases. (10)	Injuries. Suicides. Males. (11)	Injuries. Suicides. Females. (11)	Injuries. Wounds and accidents. (11)	Injuries. Snake-bite and killed by wild beasts. (11)	Injuries. Total. (11)	All other causes. (12)	Total deaths from all causes. (13)	Ratio per 1,000: Cholera. (14)	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Injuries.	All other causes.	From all causes. For the year.	From all causes. Mean of previous 5 years.
	B.—Towns—cont.																										
	South Canara—																										
159	M.T.C. Mangalore ...	44,108	1,359	30·8	1	39	277	60	215	140	5	3	5	...	13	685	1,430	0·02	0·9	6·3	1·3	4·9	3·2	0·3	15·5	32·4	30·7
160	T.C. Udipi	8,041	243	30·2	...	...	...	74	22	2	1	...	3	...	4	132	234	...	...	...	9·2	2·7	0·2	0·5	16·5	29·1	*
	Tanjore—																										
161	M.T.C. Tanjore	57,870	2,268	39·2	28	2	2	168	235	5	...	...	15	1	16	1,228	1,684	0·5	0·02	0·02	2·9	4·1	0·1	0·3	21·2	29·1	30·7
162	M.T.C. Kumbakonam ...	59,673	1,819	30·5	124	...	...	187	109	231	...	1	9	1	11	1,196	1,860	2·1	...	...	3·1	1·8	3·9	0·2	20·1	31·2	31·6
163	M.T.C. Mayavaram ...	24,276	828	34·0	48	2	...	144	105	40	...	1	2	...	3	568	710	2·0	0·1	...	5·9	4·3	1·6	0·1	15·2	29·2	30·7
164	M.T.C. Negapatam ...	57,190	1,607	28·1	75	3	1	272	126	...	1	...	7	2	10	1,332	1,819	1·3	0·05	0·02	4·8	2·2	...	0·2	23·3	31·8	33·9
165	M.T.C. Mannargudi ...	20,449	683	33·4	29	...	...	57	43	67	...	...	6	...	6	358	559	1·4	...	...	2·8	2·1	3·2	0·3	17·5	27·3	26·4
166	T.C. Tiruvalur	15,436	416	26·9	16	...	...	66	26	6	1	1	6	4	12	280	406	1·0	...	...	4·3	1·7	0·4	0·8	18·1	26·3	30·7
167	T.C. Vedaranniam ...	14,188	490	34·7	...	...	...	58	14	...	1	...	5	4	10	234	316	...	...	...	4·1	1·0	...	0·7	16·6	22·4	*
168	T.C. Tranquebar	13,149	387	29·4	22	2	...	44	5	...	...	...	1	...	1	264	338	1·7	0·1	...	3·3	0·4	...	0·1	20·1	25·7	*
169	T.C. Tiruvadamarudur ...	11,237	366	32·6	17	...	...	70	20	12	...	...	2	...	2	195	316	1·5	...	...	6·2	1·8	1·1	0·2	17·3	28·1	*
170	T.C. Adirampatnam ...	10,494	230	21·9	...	...	...	46	19	...	...	...	4	...	4	148	217	...	...	...	4·4	1·8	...	0·4	14·1	20·7	*
171	T.C. Shiyali	9,722	272	28·0	13	...	...	38	7	...	1	...	1	...	2	190	259	1·3	...	...	3·9	0·7	...	0·2	20·5	26·6	*
172	T.C. Ayyampettai ...	9,454	280	29·6	53	...	...	36	10	3	...	...	5	...	5	170	277	5·6	...	...	3·8	1·1	0·3	0·5	18·0	29·3	*
173	T.C. Muttupet	9,090	119	13·1	10	...	...	42	...	...	...	...	...	...	...	121	173	1·1	...	...	4·6	...	...	...	13·3	19·0	*
174	T.C. Tiruvadi	7,821	247	31·6	8	...	...	68	...	2	...	...	1	...	1	183	262	1·0	...	...	8·7	...	0·3	0·1	23·4	33·5	*
175	T.C. Vallam	7,590	286	37·7	1	...	...	69	13	88	...	...	1	...	1	69	235	0·1	...	...	8·3	1·7	11·6	0·1	9·2	31·0	*
176	T.C. Pattukkottai ...	7,504	310	41·3	...	1	...	34	5	...	...	...	5	...	5	161	206	...	0·1	...	4·5	0·7	...	0·7	21·5	27·5	*
177	T.C. Nannilam	6,727	162	24·1	4	...	...	12	5	...	...	...	...	1	1	94	116	0·6	...	...	1·8	0·7	...	0·1	14·0	17·2	*
178	T.C. Kudavasal	5,419	205	37·8	22	...	...	26	...	...	...	...	1	...	1	131	180	4·1	...	...	4·8	...	...	0·2	24·1	33·2	*
179	T.C. Tirutturaippundi ...	5,400	201	37·2	1	...	...	13	1	...	...	...	...	...	...	100	115	0·2	...	...	2·4	0·2	...	...	18·5	21·3	*
	Tinnevelly—																										
180	M.T.C. Tinnevelly ...	40,469	1,442	35·6	57	4	2	168	89	1	2	3	12	...	17	875	1,158	1·4	0·1	0·05	2·7	2·2	0·02	0·4	21·7	28·5	37·6
181	M.T.C. Palamcottah ...	29,845	1,084	41·3	6	77	...	184	590	96	...	...	6	1	7	235	1,195	0·2	1·9	...	4·7	14·9	2·4	0·2	5·9	30·2	26·6
182	M.T.C. Tuticorin	28,048	830	29·6	97	...	...	245	197	52	...	1	8	...	9	371	971	3·5	...	...	8·7	7·0	1·9	0·3	13·2	34·6	30·2
183	M.T.C. Srivilliputtur ...	26,382	1,158	43·9	7	...	...	42	88	38	...	...	19	2	21	480	674	0·3	...	...	1·6	3·3	1·4	0·8	18·1	25·5	25·3
184	T.C. Tiruchendur ...	26,056	306	11·7	9	...	...	68	...	...	1	3	...	...	4	206	287	0·3	...	...	2·6	...	...	0·2	7·9	11·0	*
185	T.C. Rajahpalaiyam ...	25,300	948	37·4	...	...	...	108	9	18	...	6	10	3	19	311	525	...	...	...	6·6	0·4	0·7	0·7	12·3	20·7	16·2
186	T.C. Kulasekarapatnam.	19,909	467	23·5	27	...	...	130	4	7	...	...	1	1	2	224	394	1·4	...	...	6·5	0·2	0·4	0·1	11·2	19·8	19·7
187	T.C. Sivagiri	18,150	321	17·7	...	...	...	59	...	...	...	...	3	...	3	166	228	...	...	...	3·3	...	...	0·2	9·1	12·6	*
188	T.C. Tenkasi	18,128	731	40·3	14	5	...	91	88	5	1	2	3	...	6	336	545	0·8	0·3	...	5·0	4·9	0·3	0·3	18·5	30·1	29·5
189	T.C. Viravanallur ...	17,327	675	39·0	20	1	...	88	2	...	...	2	2	...	4	415	530	1·2	0·1	...	5·1	0·1	...	0·2	23·9	30·6	23·0
190	T.C. Virudupatti	16,997	579	34·4	4	...	...	142	40	2	...	2	10	...	12	191	391	0·2	...	...	8·4	2·4	0·1	0·7	11·4	23·2	23·8
191	T.C. Sankaranayinarkovil	16,775	641	38·2	...	...	...	20	2	1	1	1	4	2	8	321	352	...	...	...	1·2	0·1	0·1	0·5	19·1	21·0	*
192	T.C. Kallidakurchi ...	14,913	601	40·3	...	...	...	63	41	29	1	3	1	...	5	275	413	...	...	...	4·2	2·8	1·9	0·3	18·5	27·7	24·9
193	T.C. Settur	14,828	450	30·0	...	...	...	65	1	1	...	2	4	1	7	163	237	...	...	...	4·5	0·1	0·1	0·5	11·3	16·5	*
194	T.C. Kadayanallur ...	13,939	675	48·4	13	...	...	72	12	12	...	...	1	1	2	231	349	0·9	...	...	5·2	1·4	0·9	0·1	16·5	25·0	*
195	T.C. Sermadevi	13,474	507	37·6	11	...	...	65	77	16	...	1	1	...	2	200	371	0·8	...	...	4·8	5·7	1·2	0·1	14·9	27·5	*
196	T.C. Vartarayiruppu ...	13,131	491	37·4	...	1	...	135	42	23	...	...	2	...	2	132	335	...	0·1	...	10·3	3·2	1·7	0·2	10·0	25·5	*
197	T.C. Sivakasi	13,021	420	32·3	5	...	...	90	2	25	2	1	4	...	7	258	387	0·4	...	...	6·9	0·2	1·9	0·5	19·8	29·7	25·2
198	T.C. Ambasamudram ...	12,969	378	29·1	5	...	...	47	...	...	2	2	1	...	5	319	376	0·4	...	...	3·7	...	...	0·4	24·7	29·2	*
199	T.C. Surandai	11,810	471	39·9	5	3	...	118	4	...	...	2	3	...	5	128	264	0·5	0·3	...	10·0	0·3	...	0·4	10·9	22·4	*
200	T.C. Kayalpatnam ...	11,746	164	14·0	...	...	...	123	4	5	...	...	3	...	3	99	234	...	...	...	10·5	0·3	0·4	0·3	8·4	19·9	24·4
201	T.C. Srivaikuntam ...	10,550	361	34·2	6	6	...	37	1	2	...	...	1	1	2	253	317	0·6	0·6	...	3·5	0·1	0·2	0·2	24·9	30·1	*

* Being a new rural town the information is not available.

No. VI.—*Births and Deaths registered from different causes in the Districts and Towns of the Madras Presidency during the year 1903*—*cont.*

Number. (1)	Districts and towns. (2)	Population for which returns were received. (3)	Births. Total number. (4)	Births. Birth-rate per mille of population. (4)	Cholera. (5)	Small-pox. (6)	Plague. (7)	Fevers. (8)	Dysentery and diarrhœa. (9)	Respiratory diseases. (10)	Injuries. Suicide. Males. (11)	Injuries. Suicide. Females. (11)	Injuries. Wounds and accidents. (11)	Injuries. Snake-bite and killed by wild beasts. (11)	Injuries. Total. (11)	All other causes. (12)	Total deaths from all causes. (13)	Ratio of deaths per 1,000 of population. Cholera. (14)	Small-pox.	Plague.	Fevers.	Dysentery and diarrhœa.	Respiratory diseases.	Injuries.	All other causes.	From all causes. For the year.	From all causes. Mean of previous 5 years.
	B.—Towns—cont.																										
	Trichinopoly—																										
202	M.T.C. Trichinopoly ...	104,721	3,050	29·2	345	19	...	327	291	136	1	...	7	2	10	1,548	2,676	3·3	0·2	...	3·1	2·8	1·3	0·1	14·8	25·6	26·8
203	M.T.C. Srirangam ...	23,059	726	31·5	45	1	...	157	91	25	...	...	3	...	3	411	733	2·0	0·04	...	6·8	3·9	1·1	0·1	17·9	31·8	29·8
204	T.C. Turaiyur ...	12,870	376	29·2	5	...	...	53	8	2	...	1	4	...	5	207	280	0·4	...	...	4·1	0·6	0·2	0·4	16·1	21·8	*
205	T.C. Udaiyárpálaiyam ...	7,553	186	24·6	21	...	...	80	4	..	...	...	1	...	1	27	153	2·8	...	...	10·6	0·5	...	0·1	3·6	17·6	*
206	T.C. Ariyalur ...	7,370	213	28·9	18	...	...	42	21	...	...	...	...	2	2	61	144	2·4	...	...	5·7	2·8	...	0·3	8·3	19·5	*
	Vizagapatam—																										
207	M.T.C. Vizagapatam ...	40,892	1,391	34·0	...	...	...	235	296	70	1	...	5	1	7	583	1,191	...	...	...	5·7	7·2	1·7	0·2	14·3	29·1	27·9
208	M.T.C. Bimlipatam ...	10,212	297	29·1	...	2	...	40	42	14	...	1	2	...	3	96	197	...	0·2	...	3·9	4·1	1·4	0·3	9·4	19·2	25·9
209	M.T.C. Vizianagram ...	34,583	1,151	33·3	...	...	...	174	280	14	...	...	9	...	9	447	924	...	...	...	5·0	8·1	0·4	0·3	12·9	26·7	27·4
210	M.T.C. Anakapalle ...	18,539	650	35·1	...	...	...	92	71	75	...	...	1	1	2	167	407	...	...	...	5·0	3·8	4·1	0·1	9·6	22·0	21·5
211	T.C. Bobbili ...	17,387	474	27·3	...	...	...	90	25	6	1	...	1	...	2	145	268	...	...	...	5·2	1·4	0·3	0·1	8·4	15·4	13·0
212	T.C. Párvatipuram ...	17,308	442	25·5	...	...	...	170	4	...	...	...	...	...	...	97	271	...	...	...	9·8	0·2	...	...	5·7	15·7	15·0
213	T.C. Sáluru ...	16,239	494	30·4	1	1	...	285	16	12	...	1	4	1	6	34	355	0·1	0·1	...	17·5	1·0	0·7	0·4	2·1	21·9	11·8
214	T.C. Palkonda ...	10,615	258	24·3	...	2	...	101	2	...	...	...	2	2	4	65	174	...	0·2	...	9·5	0·2	...	0·4	6·1	16·4	14·9
215	T.C. Narasapatnam ...	10,589	195	18·4	...	...	...	89	...	...	...	...	...	...	...	...	89	...	...	...	8·4	...	...	...	...	8·4	*
216	T.C. Yellamanchili ...	6,536	255	39·0	...	...	...	54	2	3	...	...	2	...	2	72	133	...	...	...	8·2	0·3	0·5	0·3	11·0	20·3	*
217	T.C. Srungavarappukota.	5,862	190	32·4	...	...	...	110	...	...	...	...	...	...	...	...	110	...	...	...	18·8	...	...	...	...	18·8	*
218	T.C. Razam * ...	5,096	212	41·6	...	...	...	58	16	4	1	1	...	2	4	56	138	...	...	...	11·4	3·1	0·8	0·8	11·0	27·1	*
232†	Total, Town Circles ...	4,137,977	129,897	31·4	3,647	514	5,580	24,481	13,019	4,557	95	121	1,157	120	1,493	59,596	112,887	0·9	0·1	1·3	5·9	3·1	1·1	0·4	14·5	27·3	30·5
185	Total, Rural Districts ...	33,177,634	1,035,183	31·2	23,746	14,501	7,711	290,445	36,370	8,411	685	856	8,471	2,690	12,702	319,890	713,776	0·7	0·4	0·2	8·8	1·1	0·3	0·4	9·6	21·5	20·4
417	Total, Madras Presidency...	37,315,611	1,165,080	31·2	27,393	15,015	13,291	314,926	49,389	12,968	780	977	9,628	2,810	14,195	379,486	826,663	0·7	0·4	0·4	8·4	1·3	0·4	0·4	10·2	22·2	21·2

* Being a new rural town the information is not available.

† This number 232 includes 14 other rural towns (3 in Bellary district, 4 in Gódavari district and 7 in Tanjore district), containing over 5,000 and below 10,000 inhabitants, for which statistics were not furnished for the whole year 1903.

NOTE.—Population for the Town circles except Madras, exclusive of Europeans and Eurasians, is not available according to the census of 1901. Hence the ratios have been calculated on the total population of these Town circles inclusive of Europeans and Eurasians, though the statistics are exclusive of Europeans and Eurasians.

No. VII.—*Deaths registered from Cholera in the districts of the Madras Presidency during each month of the year 1903.*

Number. (1)	Districts. (2)	Circles of registration. Number in each district. (3)	Circles of registration. Number from which deaths from cholera were reported. (3)	Villages. Number in each district. (4)	Villages. Number from which deaths from cholera were reported. (4)	January. (5)	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total. Males. (6)	Total. Females.	Total. Total.	Ratio of deaths per 1,000 of population. Males. (7)	Females.	Total.	Mean ratio per 1,000 for previous 5 years. (8)
1	Anantapur ...	19	...	965	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1·4
2	Bellary ...	19	1	915	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	0·002	...	0·001	1·8
3	Chingleput ...	21	8	2,179	19	...	4	82	1	...	...	...	17	6	1	...	4	55	60	115	0·1	0·1	0·1	1·4
4	Coimbatore ...	21	16	1,558	111	28	38	38	...	12	234	108	6	37	7	4	252	435	329	764	0·4	0·3	0·4	1·3
5	Cuddapah ...	21	4	1,338	4	2	...	...	...	...	...	...	...	...	...	...	11	6	7	13	0·01	0·01	0·01	1·6
6	Ganjám ...	12	9	4,353	110	...	24	6	38	128	201	245	159	13	13	18	26	451	420	871	0·5	0·4	0·4	0·2
7	Godávari ...	25	10	2,782	20	24	...	...	5	3	19	11	36	16	...	...	4	66	52	118	0·06	0·04	0·05	1·0
8	Kistna ...	25	3	1,920	6	...	...	...	...	...	1	...	...	...	...	1	12	5	9	14	0·005	0·01	0·01	1·2
9	Kurnool ...	11		787		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0·8
10	Madras ...	1	1	1	1	...	...	...	1	...	2	...	7	10	1	3	...	12	12	24	0·05	0·05	0·05	1·1
11	Madura ...	28	26	4,132	702	11	14	74	184	210	1,103	1,156	417	389	368	202	294	2,365	2,057	4,422	1·7	1·4	1·6	1·8
12	Malabar ...	19	12	531	186	53	203	418	560	704	1,421	1,809	761	90	13	15	11	2,898	3,259	6,157	3·1	2·3	2·2	0·7
13	Nellore ...	20	40	1,882	48	22	13	...	...	...	...	...	...	...	45	115	194	207	183	390	0·3	0·2	0·3	1·2
14	The Nilgiris ...	6		51	...	1	...	7	...	...	...	3	18	...	...	...	44	40	33	73	0·04	0·03	0·03	0·05
15	North Arcot ...	22	9	3,428	20	215	180	58	118	136	338	154	175	135	273	589	1,677	2,186	1,860	4,048	2·0	1·7	1·8	1·9
16	Salem ...	20	19	3,805	382	108	408	210	65	34	39	90	261	116	52	95	625	1,125	973	2,098	1·0	0·8	0·9	2·1
17	South Arcot ...	18	17	2,709	382	1	5	3	3	3	1	2	...	...	...	...	1	12	7	19	0·02	0·07	0·02	2·5
18	South Canara.	7	5	1,288	14	161	159	62	12	49	51	75	67	217	253	146	2,626	2,009	1,869	3,878	1·9	1·6	1·7	1·0
19	Tanjore ...	28	25	2,825	709	852	187	132	23	14	35	15	35	56	35	12	5	820	581	1,401	0·8	0·6	0·7	3·5
20	Tinnevelly ...	36	22	1,624	291	99	46	18	68	261	43	179	345	112	72	280	1,417	1,588	1,350	2,938	2·3	1·8	2·1	2·2
21	Trichinopoly.	11	11	940	604	...	...	...	...	2	3	33	11	...	...	...	...	22	27	49	0·09	0·03	0·02	2·4
22	Vizagapatam.	27	3	2,766	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0·1
	Total, Madras Presidency...	417	211	42,729	3,597	1,573	1,281	1,108	1,078	1,556	3,491	3,970	2,314	1,206	1,133	1,480	7,203	14,305	13,088	27,393	0·8	0·7	0·7	1·5

No. VIII.—*Deaths registered from small-pox in the districts of the Madras Presidency during each month of the year 1903.*

Number. (1)	Districts. (2)	Circles of Registration. Number in each district. (3)	Circles of Registration. Number from which deaths from small-pox were reported. (3)	Villages. Number in each district. (4)	Villages. Number from which deaths from small-pox were reported. (4)	January. (5)	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total. Males. (6)	Total. Females.	Total. Total.	Number of deaths among children. Under 1 year. (7)	Number of deaths among children. From 1 to 10 years.	Ratio of deaths per 1,000 of population. Males. (8)	Females.	Total.	Mean ratio per 1,000 for previous 5 years. (9)
1	Anantapur ...	19	9	965	57	31	15	28	44	17	17	7	6	4	2	...	...	88	83	171	77	75	0·2	0·2	0·2	0·5
2	Bellary ...	19	11	915	360	55	64	32	48	4	69	101	114	56	52	64	81	413	327	740	419	228	0·9	0·7	0·8	0·7
3	Chingleput ...	21	11	2,179	175	28	33	51	29	26	16	19	8	19	43	86	27	174	161	335	202	60	0·3	0·2	0·3	0·5
4	Coimbatore ...	21	12	1,558	136	69	52	30	61	41	36	45	46	43	31	25	27	242	254	496	227	154	0·2	0·2	0·2	0·4
5	Cuddapah ...	21	14	1,338	519	104	60	55	112	112	68	82	91	63	49	60	49	451	448	899	437	291	0·7	0·7	0·7	0·7
6	Ganjám ...	12	7	4,353	196	16	22	26	37	31	51	68	44	28	18	19	28	194	192	386	231	108	0·2	0·2	0·2	1·9
7	Godávari ...	25	15	2,782	200	51	89	85	77	129	147	188	109	115	145	88	78	642	659	1,301	470	480	0·6	0·6	0·6	1·5
8	Kistna ...	25	13	1,920	141	27	21	60	...	6	44	89	54	59	63	82	4	266	242	508	299	114	0·2	0·2	0·2	0·4
9	Kurnool ...	11	9	787	112	41	26	43	33	36	72	58	29	23	18	4	11	203	186	389	150	183	0·3	0·4	0·4	0·6
10	Madras ...	1	1	1	1	1	1	1	1	2	1	...	...	...	...	...	...	4	3	7	2	2	0·02	0·01	0·01	0·2
11	Madura ...	28	10	4,132	584	78	36	78	60	106	103	93	132	87	71	52	51	520	427	947	486	278	0·4	0·3	0·3	0·6
12	Malabar ...	19	16	531	120	165	226	209	149	76	87	34	10	11	15	10	10	460	492	952	77	127	0·3	0·3	0·3	0·6
13	Nellore ...	20	18	1,832	263	97	86	74	47	75	62	64	101	98	74	74	73	412	513	925	435	217	0·5	0·7	0·6	0·6
14	The Nilgiris...	6	2	51	7	...	3	6	1	2	6	3	3	3	1	3	1	15	16	31	18	10	0·3	0·3	0·3	0·5
15	North Arcot...	22	18	3,428	814	249	215	268	226	175	152	207	225	201	221	144	217	1,277	1,221	2,498	1,582	779	1·2	1·1	1·1	0·8
16	Salem ...	20	12	3,805	134	51	55	59	73	43	40	52	59	77	51	97	77	380	363	743	390	156	0·4	0·4	0·3	0·5
17	South Arcot ...	18	9	2,709	496	136	227	216	143	121	119	134	157	132	111	152	147	906	889	1,795	876	567	0·8	0·8	0·8	1·0
18	South Canara.	7	6	1,288	172	61	95	107	117	68	38	32	38	20	...	2	30	307	301	608	47	34	0·3	0·5	0·5	0·4
19	Tanjore ...	28	14	2,825	224	40	57	46	18	65	50	49	27	40	39	33	39	254	250	504	361	115	0·2	0·2	0·2	0·8
20	Tinnevelly ...	36	14	1,624	184	84	80	48	46	45	54	48	80	64	50	41	31	337	334	671	223	130	0·3	0·3	0·3	0·4
21	Trichinopoly...	11	7	940	20	8	4	16	1	2	1	2	2	1	5	...	7	28	21	49	9	22	0·04	0·08	0·08	0·2
22	Vizagapatam.	27	12	2,766	31	13	15	6	6	10	4	...	3	...	...	...	3	23	37	60	13	23	0·02	0·03	0·02	0·3
	Total, Madras Presidency...	417	248	42,729	4,946	1,405	1,482	1,542	1,319	1,103	1,190	1,368	1,337	1,144	1,058	986	991	7,596	7,419	15,015	7,055	4,144	0·4	0·4	0·4	0·7

No. IX.—*Deaths registered from Fevers in the Districts of the Madras Presidency during each month of the year 1903.*

Number. (1)	Districts. (2)	Circles of registration: Number in each district. (3)	Circles of registration: Number from which deaths from fevers were reported. (3)	Villages: Number in each district. (4)	Villages: Number from which deaths from fevers were reported. (4)	January. (5)	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total: Males. (6)	Total: Females.	Total: Total.	Ratio of deaths per 1,000 of population: Males. (7)	Females.	Total.	Mean ratio per 1,000 for previous 5 years. (8)
1	Anantapur	19	19	965	272	178	115	123	204	186	132	146	121	109	78	118	125	829	806	1,635	2·1	2·1	2·1	3·4
2	Bellary	13	19	915	915	481	320	233	255	164	161	164	118	129	158	104	265	1,352	1,240	2,592	2·8	2·6	[illegible]	6·1
3	Chingleput	21	21	2,179	1,231	664	504	608	495	488	483	515	512	463	484	508	605	3,291	3,128	6,419	5·0	4·8	4·9	4·2
4	Coimbatore	21	21	1,558	778	1,708	1,473	1,474	1,310	1,442	1,542	1,338	1,217	1,198	1,222	1,188	1,380	8,257	8,299	16,556	7·6	7·4	7·5	7·1
5	Cuddapah	21	21	1,338	1,338	1,514	1,187	1,536	1,617	1,515	1,548	1,732	1,706	1,653	1,810	2,111	2,301	10,403	9,950	20,353	15·9	15·7	15·8	18·8
6	Ganjám	12	12	4,353	2,920	1,421	1,179	1,297	1,416	1,538	1,651	2,340	2,659	2,384	2,201	2,218	2,088	11,267	11,273	22,540	11·7	10·8	11·2	10·7
7	Gódávari	25	21	2,782	1,874	1,896	1,171	1,296	1,414	1,240	1,651	1,782	2,127	1,551	2,089	2,270	2,670	11,016	10,414	21,430	9·7	8·9	9·3	9·1
8	Kistna	25	25	1,920	1,267	1,540	1,184	1,605	967	1,617	1,791	1,850	2,350	2,731	3,117	3,157	3,938	13,903	12,994	26,197	12·1	12·2	12·2	11·1
9	Kurnool	11	11	787	728	804	684	717	777	808	940	904	1,026	987	1,431	1,182	1,332	5,754	5,626	11,300	13·0	12·0	13·9	14·1
10	Madras	1	1	1	1	541	490	519	495	493	476	497	502	527	489	535	518	3,062	3,000	6,062	12·3	12·2	12·2	13·2
11	Madura	23	28	4,132	3,282	1,375	1,138	1,232	1,218	1,006	1,170	1,267	1,215	1,226	1,251	1,258	1,169	7,633	7,201	14,834	5·6	4·9	5·2	5·1
12	Malabar	19	18	531	528	1,831	1,837	2,174	2,030	2,194	2,107	2,723	2,541	1,820	1,665	1,604	1,819	12,522	11,743	24,265	9·1	8·3	8·7	8·8
13	Nellore	20	20	1,832	922	1,236	1,281	1,133	1,103	1,102	1,113	1,029	1,256	1,165	1,353	1,549	710	7,057	7,329	14,083	10·2	9·8	10·0	8·9
14	The Nilgiris	6	6	51	51	84	87	102	114	165	177	91	81	65	69	70	73	620	551	1,171	10·8	11·2	10·9	18·7
15	North Arcot	22	22	3,428	2,172	1,188	882	1,132	1,048	905	995	1,001	978	912	941	1,159	1,248	6,209	6,113	12,322	5·6	6·5	6·6	6·5
16	Salem	20	20	3,805	1,883	1,545	1,126	1,364	1,306	1,326	1,545	1,715	1,616	1,519	1,688	1,819	2,302	9,159	9,409	18,868	8·7	8·1	8·6	7·3
17	South Arcot	18	18	2,769	1,344	1,475	1,478	1,410	1,252	1,572	1,310	1,564	1,536	1,418	1,459	1,687	1,721	8,880	8,572	17,452	7·6	7·3	7·4	5·9
18	South Canara	7	7	1,288	1,131	1,010	962	919	760	809	1,014	1,474	1,287	1,116	870	840	1,034	6,135	6,077	12,212	11·2	10·4	10·8	12·0
19	Tanjore	28	28	2,825	1,885	794	682	778	793	838	811	813	760	786	886	869	1,049	4,780	5,026	9,806	4·5	4·3	4·4	2·9
20	Tinnevelly	36	29	1,024	1,025	1,749	1,385	1,209	930	859	857	796	761	813	605	907	1,219	6,201	6,192	12,393	6·2	5·9	6·0	3·9
21	Trichinopoly	11	11	940	845	818	761	686	735	810	773	763	687	740	713	748	956	4,589	4,664	9,253	6·8	6·3	6·4	4·3
22	Vizagapatam	27	27	2,766	1,553	2,502	2,057	1,912	1,299	1,604	2,370	2,085	3,026	3,553	3,532	3,308	3,973	16,085	16,148	32,233	15·8	15·2	15·5	14·8
	Total, Madras Presidency.	417	[illegible]	42,729	28,076	26,199	21,907	23,218	22,198	22,087	24,631	26,210	27,864	27,200	28,224	23,673	34,475	159,174	155,752	314,926	8·7	8·2	8·4	7·8

No. X.—*Deaths registered from Dysentery and Diarrhœa in the Districts of the Madras Presidency during each month of the year 1903.*

Number. (1)	Districts. (2)	Circles of registration: Number in each district. (3)	Circles of registration: Number from which deaths from dysentery and diarrhœa were reported. (3)	Villages: Number in each district. (4)	Villages: Number from which deaths from dysentery and diarrhœa were reported. (4)	January. (5)	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total: Males. (6)	Total: Females.	Total: Total.	Ratio of deaths per 1,000 of population: Males. (7)	Females.	Total.	Mean ratio per 1,000 for previous 5 years. (8)
1	Anantapur	19	17	965	179	50	35	37	62	48	78	140	137	92	73	87	87	483	439	922	1·2	1·1	1·2	0·6
2	Bellary	15	19	915	918	103	61	62	57	52	159	205	273	259	251	215	204	1,007	945	1,952	2·1	2·0	2·0	1·4
3	Chingleput	21	21	2,179	929	329	309	336	276	265	257	351	318	271	290	290	290	1,846	1,738	3,582	2·8	2·7	2·7	3·1
4	Coimbatore	21	20	1,558	275	240	172	183	106	231	355	411	119	443	479	411	604	2,055	2,126	4,181	1·9	1·9	1·9	0·8
5	Cuddapah	21	18	1,338	398	33	30	31	55	68	92	121	107	55	51	61	53	375	362	737	0·6	0·6	0·6	0·4
6	Ganjám	12	12	4,353	641	68	78	109	156	197	218	318	226	191	138	95	119	1,113	841	1,954	1·2	0·8	1·0	0·8
7	Gódávari	25	20	2,782	529	49	63	95	98	125	175	246	218	200	140	91	88	840	748	1,588	0·7	0·6	0·7	0·5
8	Kistna	25	22	1,920	128	72	54	93	57	81	117	174	257	183	149	150	228	896	719	1,615	0·8	0·7	0·7	0·6
9	Kurnool	11	11	787	231	46	35	41	35	24	41	140	120	85	62	59	37	393	341	734	0·9	0·8	0·8	0·4
10	Madras	1	1	1	1	177	192	254	244	213	212	210	225	214	215	236	214	1,304	1,251	2,015	5·5	5·1	5·3	7·9
11	Madura	28	22	4,132	672	141	115	101	121	124	213	220	173	145	116	122	168	923	871	1,794	0·7	0·0	0·6	0·5
12	Malabar	19	19	531	478	140	512	603	628	829	165	1,178	977	588	113	358	358	3,963	3,872	7,835	2·9	2·7	2·8	1·7
13	Nellore	20	18	1,834	185	58	57	41	43	40	50	68	68	60	53	99	76	366	317	718	0·5	0·5	0·5	0·4
14	The Nilgiris	6	6	51	31	8	6	11	25	43	53	64	41	42	28	20	17	176	182	358	3·0	3·7	3·3	1·6
15	North Arcot	22	22	3,428	1,052	387	311	305	289	242	281	301	330	258	327	350	461	1,984	1,861	3,845	1·8	1·7	1·8	1·3
16	Salem	20	20	3,805	853	267	200	214	215	216	332	417	339	274	295	331	348	1,756	1,701	3,457	1·8	1·5	1·6	0·9
17	South Arcot	18	18	2,769	538	234	228	173	148	134	147	151	100	163	133	161	170	1,057	958	2,015	0·9	0·8	0·9	0·7
18	South Canara	7	7	1,288	694	268	210	180	135	155	194	392	330	281	247	209	357	1,574	1,374	2,948	2·0	2·4	2·0	2·0
19	Tanjore	23	25	2,825	465	102	163	128	103	131	130	144	157	155	100	174	336	1,018	987	2,005	1·0	0·8	0·9	0·9
20	Tinnevelly	35	26	1,024	514	428	227	179	117	90	136	154	138	155	159	198	249	1,132	1,087	2,219	1·1	1·0	1·1	0·9
21	Trichinopoly	11	11	940	354	85	46	51	70	77	180	90	90	101	82	112	173	530	527	1,057	0·8	0·7	0·7	0·6
22	Vizagapatam	27	25	2,766	959	57	55	69	73	90	110	125	191	185	124	82	102	676	587	1,263	0·7	0·6	0·6	0·6
	Total, Madras Presidency.	417	381	42,729	10,405	3,791	3,168	3,274	3,161	3,465	4,429	5,689	5,290	4,391	4,021	3,906	4,805	25,497	23,892	40,389	1·4	1·3	1·3	[illegible]

No. XI.—*Statement prescribed by the Government of India in Letter No. 10—326, dated 8th December 1894, Home Department (Sanitary), communicated with G.O., No. 2654 L., Mis., dated 20th December 1894.*

(Comparative Table showing percentage of mortality to total mortality from year to year under each head of death causation.)

Name of municipality. (1)	Date of completion of works of: Drainage. (2)	Water-supply.	Average annual death-rate since the introduction of drainage system or water-supply: Years. (3)	Death-rate.	Percentage of deaths to total mortality under each head of death causation: Cholera. (4)	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.	Average annual death-rate for the five-year period preceding the introduction of drainage system or water-supply: Years. (5)	Death-rate.	Percentage of deaths to total mortality under each head of death causation: Cholera. (6)	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.
Ádóni	...	September 1895.	1895	23·6	0·3	...	38·1	0·3	0·8	60·5	1890	19·2	...	...	51·6	...	2·1	46·3
			1896	25·4	1·0	0·1	31·2	0·9	0·6	66·2	1891	38·1	41·9	...	31·0	0·4	0·5	26·2
			1897	37·9	9·3	...	31·7	3·9	0·7	54·4	1892	34·7	13·1	...	38·1	3·0	1·0	44·8
			1898	26·5	...	0·3	29·7	5·3	2·7	62·0	1893	22·2	...	...	51·7	0·3	1·4	46·6
			1899	24·1	0·1	...	22·1	2·4	1·3	74·1	1894	24·3	0·3	...	37·0	...	1·4	61·3
			1900	21·4	...	...	34·9	5·3	0·5	59·3	...	...	...	...	...	...	...	...
			1901	20·1	0·3	...	30·0	2·9	0·7	66·1	...	...	...	...	...	...	...	...
			1902	56·5	11·2	...	2·4	0·9	0·2	85·3	...	...	...	...	...	...	...	...
			1903	23·1	...	0·6	6·0	10·9	1·3	81·2	...	...	...	...	...	...	...	...
Cocanada ...	...	July 1903	1903	20·4	1·0	...	19·9	12·2	1·1	65·8	1898	20·5	...	...	15·7	6·3	0·5	77·5
											1899	23·1	...	1·3	19·2	9·1	1·2	69·2
											1900	26·1	9·6	0·8	18·8	10·1	1·3	59·4
											1901	23·8	2·1	5·4	18·9	10·6	0·7	62·4
											1902	21·8	...	0·1	22·6	12·5	0·5	64·3
Conjeeveram ...	...	July 1897.	1897	28·3	6·6	0·4	21·3	10·7	1·3	59·7	1892	32·5	2·7	1·5	24·1	12·2	1·0	58·5
			1898	29·4	1·1	0·6	13·5	13·0	1·4	70·4	1893	33·0	1·3	2·2	26·0	13·0	1·8	55·7
			1899	29·8	1·9	0·7	2·1	16·5	1·7	77·1	1894	30·6	4·5	0·5	26·8	10·5	1·5	56·2
			1900	31·2	2·0	1·6	4·5	14·2	1·1	76·6	1895	33·6	5·3	0·8	25·2	11·7	0·3	56·7
			1901	35·5	2·8	1·0	10·8	17·7	1·0	66·7	1896	33·3	0·6	0·1	23·8	10·6	1·1	54·8
			1902	32·8	0·1	1·0	11·6	25·9	1·5	59·9	...	...	...	...	...	...	...	...
			1903	32·4	...	0·7	11·0	19·7	0·8	67·8	...	...	...	...	...	...	...	...
Coonoor	Jan. 1893 ...	...	1893	31·9	1·6	...	30·6	17·6	0·5	49·7	1888	28·4	...	1·5	34·6	17·6	2·9	43·4
			1894	31·9	2·6	...	28·0	19·7	0·5	49·2	1889	26·9	5·4	...	27·1	14·7	...	52·8
			1895	27·9	...	...	21·9	13·6	1·2	63·3	1890	42·7	1·5	1·5	39·2	13·7	0·5	43·6
			1896	41·3	2·8	0·4	22·4	17·6	1·2	55·6	1891	29·4	5·6	2·2	22·5	14·1	1·1	54·5
			1897	43·8	5·6	0·4	20·8	15·5	1·9	55·8	1892	37·0	0·5	1·3	41·2	15·2	0·4	38·4

No. XI.—*Statement prescribed by the Government of India in Letter No. 10—326, dated 8th December 1894, Home Department (Sanitary), communicated with G.O., No. 2654 L., Mis., dated 20th December 1894*—cont.

(Comparative Table showing percentage of mortality to total mortality from year to year under each head of death causation.)

1	2		3		4						5		6						
Name of municipality.	Date of completion of works of		Average annual death-rate since the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.						Average annual death-rate for the five-year period preceding the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.					
	Drainage.	Water-supply.	Years.	Death-rate.	Cholera.	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.	Years.	Death-rate.	Cholera.	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.
Coonoor—*cont.*	Jan. 1893—*cont.*	...	1898	34·6	...	...	14·8	17·2	2·9	65·1	...	...	...	...	...	...	...	...
			1899	28·6	...	...	9·4	22·9	1·8	65·9	...	...	...	...	...	...	...	...
			1900	36·5	...	1·4	20·4	19·4	1·8	57·0	...	...	...	...	...	...	...	...
			1901	24·4	1·0	...	20·2	14·9	0·9	63·0	...	...	...	...	...	...	...	...
			1902	29·0	...	...	25·1	19·0	0·8	55·1	...	...	...	...	...	...	...	...
			1903	46·0	...	...	8·2	16·3	1·5	74·0	...	...	...	...	...	...	...	...
Cuddapah	...	July 1893.	1893	46·9	...	1·5	68·0	2·0	0·9	27·6	1888	31·7	15·4	2·5	26·6	5·8	1·2	48·5
			1894	33·9	...	1·9	49·9	4·4	2·9	40·9	1889	30·5	13·6	1·0	20·2	8·3	1·2	45·7
			1895	32·9	...	0·3	54·6	5·2	1·9	37·7	1890	43·0	9·4	0·9	30·1	3·0	0·6	36·0
			1896	21·7	0·5	5·6	46·6	3·7	2·4	41·2	1891	29·3	7·8	1·6	49·4	0·2	0·8	31·2
			1897	28·5	4·3	0·2	43·0	2·6	2·2	48·7	1892	58·3	10·6	0·3	43·8	3·4	1·7	40·2
			1898	29·7	0·2	1·8	49·4	2·1	0·8	45·7	...	...	...	...	...	...	...	...
			1899	29·0	...	1·2	47·2	5·4	0·6	45·6	...	...	...	...	...	...	...	...
			1900	31·7	1·0	2·4	31·2	7·6	1·4	53·4	...	...	...	...	...	...	...	...
			1901	29·5	5·8	3·3	32·0	2·7	1·2	55·0	...	...	...	...	...	...	...	...
			1902	21·2	0·3	1·2	31·0	5·5	1·4	60·6	...	...	...	...	...	...	...	...
			1903	27·3	...	0·7	26·6	5·6	2·9	64·2	...	...	...	...	...	...	...	...
Dindigul	...	Aug. 1896.	1896	23·1	9·0	1·1	25·4	11·3	4·5	48·7	1891	29·1	25·8	2·6	3·1	1·7	2·0	64·8
			1897	22·1	47·3	2·2	14·8	7·0	1·3	27·4	1892	20·5	4·3	0·5	7·7	1·5	3·6	82·4
			1898	18·9	15·7	1·1	22·3	13·6	2·1	45·2	1893	23·5	10·8	0·2	5·4	5·0	1·5	76·2
			1899	18·9	...	10·7	22·0	11·5	2·6	53·2	1894	23·7	4·8	...	14·6	8·8	2·9	68·9
			1900	25·6	25·2	4·4	15·6	16·0	0·8	38·0	1895	21·7	0·9	...	19·2	12·3	2·3	65·3
			1901	16·6	11·9	1·2	20·3	18·4	1·7	46·5	...	...	...	...	...	...	...	...
			1902	17·5	...	0·2	11·1	20·0	1·8	66·9	...	...	...	...	...	...	...	...
			1903	25·5	0·2	...	16·3	21·5	0·8	59·2	...	...	...	...	...	...	...	...

No. XI.—*Statement prescribed by the Government of India in Letter No. 10—326, dated 8th December 1894, Home Department (Sanitary), communicated with G.O., No. 2654 L., Mis., dated 20th December 1894*—cont.

(Comparative Table showing percentage of mortality to total mortality from year to year under each head of death causation.)

1	2		3		4						5		6						
Name of municipality.	Date of completion of works of		Average annual death-rate since the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.						Average annual death-rate for the five-year period preceding the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.					
	Drainage.	Water-supply.	Years.	Death-rate.	Cholera.	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.	Years.	Death-rate.	Cholera.	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.
Kumbakónam ...	Oct. 1894 ...	...	1894	37·5	17·3	0·5	18·9	10·0	0·5	52·8	1889	34·8	6·9	0·7	14·8	16·2	0·9	51·5
			1895	31·2	3·2	0·7	21·9	11·4	0·7	62·1	1890	31·6	8·1	10·2	17·2	13·4	0·6	50·5
			1896	34·2	9·3	...	20·0	11·6	0·6	58·5	1891	30·5	11·3	1·6	20·2	13·0	0·4	53·5
			1897	39·9	20·2	...	16·2	11·5	0·4	45·7	1892	29·1	9·2	1·3	20·1	13·4	0·6	55·4
			1898	30·0	11·8	...	15·1	10·3	0·7	62·1	1893	36·2	19·8	1·3	14·5	11·6	0·7	52·1
			1899	36·4	13·0	...	14·7	9·3	1·1	61·9	...	...	...	...	...	...	...	...
			1900	30·3	3·4	...	14·6	6·9	0·8	74·3	...	...	...	...	...	...	...	...
			1901	31·9	10·2	0·1	15·9	7·4	1·2	65·2	...	...	...	...	...	...	...	...
			1902	29·1	5·5	0·1	9·6	6·8	0·8	77·2	...	...	...	...	...	...	...	...
			1903	31·2	6·7	...	10·0	5·9	0·6	76·8	...	...	...	...	...	...	...	...
Kurnool	...	October 1897.	1897	53·2	11·3	3·2	40·6	12·7	0·2	32·0	1892	55·2	10·6	...	56·7	3·3	1·5	28·5
			1898	24·6	...	...	50·8	6·0	1·0	42·2	1893	30·2	...	...	57·9	4·2	3·0	34·9
			1899	27·0	...	...	48·2	15·7	2·3	33·8	1894	31·3	3·1	0·1	47·0	4·6	2·1	43·1
			1900	29·3	...	0·3	45·6	16·8	2·8	34·5	1895	30·5	6·2	0·4	44·0	3·4	0·5	45·5
			1901	32·9	...	...	49·9	15·8	1·9	32·4	1896	30·4	4·0	1·9	44·1	3·6	0·7	45·7
			1902	30·0	2·0	...	37·4	13·9	3·3	43·4	...	...	...	...	...	...	...	...
			1903	29·4	...	0·1	24·8	17·9	2·3	54·9	...	...	...	...	...	...	...	...
Madras	...	April 1872.	1872	35·2	...	...	...	...	...	...	1867	27·2	...	...	...	...	...	...
			1873	36·7	...	...	...	...	...	...	1868	23·7	...	...	...	...	...	...
			1874	30·6	...	...	...	...	...	...	1869	17·5	...	...	...	...	...	...
			1875	35·6	...	...	...	...	...	...	1870	26·4	...	...	...	...	...	...
			1876	39·6	...	...	...	...	...	...	1871	28·9	...	...	...	...	...	...
			1877	(Famine year.)														
			1878	47·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1879	34·7	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1880	37·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1881	38·9	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1882	35·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1883	32·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...

No. XI.—*Statement prescribed by the Government of India in Letter No.* 10—326, *dated 8th December* 1894, *Home Department (Sanitary), communicated with G.O., No.* 2654 *L., Mis., dated 20th December* 1894—cont.

(Comparative Table showing percentage of mortality to total mortality from year to year under each head of death causation.)

1	2		3		4						5		6					
Name of municipality.	Date of completion of works of		Average annual death-rate since the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.						Average annual death-rate for the five-year period preceding the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.					
	Drainage.	Water-supply.	Years.	Death-rate.	Cholera.	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.	Years.	Death-rate.	Cholera.	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.
Madras—*cont.*	...	April 1872—*cont.*	1884	40·5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1885	36·8	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1886	36·2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1887	39·8	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1888	37·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1889	42·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1890	42·4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1891	52·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1892	46·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1893	41·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1894	36·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1895	37·7	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1896	37·8	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1897	35·5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1898	44·8	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1899	38·5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1900	46·3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1901	55·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1902	42·0	0·2	0·3	34·3	15·7	0·9	48·6	...	...	...	...	...	...	...	...
			1903	37·7	0·1	0·04	31·9	13·9	1·1	53·0	...	...	...	...	...	...	...	...
			1894	32·6	13·5	0·9	15·8	11·7	1·0	57·1	1889	31·2	9·0	3·0	15·1	19·4	1·8	51·7
			1895	26·1	1·2	0·6	17·6	9·3	1·3	70·0	1890	32·7	3·0	11·9	18·0	14·2	1·6	51·3
			1896	23·2	0·4	0·6	22·3	10·6	1·6	64·5	1891	31·4	16·8	7·3	12·8	13·6	1·9	48·2
			1897	25·6	11·3	0·7	18·7	12·3	1·2	55·6	1892	29·3	0·8	9·9	16·0	9·9	1·5	61·9
			1898	25·1	4·5	0·5	13·7	15·4	1·6	64·3	1893	29·9	9·8	7·6	14·6	7·3	1·6	59·1
Madura	...	April 1894.	1899	24·5	3·0	3·4	18·8	10·9	0·9	63·0	...	...	...	...	...	...	...	...
			1900	31·9	30·3	1·2	14·3	9·8	1·0	43·4	...	...	...	...	...	...	...	...
			1901	22·7	5·4	0·2	18·7	10·4	0·5	64·8	...	...	...	...	...	...	...	...
			1902	23·7	5·6	0·3	16·6	13·0	0·8	63·7	...	...	...	...	...	...	...	...
			1903	25·1	5·1	0·1	20·2	15·3	0·9	58·4	...	...	...	...	...	...	...	...

No. XI.—*Statement prescribed by the Government of India in Letter No.* 10—326, *dated 8th December* 1894, *Home Department (Sanitary), communicated with G.O., No.* 2654 *L., Mis., dated 20th December* 1894—cont.

(Comparative Table showing percentage of mortality to total mortality from year to year under each head of death causation.)

1	2		3		4						5		6					
Name of municipality.	Date of completion of works of		Average annual death-rate since the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.						Average annual death-rate for the five-year period preceding the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.					
	Drainage.	Water-supply.	Years.	Death-rate.	Cholera.	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.	Years.	Death-rate.	Cholera.	Small-pox.	Fevers.	Dysentery and Diarrhœa.	Injuries.	All other causes.
Tanjore	...	Oct. 1895.	1895	25·5	5·8	0·8	22·1	21·2	0·8	49·3	1890	28·2	11·1	6·3	22·6	20·0	0·9	39·1
			1896	27·0	3·7	2·0	23·5	25·4	0·9	44·5	1891	29·4	3·8	4·4	21·2	23·3	0·6	46·7
			1897	25·2	12·3	0·6	20·4	22·4	0·7	43·6	1892	29·2	12·7	0·9	19·1	28·4	0·8	38·1
			1898	25·5	16·3	0·3	13·1	18·2	0·1	52·0	1893	35·7	28·8	2·2	17·6	22·0	0·3	29·1
			1899	26·0	6·2	3·1	19·2	16·4	1·1	54·0	1894	26·9	15·2	0·9	16·5	26·3	1·2	39·9
			1900	27·0	4·8	2·8	22·2	19·8	0·2	50·5	...	...	...	...	...	...	...	...
			1901	26·0	5·2	0·1	18·2	25·7	0·8	50·0	...	...	...	...	...	...	...	...
			1902	29·2	3·5	0·0	9·7	18·0	0·6	67·6	...	...	...	...	...	...	...	...
			1903	29·1	1·7	0·1	10·0	14·0	0·9	73·3	...	...	...	...	...	...	...	...
Trichinopoly ...	...	December 1895, but water supplied from April 1896.	1896	30·4	19·2	0·8	22·4	11·9	1·1	44·6	1891	29·5	17·1	3·8	19·9	11·4	0·6	47·2
			1897	29·1	10·6	1·4	19·6	9·2	1·0	58·2	1892	25·6	13·0	5·9	26·6	13·7	1·3	39·5
			1898	30·4	24·1	1·4	14·1	6·7	0·9	52·8	1893	36·6	36·8	3·9	20·8	9·9	0·8	27·8
			1899	26·6	15·3	0·6	5·9	9·0	1·1	68·1	1894	24·4	12·6	1·6	29·4	11·0	1·1	44·3
			1900	30·3	7·7	0·6	10·5	7·9	0·7	72·6	1895	23·6	14·0	0·4	31·2	15·7	1·5	37·2
			1901	24·8	11·9	0·5	12·8	10·6	1·0	63·2	...	...	...	...	...	...	...	...
			1902	21·2	2·8	0·6	18·3	10·0	0·9	67·4	...	...	...	...	...	...	...	...
			1903	25·7	12·9	0·7	12·2	10·8	0·4	63·0	...	...	...	...	...	...	...	...
Vizagapatam ...	...	Dec. 1902.	1903	29·5	...	...	19·7	24·7	0·6	55·0	1898	23·6	...	0·2	25·2	20·0	0·9	53·7
											1899	31·6	...	0·1	26·8	24·0	1·7	47·4
											1900	33·1	0·8	...	21·3	20·8	1·8	55·3
											1901	25·8	0·4	...	20·8	18·0	1·1	58·8
											1902	26·6	...	...	19·8	20·1	1·7	58·4

PART II.

SANITARY ENGINEERING.

THE FOURTEENTH ANNUAL REPORT

OF THE

SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS,

1903.

I.—Investigation of Schemes.

Investigations in respect to the drainage and water-supply of the following towns were carried out during the year:—

(a) *Schemes on the Programme for* 1903.

(1) *Coimbatore water-supply.*—In G.O., Mis. No. 494-M., dated 29th April 1902, Government ordered the investigation of a scheme for the water-supply of the town. The proposed source of supply was the Kumarasawmi tank, the last of a group of tanks fed from the Noyel river by the Chitrachavadi channel. It was supposed that the tank receives a supply for all but two months in the year and that a two months' supply for the town could be secured by forming a reserve tank by bunding off a portion of the Kumarasawmi tank. On further investigation after proper surveys and levels had been taken, it was found that the information on which the original proposal was based was inaccurate. The tank remains dry ordinarily for five months in the year and for a longer period when the season is unfavourable. The capacity of the tank is just equal to a two months' supply to the town. On these circumstances being brought to the notice of the Chief Engineer, Public Works Department, he formulated a new scheme, *i.e.*, to construct a new tank below the existing tanks at one or other of the two sites indicated, sufficiently large to hold a five months' supply to the town. This scheme was investigated during the year and is quite feasible; but, of course, it will cost much more than the Kumarasawmi tank scheme. Detailed plans and estimates will be prepared during 1904.

(2) *Ootacamund drainage.*—A report, plans and estimates of the drainage of Ootacamund were submitted on 11th March 1903. The scheme embraced the following portions of the town:—

(1) The Kodapamund block.

(2) The old Ootacamund including Government buildings on Stonehouse Hill.

(3) The bazaar blocks 1 to 10 dealt with in the scheme submitted in 1899 and to which are now added blocks 9*a* and 10*a*.

(4) The Metucherry block.

(5) The Kandal and old Ootacamund block.

The Sanitary Commissioner pointed out that the scheme as submitted excludes very important portion of the inhabited areas and proposed the inclusion of certain new areas, the regrading of the main sewer and certain other modifications. Thereupon two estimates, one for regrading the main sewer (Rs. 1,57,000) and the other for regrading only the incorrect portion of the sewer (Rs. 38,000) were prepared and further instructions on the points raised by the Sanitary Commissioner were requested. The Sanitary Board, in its Proceedings No. 400-S. of 23rd October 1903, replying to the various points, considered that the cost of the various items making up the scheme, viz., improvements to the sewer, drainage of the various blocks and areas should be separately estimated for and requested the Sanitary Engineer to remodel the scheme accordingly after obtaining the views of the Collector of the Nilgiris and of the Chairman of the Municipality.

To carry out the investigations proposed by the Sanitary Board, application has been made to Government for the necessary survey establishment and as soon as this is sanctioned the work will be taken up. In the meantime officers referred to have been consulted.

(3) *Anantapur drainage.*—The Sanitary Engineer was requested in G.O., No. 1262-M., dated 17th October 1902, to work out roughly a drainage scheme and submit an approximate estimate of the cost of the same and was informed that, if the scheme was likely to be within the means of the council, the necessary plans and estimates might be prepared. As it was found that no proper maps of the town are available at present, the investigation of the scheme was postponed pending the receipt of the Revenue Survey maps which are under preparation.

(4) *Gudiyattam water-supply.*—As it was thought that the scheme for the water-supply of this town which was presented in 1896 could be executed without the aid of Government, the revision of the scheme was included in the programme for the year. The revised scheme is in course of preparation and will be submitted shortly.

(5) *Nellore water-supply.*—As mentioned in the previous year's report, the investigation of the scheme was undertaken early this year and the necessary levels and surveys having been completed, the plans and estimates are under preparation and the scheme, it is hoped, will be presented shortly.

(*b*) *Additional Schemes.*

(1) *Cuddapah—Improving the water-supply.*—In G.O., Mis. No. 595-M., dated 18th April 1903, Government accepted the opinion of the Sanitary Engineer and the Sanitary Board that the proposal of the council to dam the Bugga stream was impracticable and approved of the Sanitary Board's recommendation to undertake the experimental borings suggested by the Geological Department and requested the Municipal Council to place Rs. 250 at the disposal of the Sanitary Engineer. Funds were provided in May 1903, but were found insufficient and to continue the investigation further, an additional allotment of Rs. 1,000 was asked for. The council has been requested to provide the necessary funds in its budget for 1904–1905.

(2) *Ellore water-supply.*—At the request of the Sanitary Engineer, the Municipal Council was asked to allot Rs. 325 for taking additional levels required in connection with the above scheme. Funds having been provided, the necessary levels and surveys were completed, but the preparation of plans and estimates will be taken up as soon as the work on hand is overtaken.

(3) *Kodaikánal water-supply.*—In G.O., No. 1575-M. of 19th December 1902, the Sanitary Engineer was directed to revise the estimate in accordance with the Sanitary Board's views. The original estimate provided for an earthen dam which, under the instruction of the Chief Engineer, Public Works Department, has been altered into a concrete dam with a rubble skin wall two feet thick. The estimate as finally revised amounted to Rs. 62,250 against the original cost of Rs. 49,180 and was approved by the Sanitary Board. Government in its order No. 1243-M. of 7th September 1903 stated that the cost of the scheme was out of proportion to the interests of the community and that it cannot undertake to make any contribution from Provincial Funds. The council was requested to consider and report what further action it proposes to take in the matter.

(4) *Masulipatam water-supply.*—As mentioned in the last year's report, the experiments on the Gudur sand ridge were commenced by the Public Works Department by sinking three wells and as the water from one of the wells was pronounced to be impure by the Chemical Examiner, it was advised that a new site should be selected for an experimental well where it was known that good water existed. The Sanitary Commissioner did not consider the experiments conclusive and suggested the introduction of tube wells at various sites where fresh water existed. The Sanitary Board thereupon recommended that water in the other wells of the ridge should be analysed first and the result reported and should the analysis prove favourable, experiments for testing the yield might afterwards be made.

(5) *Madura drainage.*—The scheme referred to in the last year's report was approved by the Sanitary Board and recommended for sanction of Government.

(6) *Mangalore drainage.*—In G.O., No. 1414-M. of 19th November 1902, the Sanitary Engineer was requested to work out roughly a scheme for draining the western portion of the town and to submit an approximate of cost. A preliminary report with an approximate estimate amounting to Rs. 1,46,000 was submitted to Government on 11th June 1903 and communicated to the council to report their views thereon.

(7) *Srirangam drainage.*—The proposal of the Sanitary Engineer to make a preliminary survey of the town with a view to ascertain how the town drainage can best be dealt with having been approved by Government, the Municipal Council was directed to place Rs. 500 at his disposal. This sum having been placed by the council, levels and surveys were commenced.

(8) *Salem drainage.*—At the request of the council, the Sanitary Engineer was called upon by Government to prepare a drainage scheme for Gogai of Salem town. Two alternative proposals, one with open surface drains to cost Rs. 75,000 and the other with underground pipes to cost Rs. 1,00,000, were submitted. The matter was referred to the Council for report as to its ability to finance the scheme.

(9) *Tiruvannámalai water-supply.*—The Sanitary Board having finally recommended the adoption of the Samudram Valley scheme as being the best, Government ordered in G.O., Mis. No. 679-M., dated 8th May 1903, that the scheme should be further investigated and kept ready for execution so that it may be put in hand when funds permit. In response to the request of Government as to what tests he would propose to ascertain the yield of the trench and what the cost of such tests would be, the Sanitary Engineer reported that the test should be for the full length of the trench and that the cost would be Rs. 14,538. Government approved of the proposals and requested the council to report how it proposes to meet the cost.

(10) *Vellore water-supply.*—The plans and estimates for the water-supply of this town submitted on the 18th December 1902 having been approved by the Sanitary Board, were referred by Government to the Public Works Department for scrutiny.

(11) *Saidapet water-supply.*—The extra borings suggested by the Geological Department and referred to in the report for 1902 were undertaken during the year and a report was submitted to Government. Government considered that the well and gallery should first be constructed and the yield of water tested before sanctioning the scheme for execution and requested the District Board of Chingleput to allot Rs. 13,400 for the purpose, which the Board was not able to meet owing to the crippled state of its finances.

II.—Execution of Works.

(*a*) *Works under execution by the Public Works Department.*

(1) *Cocanada water-works.*—The estimate for the works amounted to Rs. 4,66,200 was revised by the Public Works Department for the second time and sanctioned in G.O., No. 2088-W., dated 24th July 1903. The works were completed during the year and taken over by the council in August 1903 and have since been opened for public use.

(2) *Vizagapatam water-works.*—The water-works which were under execution by the Public Works Department were completed during the year and were taken over by the council on 21st May 1903, and the town is now being supplied with water.

(3) *Tuticorin water-works.*—Owing to the alteration in the design of the outlet sluices in consequence of the very large amount of silt being brought down the channel from the Korampallam tank, a revised estimate amounting to Rs. 1,17,780, which was prepared by the Superintending Engineer, VI Circle, in consultation with the Sanitary Engineer, was sanctioned in G.O., No. 3021-W., dated 27th October 1903. The Board of Revenue having put forward the proposal of extending the water-supply to the Levingupuram Salt Factory at Tuticorin, the Sanitary Engineer was requested to report the probable cost of laying a branch pipe to the Factory.

Accordingly an estimate amounting to Rs. 4,300 was prepared and submitted. This was sanctioned to be executed by Public Works Department at the cost of Municipal Funds.

(*b*) *Works under execution by the Sanitary Engineer to Government.*

(1) *Experimental filters at Guindy.*—The construction of experimental filters for disposal of the sewage from the King Institute of Preventive Medicine at Guindy sanctioned for execution by the Sanitary Engineer was completed and handed over to the Sanitary Commissioner during the year. The estimate for the works was revised during the year owing to the extra cost involved in acquiring the land and it amounted to Rs. 7,870 against the original estimate of Rs. 7,790. In view of the proposal of the Sanitary Commissioner to acquire additional land and lay it out for irrigation by purified sewage approved by the Sanitary Board, a supplemental estimate, amounting to Rs. 3,590, was submitted and sanctioned in G.O., No. 3466-W., dated 3rd December 1903.

(2) *Coonoor water-works.* The Government of India having sanctioned the utilization, by the Coonoor Municipality, of the water of the Kundamunji stream for the water-supply of Coonoor, the scheme was revised and submitted in July 1903. The scheme in brief consists of a dam across the Coonoor stream, 10,650 feet of delivery main, a service reservoir on Gray's hill and 18,711 feet of distributionary mains varying from 2½ to 6 inches diameter.

The revised scheme which was estimated to cost Rs. 1,16,740 was sanctioned in G.O., No. 1547-M., dated 21st October 1903, for execution by the Sanitary Engineer. Immediate arrangements were accordingly made and the works are in progress.

(3) *Guntur water-works.* On the earnest representation of the council of the great distress felt in Guntúr from want of drinking water during the hot months, Government adopted the scheme for supplying water from the Yengalayapalem springs estimated to cost Rs. 2,17,800 and requested the Sanitary Engineer to report how much could be spent in the current year on the scheme if funds were provided. The Sanitary Engineer reported that it would be possible to spend about 1¼ lakhs on the construction of head works, the conduit, the service reservoir and one line of pipes only to the centre of the town.

This proposal having been accepted, Government in its order No. 757-M. of 30th May 1903, made a grant of Rs. 1,00,000 to the Municipal Council and promised to lend Rs. 25,000 as a loan on the usual terms and further promised to lend Rs. 25,000 as a loan on the usual terms and further promised to raise the grant by Rs. 9,000 to complete the whole scheme leaving the council to provide the balance by further loan. The necessary arrangements were made in allotting contracts and getting materials, etc., and the works are in rapid progress.

The Municipal Council having expressed its desire to proceed with the complete scheme, a revised estimate amounting to Rs. 2,40,095 including a supplemental estimate of Rs. 14,180 for extension of pipe lines and for additional fountains not provided in the original estimate of Rs. 2,17,800 was submitted and sanctioned by Government in G.O., No. 3164-W., dated 7th November 1903.

(4) *Dindigul water-works.* As stated in the last year's report, a report with plans and estimates for the extension of the gallery and completion of the works in connection with Oodukam Valley scheme for the water-supply of the town was submitted on the 26th January 1903.

The scheme is designed for a supply of 200,000 gallons per day for a population of 25,000 as desired by the council against 160,000 gallons in the original scheme. The scheme comprises a trench 1,200 feet long including the length already cut, an engine and boiler house to be fitted with existing pumping machinery and a 7-inch pumping main to the existing service reservoir and is estimated to cost Rs. 39,300.

The scheme was sanctioned in G.O., No. 1020-M., dated 27th July 1903, for execution by the Sanitary Engineer to Government. Towards the cost of the works the Municipal Council have already provided Rs. 10,000 from a loan and Government made a grant of Rs. 19,650 from Provincial Funds and promised to lend the balance of Rs. 9,650 on the usual terms.

Necessary arrangements have been made to get materials and allot contracts, etc., and the works were in good progress at the end of the year.

(5) *Trichinopoly water-works.* The protective works to the head works of the water-works were completed during the year. The two additional infiltration wells sanctioned in G.O., No. 2694-W., dated 3rd October 1902, were sunk before the flood season but these were not connected to main owing to the late arrival of materials ordered through the Director-General of Stores.

Twice during the year the collecting pipe, laid in the river bed, was damaged by high floods resulting in the stoppage of pumping as sand entered the screening well through the broken joint. The town supply was stopped for about a fortnight in the first case and about eight days on the second occasion. Temporary arrangements had to be made to exclude sand from the inlet pipe and admit water so that pumping might be resumed.

It was considered that the pipe line in the bed of the Cauvery would always be liable to damage by high floods in its present unsupported state and this would result in the stoppage of water for the town. To obviate the possibility of the water-supply being cut off, the acting Sanitary Engineer submitted proposals for drawing flood water in an emergency from the river into the existing screening chamber at a cost of Rs. 2,800 and pointed out that the work can be put in hand from the funds already at his disposal. In submitting the above proposals, it was suggested that the two new wells need not be connected during the ensuing dry season and until the collecting pipe was properly secured and that three alternative designs for permanently restoring the existing collecting pipe line from any damage by future floods, were under preparation and would be submitted at the earliest possible date. The proposals of the acting Sanitary Engineer have since been approved by the Chief Engineer, Public Works Department, and sanctioned by Government.

III.—Maintenance of Water-works.

The Municipal Councils have from time to time been advised of the defects found in the maintenance of the water-works. The weekly statements issued to each council has been continued and the consumption of fuel and stores when found to be excessive was promptly brought to the notice of the council concerned for necessary action. In this way an efficient check is kept on the staff at the pumping station.

In the case of Kurnool Municipal pumping station where the consumption of fuel was very high, a proposal was submitted by the acting Sanitary Engineer towards the end of the year to substitute an oil engine for one of the present steam engines in order to reduce the cost of running the pumps. This proposal has since been approved by Government and it is hoped that the oil engine will be running during the year 1904.

Complete examinations of the machinery at the water-works were made by the Inspectors of Steam-boilers and Prime-movers and reports on their condition forwarded to the authorities concerned. The report on the condition of the pumping plant and working of the various stations will be found in the Boiler Inspector's report as usual.

The supply of water during the year in the following towns continued to be satisfactory, viz., Madura, Tanjore, Kurnool, Dindigul, Conjeeveram, Ooty, Adóni and Cuddapah. At Trichinopoly owing to the damage by high floods to the collecting pipe, only unfiltered water was supplied from August 1903.

IV.—Minor Sanitary Works and Type Designs.

Plans and estimates relating to 101 minor sanitary works, of which 3 were minor drainage works, 31 minor water works, 29 hospitals, 20 markets, 10 slaughter-houses, 4 latrines, 1 incinerator and 3 improvements to roads and buildings, were checked and scrutinised during the year.

One type design for wooden staging for drawing water from tanks was prepared and submitted to the Sanitary Board at the end of the year.

Sanitation of Chepauk.—As stated in the last year's report, plans and estimates, amounting to Rs. 58,185, for the construction of latrines, urinals, and lavatories for the Chepauk Government buildings and for the improvement to the pipe system there were forwarded to the Consulting Architect to Government on 5th February 1903.

Coonoor market improvements.—In response to a request of Government for the preparation of plans and estimates for the above works on the lines indicated by the Collector of the Nilgiris, the Sanitary Board was furnished with plans and estimates, amounting to Rs. 1,87,000. These were returned by the Sanitary Board with a request to lay the matter before the council and obtain their views. In laying the matter before the council, the Sanitary Engineer was requested to prepare an alternative estimate providing for essentials only; and this estimate amounted Rs. 1,14,700. The two proposals were put before the council, who expressed their inability to adopt any of the proposals owing to heavy anticipated outlay in connection with plague. The matter was reported to the Sanitary Board.

V.—Concluding Remarks.

During the year Mr. J. A. Jones, Sanitary Engineer to Government, having been granted combined leave for 7 months and 11 days, the undersigned assumed charge from Mr. Jones of the office from 2nd November 1903. Mr. H. Nowroji, Assistant Sanitary Engineer, acted as Engineer, Madras Municipality, for 3 months from 10th June to 9th September 1903, during which period Mr. J. E. Lockyer acted as Assistant Sanitary Engineer.

The following officers were in charge of works under execution during the year:—

Mr. J. E. Lockyer, Engineer, Coonoor water-works.
Mr. J. R. Sivasubramania Iyer, Supervisor, Guntur water-works.
Mr. J. E. Heusman, Supervisor, Dindigul water-works.

Inventories of valuable stock have been maintained in the office.
The service registers have been duly maintained and kept up to date.
The staff has worked satisfactorily throughout the year.

W. HUTTON, A.M.I.C.E.,
Ag. Sanitary Engineer to Government.

OFFICE OF SANITARY ENGINEER TO GOVERNMENT,
COLLEGE BRIDGE HOUSE, EGMORE,
MADRAS, *9th March* 1904.

Government {1904} of Madras.

LOCAL AND MUNICIPAL.

Recd.	} 1904.	*Enclosures*
Read.		*Spare copies*

G.O., Nos. 803, 804-L., 8th July 1904.

JULY.

Sanitation.

Reviewing the reports on—for 1903.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following papers :—

Proceedings of the Sanitary Board, No. 153-S., dated 16th May 1904.

Read—the following papers :—

Report of the Sanitary Board for the year 1903.
" " Engineer for the year 1903.

Resolution—

Submitted to Government with reference to rule 23 of the rules relating to the constitution and functions of the Sanitary Board issued with G.O., No. 1081-L., dated 2nd September 1903.

2. The report of the Sanitary Commissioner has not yet reached the Board. It will be submitted on receipt.

(True Extract.)

R. PARSONS,
Secretary.

To

The Secretary to Government, Local and Municipal Department, with enclosures and 8 spare copies of the Sanitary Board's report.

Sanitary Commissioner.

Proceedings of the Sanitary Board, No. [illegible]/S., dated 16th May 1904.

Read—the following :—

Report of the Sanitary Commissioner for the year 1903.

Resolution—

Submitted to Government *in continuation* of Proceedings of the Sanitary Board, No. 153 S., dated 16th May 1904.

(True Extract.)

R. PARSONS,
Secretary.

To

The Secretary to Government, Local and Municipal Department, with 1 report.

ORDER—No. 803-L., dated 8th July 1904.

The sanitary history of the year 1903 is fully recorded and discussed in the reports of the Sanitary Board, the Sanitary Engineer and the Sanitary Commissioner which are read above. Lieut.-Colonel King's report is especially full and interesting. The Government have but few observations to add.

2. The total number of births registered is higher than in 1902 or than the average of the 10 preceding years. The Government are glad to observe that Lieut.-Colonel King is able to attribute the recorded increase in part to improved registration, which, however, the Government regret to remark, advances but slowly. Registration of both births and deaths is especially defective in Cuddapah, Ganjam, Madura and North Arcot and the attention of the Collectors is directed to the subject. With the exception of thirteen towns, there was an increase in the recorded birth rate in Municipal areas. In Coimbatore, Ootacamund, Tiruppattur, and Vellore, the decrease is ascribed to the exodus of the people during plague. There was no reason, however, why there should have been a falling off in Cocanada, Masulipatam, Periyakulam, Kodaikanal, Tirupati, Vaniyambadi, Tinnevelly, Tuticorin and Srivilliputtur, and the Councils concerned are requested to make arrangements to secure accurate registration. In respect of the registration of deaths in Municipalities, the better results obtained there as compared with those in the districts were due partly to the registration of vital statistics being compulsory and partly to increased attention to the subject. There was no change in the arrangements for the registration of vital statistics within railway limits outside Municipal towns, and the Station Masters were entrusted with the duty of reporting to the local registrar, births and deaths occurring within these limits.

3. With regard to the mortality from cholera, the Government desire to call the attention of all Municipalities to the significant fact that in the six Municipal towns which had a protected water supply, the rate of cholera mortality during the five years ending 1903 was lower by 66 per cent. than during the quinquennium preceding the introduction of the water supply. The mortality from small-pox during 1903 fell from ·7 to ·4 per mille of the population. It was heavy in North Arcot, Bellary, South Arcot and Cuddapah. In North Arcot the compulsory provisions of the Local Boards Act in regard to vaccination have now been brought into force in 14 Unions, while in South Arcot and Cuddapah this course has been adopted in eleven and eight Unions respectively. The District Board of Bellary is requested to take similar steps in regard to the more advanced tracts of the district. It is satisfactory to note that the rate of mortality in Municipalities was only ·1 per mille against ·8 in the previous year; but the rates were much above the average in Palamcottah, Gudiyattam and Cannanore and in the opinion of the Government the increase must be attributed mainly to the neglect of the Councils concerned to enforce effectively the compulsory provisions of the District Municipalities Act. The number of deaths registered under plague was more than in the previous year, being 13,291 against 10,795, representing a mortality of 0·5 per mille. Fever continued to be the chief classified cause of death, the rate of mortality for districts being 8·4 per mille and for Municipalities 6·3 per mille. The Government have read with interest the remarks of the Sanitary Commissioner in paragraph 20 of his report on the subject of the investigation of the nature and causes of the malarial fever prevalent in Madras.

4. The attention of the Municipal Councils concerned is drawn to the remarks of the Sanitary Commissioner in paragraph 22 of his report regarding the causes of dysentery and diarrhœa. The report called for in this connection from the Municipal Council of Conjeeveram in paragraph 5 of G.O., No. 778-L., dated 22nd June 1903 should be expedited.

5. The Vizagapatam and Cocanada water works were completed by the Public Works Department, while the works for the water supply of Coonoor and Guntur and the extension of the existing arrangements for the water supply of Dindigul were under execution by the Sanitary Engineer. This officer prepared and submitted during the year to the Sanitary Board or other authorities plans and estimates for the drainage of Ootacamund, Mangalore and Salem. He also suggested minor improvements in connection with the maintenance of the existing water works and checked and scrutinised for the Sanitary Board the plans and estimates relating to 101 minor sanitary works, besides preparing a type design for wooden staging for drawing water from tanks.

6. The Sanitary Board, whose good work the Government acknowledge with thanks, scrutinised the plans and estimates relating to 149 sanitary works of the total estimated value of Rs. 17,66,394. The rules for the conduct of the business of the Board were revised during the year, so as to empower the local bodies to carry out, without reference to the Board, all works estimated to cost Rs. 1,000 and less (instead of Rs. 200 as before), those costing between Rs. 500 and Rs. 1,000 being, however, subject to the approval of the Sanitary Engineer. Provision has also been made in the revised rules for the Board's being furnished by the local bodies with an annual report of progress in the execution of works which have been approved by the Board.

7. Government need hardly remark that they do not share the Sanitary Commissioner's view that hopes for the advance of sanitation have disappeared under their orders prohibiting the employment of Certificated Sanitary Inspectors in rural areas except for the supervision of sanitary arrangements at festivals and fairs and on the occasion of epidemics. On the contrary, they believe that the desired improvement will proceed more rapidly and satisfactorily from the employment of Assistants to the District Medical and Sanitary Officer.

8. The thanks of Government are due to Lieut.-Colonel King for his unwearied labours throughout the year to promote sanitary reform. The year under review was the last year of Mr. J. A. Jones' service as Sanitary Engineer to this Government. For 14 years he has held that important post, and His Excellency the Governor in Council is glad to record his high appreciation of the great care and thoroughness with which during the whole of that period Mr. Jones discharged the very responsible duties of his office.

(True Extract.)

H. D. TAYLOR,
Ag. Secretary to Government.

To

The Sanitary Board.
" Sanitary Commissioner.
" Sanitary Engineer.
" Surgeon-General.
" Public Works Department.
" Public Department.
" Revenue Department.
" Deputy Adjutant General, Madras Command.
" Inspector-General of Police.
" Inspector-General of Prisons.
" Accountant-General.
" Director of Public Instruction.
J. A. Jones, Esq.
All Collectors.
" Presidents of District Boards.
" Chairmen of Municipal Councils.
The President, Municipal Commission, Madras.
Editors' Table.

ENDORSEMENT—No. 804-L., dated 8th July 1904.

Copy to the Government of India, Home Department.

H. D. TAYLOR,
Ag. Secretary to Government.