

Public (1899) Department.

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[Despatch Abstract.]

According to: Lt Indef. commg. with
remarks, to the officers concerned, the memoran-
dum of the Army Sanitary Commission, on the
report of the Sanitary Commissioner for Madras
for 1897.

5-10-99

BACK PAPERS.

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1600628-2-28. H426-2-9-98.

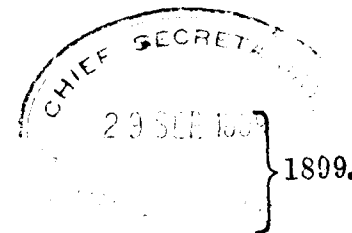
Government (1899) of Madras. LOCAL AND MUNICIPAL.

C.S.
Order no 1120 of 3-10-98.
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Enclosures

Spare copies

G.O., &c., Nos. 1896, 1897 L., 22nd September 1899.

SEPTEMBER.

Memorandum of the Army Sanitary Commission.

Communicating, with remarks, to the officers concerned — on the Report of the Sanitary Commissioner for Madras for 1897.

GOVERNMENT OF MADRAS.
LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper:—

Despatch from the Right Honourable the Secretary of State for India, dated 20th July 1899, Statistics No. 1.

ABSTRACT—Forwarding, for information, copy of a Memorandum by the Army Sanitary Commission on the Report of the Sanitary Commissioner for Madras for the year 1897.

ORDER—No. 1896 L., dated 22nd September 1899.

The Memorandum of the Army Sanitary Commission received with the despatch read above will be communicated to the officers concerned.

2. The Sanitary Commissioner is requested to state whether he has any remarks to offer on the observation made by the Commission in paragraph 6 of its Memorandum that it is difficult to believe that, as compared with its neighbours, Madras enjoyed the immunity from fever mortality which the recorded statistics indicated.

(True Extract.)

J. H. C.
for Ag. Secretary to Government.

To the Sanitary Commissioner,	} with a copy of the Memorandum.
„ the Sanitary Engineer,	
„ the Sanitary Board,	
„ the Surgeon-General,	
„ all Presidents of District Boards,	
„ all Chairmen of Municipal Councils,	
„ all Collectors,	
„ the President, Municipal Commission, Madras,	
„ the Public Department,	
„ the Revenue Department,	

ENDORSEMENT—No. 1897 L., dated 22nd September 1899.

Copy to the Government of India, Home Department.

M. HAMMICK,
Ag. Secretary to Government.

Ed. C. M. Thum'usawmy.

MEMORANDUM by the Army Sanitary Commission on the Report of the Sanitary Commissioner of Madras for 1897.

The first 13 pages of the volume are taken up with the Report of the Sanitary Board for 1897 and its Appendix. Besides scrutinizing the plans and estimates of 185 sanitary works of an estimated value of nearly twelve lakhs of rupees, the Board issued to local bodies carefully worded circulars with instructions to help them in preparing plans and estimates of sanitary works. With type designs already in their possession, and this code of instructions to guide them, local bodies should now be in a position to submit their projects in a form capable of being dealt with by the Board. Hitherto, much trouble and delay have been occasioned owing to the defective state in which plans and estimates have been sent up to the Board. The question of a bacteriologist for the Presidency has been under the Board's consideration. The opinion of the Board is in favour of such an appointment; and it is stated that the Government, having arrived at the conclusion that there was a large scope for a bacteriologist in the Presidency, "advised the Government of India accordingly."

2. Famine, owing to crop failure following deficient and unseasonable rainfall in 1896, continued until October of the year under report. At the time of greatest pressure the area declared to be affected covered upwards of twenty-six thousand square miles, with a population of more than five and a half millions. The year's rainfall was considerably above that of the previous year, as well as that of the ten years ending 1894. The fall during the south-west monsoon was 9.04 inches above, and the fall during the north-east monsoon 6.98 inches below, the average. The prices of food grains were greatly higher than in the previous year, and than the average for the ten years ending 1894. For the whole Presidency the normal price of staple food grains was exceeded by 62.1 per cent.; but as the Sanitary Commissioner observes, average rates for districts give but a rough idea of the extent to which high prices prevailed in certain parts. In one locality he found that "cholum, or jawari, was 251 per cent. above normal, and adds:—"This, as it happened, was not only the price of the staple grain, but of the only grain available. As giving some idea, beyond the quoting of these percentages of the range of high prices, I may state that, in certain months and localities in the Ceded Districts, the price of the staple grain was the same as in the great famine of 1877 and 1878." The effects of these conditions on the health of the Province as a whole, were not so serious, when judged by their influence on the birth and death rates, as might have been anticipated. It is only by dealing separately with the statistics of the districts which suffered most severely, that the effects of famine on fecundity and mortality are fully brought into view.

3. Vital Statistics.—According to the last census, the population of the Presidency numbered 35,641,828, but the population for which vital statistics are recorded numbers only 32,638,243, including Europeans and Eurasians. The birth-rate recorded for the year, excluding Europeans and Eurasians, was 28.7, and the death-rate 25.4 for town and rural circles combined, as compared with 29.9 and 20.6 in the preceding year. Although the rates given are doubtless, owing to defective registration, much understated for both years, and their comparison with the rates for other provinces in which registration

is less defective might be misleading, they nevertheless give useful information when compared with each other. The Sanitary Commissioner says: "Registration results are much vitiated in this Presidency in areas under Zamindars, in consequence of the services of the village officials responsible for the statistics not being under the full control of the Revenue officers." This explains the first of the measures which the Madras Government last year decided to adopt for the improvement of registration, "by placing the village establishments in the zamindari tracts under adequate control." A comparison of the results obtained in rural areas with those in municipalities shows that, in the latter, registration is carried out with far greater thoroughness than in the former. Whilst in rural areas a birth-rate of 28.8 per mille is recorded, the rate in municipalities is 34.4; and whilst in rural areas a death-rate of 24.4 is recorded, this in municipalities was 33.3. In paragraph 17 is given a list of the municipal towns in which penalties were inflicted for neglect of registration of vital statistics. From this it appears that in 59 municipalities penalties were inflicted for the omission to register 764 births and 666 deaths. Persistent scrutiny of the registers and the infliction of a penalty when omission of entries is discovered, rarely fail to bring about improvement. The diagrams inserted between pages 34 and 35 show very clearly the effect of the famine on the birth and death-rates. Although the Province generally suffered from high prices, famine was declared to exist in seven districts only. The diagram giving the death-rates shows that, with a single exception, all the registration circles returning the highest rates belonged to famine-stricken districts. The second highest series of death-rates also includes registration circles belonging to all the famine districts except Ganjam; and Ganjam does not contribute a circle to this series, because all of its circles, with a single exception, belong to the group recording the highest rates. The effect of famine in lowering the birth-rate is not so marked as in raising the death-rate. Taking the two famine-stricken districts of the Northern Circars as exhibiting most strikingly the effects of the famine on the vital statistics of their population, it is seen that, whilst in Ganjam the birth-rate only fell from a ratio of 26.6 per 1,000 in the preceding year to 23.9 in the year under report, its death-rate rose from 20.6 in the former year to 50.1 in the latter; and that whilst in Vizianagram the birth-rate fell from 31.7 to 28.3, the death-rate at the same time rose from 18.5 to 31.6. These figures demonstrate with sufficient clearness the influence of famine on a population, by checking fecundity and increasing mortality. An additional effect of famine is the stimulus it gives to emigration. Dr. King writes: "There was a net decrease of the population by 92,118, on account of emigration from the ports of the Presidency. Of the total number of 275,109 emigrants, 43,518 departed from the ports of Ganjam, Vizianagram, and Godavari. From these ports the emigration amounted to 1,996 above that for the previous year." But for the compensating effect of the unusual dryness, following the early cessation of the rains in the preceding year, in diminishing the prevalence and fatality of diseases of a malarious nature, there can be little doubt that the mortality consequent on the stress of famine and high prices would have been much greater. The death-rates recorded for the province in all of the months up to June, except January, were low, not reaching to 2 per mille of population.

4. *Chief Diseases.*—The deaths from *cholera* reached the enormous total of 143,445 against 47,847 in the previous year, or 4.4 against 1.5 per mille of population. This was for the Province as a whole; but some of the districts taken by themselves suffered far more severely. For example, Ganjam records no fewer than 15,533 deaths from this cause, or a ratio of 12.54 per thousand of its population. The disease prevailed in the Province throughout the entire year, the first death having been reported on the 1st of January and the last on the 31st of

December. Town circles suffered more severely than rural circles, the ratio of cholera deaths in the former having been 5.0 as compared with 4.3 in the latter. In some of the municipalities the death-rate was excessive. In Cannanore it was 28.5, in Parlakimedi 23.6, and in Calicut 23.1 per thousand of their populations. Referring to Statement No. XI. of the Appendix, we find noted against Cannanore that the "drainage of old town is defective. The existing cesspools in old town are rarely cleaned. *Water-supply.*—The wells in the old town are shallow, and are either unprotected or hardly protected. They are near latrines, drains, or burial grounds." Against Parlakimedi it is recorded:—"Drainage.—Only rough stone drains exist for carriage of storm water. Sewage water from houses soaks into the ground for most part. One more sewage cart is required. *Water-supply.*—The tanks are subject to gross pollution, faecal matter of all sorts being washed into them. Surroundings of private wells are bad. The wells are constructed with earthen rings which admit of percolation of spilt water." Against Calicut, we read that of drainage there is no regular system, and that, as regards the water-supply, many of the wells in use need protection against contamination. The sanitary defects described are perhaps not more serious than those existing in the majority of the other municipal towns; but they are of such a nature and gravity that their removal would assuredly help to fortify these towns against the recurrence of cholera epidemics so destructive as those by which they were visited in the year under report. Regarding the disinfection of water supplies, the Sanitary Commissioner states that this "is freely practised," by permanganate of potash when the supplies are to be dealt with are small, and by lime and alum when the supplies are large. "The red colour produced by the permanganate of potash, which is specially advised by Mr. Hankin, is occasionally objected to; but, on the whole, both the people and the medical officers regard its use favourably in most districts."

5. *Small-pox* accounted for 21,678 deaths; but the mortality caused by it was not excessive except in a single district. The district of Ganjam contributed 11,515, or more than two-thirds of the total number of deaths, giving a death-rate of 11.7 per thousand of its population. In no other district did the small-pox death-rate reach 1 per thousand; whilst for the province as a whole, including Ganjam, it was only 0.7. The history of small-pox for the year was therefore practically its history in Ganjam. There is no doubt that when the disease broke out in epidemic form in Ganjam its dispersion was much assisted, during a year of famine, by the wandering from village to village of people in search of employment, as well as by the filthy habits and customs of the Uriyas described by the District Medical and Sanitary Officer; but all of these causes would not have brought about an epidemic attended with so great a loss of life had the population been previously protected by vaccination; nor will all other measures combined prevent a recurrence of destructive epidemics if vaccination is neglected. Regarding the Malabar district, which so long returned the highest death-rate from small-pox, Dr. King writes:—"The vaccination staff has been considerably increased, and much attention has been paid to perfecting the working of the department in this district. The result is apparently a steady diminution of small-pox. Of course this *post hoc propter hoc* argument is open to the criticism that a large number of the population are really now protected not by vaccination but by previous attacks of small-pox." Without claiming for vaccination that it will completely extinguish small-pox in districts such as Ganjam and Malabar, it is safe to assume from general experience elsewhere, that their small-pox mortality will diminish directly as the protection of their population by vaccination increases. From the table given in paragraph 8 of the Vaccination Report it would appear that, excluding municipalities, only 18.0 per cent. of the

population of Ganjam were protected by vaccination. The calculation is based on a return of 22,550 births, but according to Statement No. II., page 76, of the Sanitary Report the births in the Ganjam district in the calendar year 1897 numbered 29,634. Perhaps the difference may be due to the number of births in the 12 months covered by the Vaccination Report being so much smaller than the number in the 12 months of the calendar year covered by the Sanitary Report. Even when the 1,232 births in the three municipal towns of Ganjam are added to the 22,550 for the district, the total falls short of the total given in the Sanitary Report by 5,852. The numbers vaccinated in the Presidency during 1897-98 exceeded those vaccinated during the preceding year by 21,009. The percentage of successful cases was practically the same in both years. Infant vaccination showed a slight increase; but the fact that only 331,297 children under one year of age were successfully vaccinated out of a grand total of 935,845 children born in 1897, exclusive of Europeans, Eurasians, and still births, shows how much remains to be done before the number of children under one year of age protected by vaccination can come anywhere near to the number born. If the 158,263 deaths of children under one year of age be deducted from the number born, there would remain available for vaccination 777,582. Deducting from the latter the number successfully vaccinated, there would remain 446,285 unprotected. The circumstance that the 12 months of the vaccination year do not entirely coincide with the 12 months of the sanitary year would not ordinarily detract much from the usefulness of a comparison between the numbers born and the numbers vaccinated in the two twelve-month periods. Undoubtedly, a fair proportion of the children under one year of age is protected in the municipal towns of the Presidency. For all of the municipalities combined this proportion averages 84.0 per cent., and compares very favourably with the proportion of 31.8 for districts. The use of human vaccine lymph has been entirely superseded in the Madras Presidency by animal lymph. The latter gave results which varied according to the mode of using it. Applied direct from calf to arm, the percentage of success was 95.5, and preserved in glass 93.9; whilst when preserved with glycerine the percentage was 85.6 and with lanoline only 82.0. In India, at all events, experience, so far, is in favour of fresh lymph whether taken from the calf or the arm. The superiority of lymph from the former source over preserved lymph is well exemplified in Madras.

6. *Fevers* were credited with a ratio of 9.0 deaths per thousand of population, as compared with 8.0 in the preceding year. The extraordinary difference between the mortality attributed to fevers in Madras, and the mortality attributed to them in Bengal, Bombay, and the Central Provinces cannot fail to strike any one who examines the returns of the several provinces. Whilst the death-rate from fevers in Madras is represented by a ratio of only 9.0 per mille of population, in Bengal this ratio is 23.62, in Bombay 24.05, and in the Central Provinces 40.98. It is difficult to believe that, as compared with its neighbours, Madras enjoyed the immunity from fever mortality which these figures would indicate. Up to the month of June of the year under report the mortality from fever in Madras was less than during the corresponding period of the previous year. "The comparative freedom in the early part of the year," writes the Sanitary Commissioner, "must be ascribed to the diminished soil moisture proving inimical to the propagation of the germ, in consequence of the failure of the north-west monsoon of the previous year; this was followed by an access of moisture with the south-west monsoon, in the presence of a population rendered susceptible to malaria owing to diminished food supply, by a mortality greater than normal under this head."

7. The mortality from *dysentery and diarrhoea* showed, as was only to be expected, a large increase over that of the previous year. The excess was contributed by districts "of which seven were formally recognized as suffering from famine, whilst in the others undoubtedly a considerable grade of distress was undergone." The ratio of deaths per mille of population caused by these diseases was 1.2 as compared with 0.7 in the previous year. There are grounds for believing that in all provinces the mortality from these diseases is understated.

8. In spite of the introduction into the Presidency of *Plague* by three persons who had been visiting Poona, the measures taken were effectual in preventing the spread of the disease from these cases as foci. The Sanitary Commissioner is justified in claiming that "whatever may be in store for this Presidency in the future, it is, humanly speaking, certain that the measures adopted on this occasion did, at least, defer its fate." The Government of Madras accepted the advice of the Sanitary Commissioner to refrain from the adoption of "any attempt at quarantine by land or sea for healthy persons or ships."

9. *Sanitary Works*.—"The water-supply works of Kurnool and Conjeeveram which were in progress in 1896, were completed during the year under review." A number of water-supply and drainage schemes were prepared and submitted to the Sanitary Board. In paragraph 57 of his Report the Sanitary Commissioner writes:—"No advance beyond that reported last year has been made in respect to sewage farming. Sewage filtration continues to be satisfactorily practised at Vizagapatam and Vizianagram." The set of recent opinion amongst practical sanitarians is against the disposal of sewage by discharging it into rivers or the sea, and of night-soil and sweepings by burning them. The old principle of restoring to the soil what has been taken from the soil is again finding favour; and its soundness being demonstrated by the success attending the use in cultivation of the valuable manures now being wasted or destroyed at much cost. It is claimed that these materials can be disposed of with safety to the public health and with profit to towns by utilizing them as manures. India would seem to be well suited for this method of disposing of the waste products of towns; and the check in the progress of sewage-farming mentioned by Dr. King is matter for regret. Neither in Madras nor in any other province has the scheme for maintaining Village Inspection Books, so far, proved much of a success. To paragraph 65 of his Report the Sanitary Commissioner appends a list of 18 districts in which the scheme is being tried; but an examination of the remarks entered against each district leads to the conclusion that, in many cases, little progress has hitherto been made in the record of useful sanitary notes in these books.

10. To sum up, the year was one of famine and high prices. Following the drought of the latter part of 1896, the first months of the year under report were, owing to their unusual dryness, unfavourable to the production of malarial diseases. Under the influence of privation during the latter part of the previous year and the early months of the year under report, the birth-rate fell considerably, the fall being most marked in the districts declared to be famine-stricken. The death-rate rose from a ratio of 20.6 in the previous year to a ratio of 25.4 for the province as a whole; but in the districts affected by famine the rise was much greater. In one of the latter the rise was from 20.6 to 50.1 per mille of its population. Yet, there can be no question that, owing to defective registration, a large proportion of the deaths still remains unrecorded. Cholera was terribly fatal, accounting for a ratio of 4.4 deaths per thousand of the provincial population. In the district of Ganjam the ratio was as high as 12.54 and in several towns exceeded 20 per mille. Small-pox caused over twenty thousand deaths, but its

ravages were mainly confined to the single district of Ganjam, in which it accounted for 14,515 deaths. Of this district it is recorded that only 18·0 per cent. of the children under one year of age were successfully vaccinated. The numbers vaccinated in the province show a considerable increase as compared with those of the previous year; whilst the percentage of successful cases continues about the same. Animal vaccine lymph alone is used in Madras. When applied direct from calf to arm it gave a percentage of 95·5 successful cases, but when preserved with glycerine only 85·6, and with lanoline only 82·0. Fever was credited with a death-rate of 9·0. This is probably but a part of the actual death-rate from this cause, seeing that in the adjoining province of Bengal the rate was 23·82, of Bombay 24·05, and of the Central Provinces 40·98. Plague obtained entrance into the Presidency, but the measures adopted to prevent its spread proved successful. Several sanitary surveys have been made and water-supply and drainage schemes prepared for submission to the Sanitary Board. The water-supply works of Kurnool and Conjeeveram were completed during the year.

9th June 1899.

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