

ORDINARY, MS.

<i>Put</i> DEPARTMENT.	
G.O., DATED	12 th Sept 1894
No.	668

INDEXED.

When given for copying. 14/9

[Despatch Abstract.]

Comd to the Surg Genl
 Proceedings & the dep.
 Comd memo and mem by
 the Army Sanitary
 Comd on the Report of the
 Sanitary Comd for death
 for 1892

READ AGAIN ORDER OF GOVERNMENT, DATED
189 , No. , MISCELLANEOUS.

FORMER PAPER, No.

2905

OF 189 5

ENCLOSURES.

CURRENT No.

STATEMENT WITH DITTO.

ORDER OF GOVERNMENT

A A

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

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Govt. of {1894} Madras.
LOCAL AND MUNICIPAL.

Issued

Recd

Encl. one.

Repd 12

G.O., 1st Sept. 1894, No. 1661 L.

SEPTEMBER.

Army Sanitary Commission.

Communicating to certain officers Memorandum
by the — on the Report of the Sanitary Commis-
sioner for Madras for 1892.

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this

Order of 12th Sep. 94, No. 668.

Comm^d to the Surgeon
General in contr^y of G.O. dated
12th Oct, 1893, No 837, Pub

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for C.S.
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Surgeon Genl, with copy of the Encl.

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18 SEP 94

IN M.S

1ST SEPTEMBER 1894, No. 1661 L., LOCAL AND MUNICIPAL.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper : —

Despatch from the Right Honorable Mr. H. H. FOWLER, Her Majesty's Secretary of State for India, to His Excellency the Right Honorable the Governor in Council, Fort St. George, dated India Office, London, 19th July 1894, No. 1, Statistics.

I forward, for the information of your Excellency's Government, 130 copies of a Memorandum by the Army Sanitary Commission on the Report of your Sanitary Commissioner for the year 1892.

ORDER—dated 1st September 1894, No. 1661 L., Local and Municipal.

Communicated to the Sanitary Commissioner, the Sanitary Engineer and the Sanitary Board, to all Local Boards and Municipal Councils, and to the Municipal Commissioners of Madras.

(True Extract.)

A. G. Shelley
Capt MR
Under Secy., P.W.D.,
for Chief Secretary.

To the Sanitary Commissioner, Madras.
„ the Sanitary Engineer.
„ the Sanitary Board.
„ all Presidents of District Boards.
„ all Chairmen of Municipal Councils.
„ all Collectors.
„ the President, Municipal Commission, Madras.
„ the Public Department.

Mini Copy of
Memorandum

MEMORANDUM by the Army Sanitary Commission on the Report
of the Sanitary Commissioner of Madras for 1892.

1. *Evidences of progress.*—We have read this Report with much interest. It is the history of another most unhealthy year, but at the same time contains a record of much excellent work done which cannot fail to be very beneficial. The volume as usual consists of distinct reports by the two members of the Provincial Sanitary Board—one by the Sanitary Commissioner, which deals with the statistics of the year, the meteorological and other conditions, and all the other questions prescribed for discussion in Sanitary Reports, and the other by the Sanitary Engineer, which contains information regarding the drainage and water-supply works which had been overtaken or were in progress during the year. This last is a very gratifying record, and sets an example which might be followed with great advantage by other provinces. It would be well that they should all be made fully acquainted with the progress which Madras is making in these important matters, and with the mode of working adopted in that Presidency, as it seems well calculated to obtain the much desired end. It is apt to be lost sight of that the great aim and object of the Sanitary Department in each province is to carry out the work of drainage, water-supply, and cleansing, and that success or failure is to be measured by the extent to which this is accomplished. The experience of Madras in 1892 is thus most encouraging, not only because of what has been done there, but also as an example of what we hope may soon be accomplished in every province in India.

2. *The unhealthiness of the year and its causes.*—As already mentioned, the year was unhealthy. The number of deaths recorded was much the same as in 1891, being 750,755 in the one and 747,553 in the other. In the Report for 1891 the mortality of that year was set down as 26.2 per 1,000, but this ratio was based on the census population of 1881; corrected by the census of 1891 the ratio is reduced to 22.2 while that of 1892 stands at 22.3. The net results of the two years are thus almost identical, the chief differences in details being a considerable diminution in cholera, which, however, still continued severe in certain parts, some increase of small-pox, and a very large increase of fevers. The year was marked by an unusually heavy rainfall, the mean for the province having been 58.43, but there could be no better illustration of the erroneous ideas to be formed from averages, on which we have frequently insisted, for we learn that while the rainfall was above the average in 10 districts it was below the average in 12 others, so that the statement showing increased rainfall for the province as a whole is entirely misleading. This point has been already noticed by the Government of Madras, which has directed that in future the districts should be divided into groups and a mean struck for each group. The prices of food were decidedly high. At pages 8 to 11 a very interesting statement is given showing for every district of the province the mortality, the meteorological conditions, and the prices of the most common grains during 1892, as compared with each of the previous five years. High prices affected all of them. As regards rainfall the general character of the evidence is decidedly to connect heavy rainfall and increased mortality, and *vice versa*.

3. *The Census in relation to registration of births and deaths.*—Before considering the vital statistics of 1892, we may glance at the results which the Sanitary Commissioner deduces from the history of the period between the censuses of 1881 and 1891, and the figures which those censuses recorded. We have in several of our Memoranda on the

Sanitary Reports suggested that this should be done as a valuable means of checking the registration, and we are glad to see that it has been carried out in this Report. It appears that, according to the censuses, the population of 1891 shows an increase of 15·28 per cent. over that of 1881, whereas the excess of births over deaths, as recorded by registration during the intervening period, amounts to only 7·87. This general result for the whole province is made up of elements varying much in different districts. In both the census and registration returns all the districts show an increase, but the proportion of this increase between the results of the two modes of calculation ranges between ·80 per cent in one and 14·79 in another. A separate statement constructed on the same principle is given for each of the 48 municipal towns. Here the census increase is 12·49, while the registration increase is only 2·21, and the details, if taken separately, indicate very marked differences. The Sanitary Commissioner seems inclined to ascribe some of these to immigration, but there can be little doubt that, as a whole, the evidence points to defective registration as the great cause.

4. *Births*.—This conclusion is fully borne out by the statistics of births in any one year. If we take the figures for 1892, we find the same evidence of defective registration as usual. The general birth-rate

* In para. 14 this is said to be 25·9, of 25·1* per 1,000 is manifestly far under the truth. It is not

necessary to examine the details for further evidence of this fact, but when we do look at the results for individual districts and circles such evidence is abundant. In the districts the rate varies between 36 in Madras and 17 in Ganjam. In 36 municipalities which are tabulated at page 21 the rate varies between 20 and 41, or, if we take the particulars of the 270 registering circles entered in Form No. I., we have a scale rising from 1·8 to 48 per 1,000. The diagram opposite page 22 shows very graphically how far behind the registration of births in Madras falls short of what it ought to be. Assuming, as there is every reason to believe, that every return of not more than 35 per 1,000 must be erroneous, there are only 11 registration circles in the whole of Madras which are not neglecting their duty in this matter of birth registration, and many of these to a very large extent. The Government has again called special attention to this matter. Several of the other provinces have been much more successful than Madras in the recording of births. Madras, with only 25 per 1,000, compares ill with 39 in Berar, 38 in the Central Provinces, and even with 34 in Bombay.

5. *Deaths*.—A similar circular diagram to that concerning births is given to illustrate the deaths. Here, as might be expected, the rates vary enormously, and one advantage of the diagram is that it shows very clearly how many of the most marked fluctuations are to be found within the same district. In Kistna, for example, they range from 42 to 17, and though this is an extreme case, there are many others where the differences are sufficiently striking. Taken by districts, the mortality varied between 46 in Madras and 14 in Ganjam. Of 55 municipal towns tabulated at page 28, Kurnool heads the list with 55·2 per 1,000, and Parlakimedi is at the foot with 18·2. Among districts, after Madras, the next highest is 35·1 in the Kurnool district. In none of the others did the rate amount to 30, and in nine it did not exceed 20 per 1,000. Much of this must be set down to imperfect registration. The general death-rate of the Madras Presidency is suspiciously low compared with that of other provinces. The rate for 1892 (22·3) is lower than that recorded in any other province during that year except Lower Burma, where registration is much neglected. In the other provinces it ranged between 32·50 in Bombay and 49·4 in the Punjab, the result of the most unhealthy year ever recorded in that part of

India. Another respect in which the mortuary statistics of the Madras Presidency are peculiar is the small variation in the mortality of different years. In other provinces this varies greatly, and we know from the accurate statistics of troops and prisoners that such variations represent the truth, but in Madras during the last six years the difference has been only that between 21·4 and 23·5.

6. *History of the chief diseases. Cholera*.—Although the epidemic of 1892 was not so fatal as that of 1891, the number of deaths from cholera recorded during the year was very large (79,033) and the death-rate per 1,000 under this head (2·3) heavy, compared with that of most years in the Madras Presidency. In 1891, the deaths had numbered 98,773, yielding a death-rate of 3·5. This epidemic of 1891 was remarkable for the large number of deaths recorded in December. Of the whole cholera deaths of that year 23,822, or near one quarter, occurred in this one month. In January 1892, the epidemic continued severe, and the number of deaths recorded in that one month was considerably larger than that recorded in any other month of the year. During 1892, nearly every district suffered almost continuously, but in all of them the disease had greatly declined in the last quarter, and in several it had disappeared altogether. The district mortality, however, varied greatly, the maximum having been 6·5, in Godavari, and the minimum ·2 in the neighbouring district of Ganjam. The only district which intervenes is Vizagapatam, and here the cholera death-rate was only 1·7. The conjunction of the two extremes so near one another is remarkable and gives rise to the question, what causes, if any, can be discovered to account for the contrast? In Godavari, the rainfall of 1891 had been decidedly deficient; that of 1892 was much above the average. A similar remark applies to Kurnool, which suffered next in severity to Godavari, the cholera death-rate there having been 6·0. But in Tanjore, which comes third on the list, with a ratio of 4·1, the state of things in respect of rainfall was very different. In 1891, it had been much the same as usual, and in 1892, instead of being excessive, as it was in Godavari and Kurnool, it was deficient. It is not possible to connect cholera prevalence or abeyance in these districts with any known meteorological phenomena. In all three of them high prices for food ruled, but, as already noted, this was a condition common to the whole Presidency. In several instances an explanation is sought for in the supposed introduction of the disease by pilgrims or others, but even if this statement could be entirely depended on, they explain none of the phenomena of the epidemic—neither its prevalence in one part, nor its comparative absence in another, or the extraordinary localization of the disease as represented by the fact that of all the villages throughout the Presidency only 17·5 per cent. returned deaths from cholera, and that the highest percentage in any district was not more than 36. When we remember the continuous presence of cholera in nearly every district throughout the entire year, this result is very remarkable and difficult to reconcile with the incidents purporting to account for the facts by importation. We entirely agree in the observation of the Sanitary Commissioner in summing up the events of the year that “no new light has been thrown on the etiology of the disease, but there is sufficient evidence to show that insanitary conditions tend to localize cholera, and that the best way of preventing the origin and spread of cholera is to remove all local insanitary conditions and carry out the sanitary measures which are known to be antagonistic to the prevalence of the disease.”

7. *Small-pox and vaccination*.—Of small-pox there were 43,757 fatal cases in 1892. During the previous 20 years the number has fluctuated between 88,321 and 14,529. The figures for both 1891 and 1892 are indicative of greater small-pox activity than there had been for a considerable period. In the year under report the highest small-pox mortality (4·4) was in the Malabar district, and then come 3·5 in

Kistna and 3.0 in Godavari. The lowest, 0.06, was in Madras. In Malabar the people are reported to be much opposed to vaccination. In Madras, on the other hand, vaccination is "carried on in a most efficient and satisfactory manner." The results in this town certainly speak well for the protection which vaccination affords. In 1884 small-pox carried off 3,997 persons. In May of that year vaccination was made compulsory, and the annual death-rate from small-pox since then has never exceeded 0.2 per 1,000. The mortality of 19.9 from small-pox in the municipality of Cochin during 1892 presents a noteworthy contrast. More information might be given on the connection between the amount of successful vaccination over a series of years in each district as compared with the deaths from small-pox during the same period. Statement I. of the Vaccination Report contains some data on this important point, but facts which are presented in tabular statements without particular attention being drawn to them and to what they teach are apt to make very little impression. The evidence in favour of vaccination ought to be very clearly set forth, and there ought to be no difficulty in obtaining it, seeing that since 1881 the number of persons successfully vaccinated in the province has risen from 543,093 to 1,049,505 in 1892-93. Such experience as that of Madras town above referred to cannot be too widely made known, as the best means of overcoming prejudices against vaccination.

8. *Fevers*.—The extreme prevalence of fevers in the Madras Presidency is indicated by the facts that the number of deaths recorded under this head in 1892 (280,627) is greatly in excess of that of previous years, and also that in 16 out of the 22 districts the fever mortality was higher than the high ratio of 1891. The district rate varied between a minimum of 2.2 in Tanjore and a maximum of 22.8 in Kurnool. Much of this disparity seems to be due to uncertainty of diagnosis and varied procedure in different places. What is returned as a death from Fever in one place is returned under All Other Causes in another place. If, for example, we take the two extremes of Fever mortality above noted, we find that the differences in the ratios under All Other Causes in those two districts are just as marked, but in the inverse direction, and the general effect is to diminish greatly the discrepancies in either taken separately. The figures for those two districts and two others added to illustrate this same general fact stand thus:—

	Mortality from		Total.
	Fevers.	All other Causes.	
Kurnool - - -	22.7	4.5	27.2
Tanjore - - -	1.9	18.5	20.4
Bellary - - -	10.3	12.4	22.7
Cuddapah - - -	16.3	3.2	20.0

The high fever mortality of 1892 seems undoubtedly to have been largely dependent on heavy rainfall and dear provisions, but with so much uncertainty attending the statistics of fever deaths it would not be safe to take them alone as any guide to the relative prevalence of fevers in different districts.

9. *Local conditions*.—It is safer to take the death-rate from all causes and compare that with the local conditions as respects drainage, water-supply, and conservancy, and that we have the opportunity of doing in the statements containing an abstract of the sanitary reports of municipalities and of those of the local fund circles. In addition, there is a separate sanitary estimate of villages in each of the Registration circles, but here the death-rates are not given as they might be with

advantage. If we take the municipalities first, there are numerous instances of high death-rates being associated with great sanitary evils. At Anantapur, for example, with a death-rate of 36.3 "cesspools abound." At Ellore, with 31.2, "house sewage flows into cesspools, public drains, or into streets," the water is "bad." In Kurnool (55.2) "about 400 cesspools exist." At Periyakulam, with 38.2, "cesspools exist," and the river, which is the chief source of water-supply "is subjected to much contamination." We need not multiply examples of this kind in the municipalities, or point out others of a like nature in the local fund and registration circles. The facts are already well known to the authorities, and, what is of more importance, they are doing what they can to remedy them. It is very important, however, to keep all the facts concerning insanitary conditions perpetually in view until they have been remedied, and therefore we attach much value to these sanitary surveys, even though they involve repetition from year to year.

10. *Sanitary improvements by municipalities and other local bodies*.—The improvements carried out by the municipal councils and district boards are described by the Sanitary Commissioner in Section IX. of his Report. They embrace (a) the sinking, cleansing, and repairing of wells; (b) the construction and repair of drains, public latrines, markets, &c.; and (c) the improvement of village sites. Statements are given to show how much was expended by each municipality and district board under these various headings, what was their estimated income, and what proportion of this was devoted to sanitation. Full particulars are also given of the conservancy establishments in each municipality, and of the extent of latrine accommodation which has been provided in proportion to the population. The information is full, and arranged in such a way that the Sanitary Commissioner can see at a glance the position of each local authority in respect to sanitary matters. In the municipalities Rs. 15,39,485 were assigned for expenditure on sanitation during the year, besides Rs. 6,31,741 allotted by the district boards. The results generally are gratifying. We have also the assurance of the Sanitary Commissioner that "there is no doubt that progress in sanitary matters is being made in most municipalities, and that many chairmen and municipal councillors are thoroughly aware of the close relation that exists between the sickness and mortality from which the people annually suffer and the insanitary conditions among which they live, and, as far as lies in their power, do all that is possible with the means at their disposal to remove existing defects, and adopt measures to protect the public health." We further learn that, even in the villages, which are necessarily the most difficult part of the community to deal with in this respect, improvement is being effected in all districts.

11. *Sanitary Engineer's report and larger sanitary works*.—As already mentioned the separate Report of the Sanitary Engineer deals with the improvements in drainage and water-supply, and it is a very satisfactory and promising record. We can only state generally what has been done during the year. Thirteen towns were surveyed, and levels taken in view of projects for water-supply and drainage, and in seven others preliminary steps were adopted for similar objects. Plans and estimates for such works in six towns were sent in and awaited the sanction of the Government, but it was found necessary to abandon three of these for the present, as being beyond the means of the municipalities concerned. In nine towns works for water-supply and drainage were either in progress or had been completed during the year. In five other towns works having the same object, which had received sanction, awaited the provision of funds for their commencement. The want of funds necessary for great works of improvement is felt in Madras, as it is in every other Indian province. The Sanitary Engineer observes, "The financial difficulty is almost the only real difficulty of the

“sanitarian in India. The difference of habits from European races
“can be met and provided for, prejudices against a proper drainage
“or water-supply have almost disappeared, but the financial difficulty
“only grows stronger.”

12. *Sanitary Board.*—No change in its constitution has taken place, it is composed as before of two members, the Sanitary Commissioner and the Sanitary Engineer. They exercise a general supervision over the municipalities and district boards, and all estimates for sanitary works, whether original or only for repairs, require their sanction before being put into execution.

8th June 1894.