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18, No. , MISCELLANEOUS.

ENCLOSURES.

CURRENT No.

STATEMENT WITH DITTO.

ORDER OF GOVERNMENT.

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

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MEMORANDUM by the Sanitary Commission on the Report of the
Sanitary Commissioner of Madras for 1891.

General characteristics of the year. Suggested amalgamation of diagrams.—This report supplies valuable and detailed information, both as respects the sanitary condition of the people during the year, and also regarding the measures which were being taken to improve that condition. Moreover, the various questions involved are fully discussed in the orders of the Government of Madras. The general history of the year as regards health was unfavourable. Owing to the prevalence of cholera, small-pox, bowel complaints, and "other causes," the mortality was higher than it had been for years. The rainfall was the lowest registered for many years, and as a consequence the principal food grains were dear. The facts for each district are very clearly set forth in a series of diagrams, which indicate the monthly rainfall and price of the main articles of food used by the people of that district, and these facts are given not only for the year under report, but also for the two preceding years, as well as the average of the ten years previous. In the subsequent section of the report, which deals with vital statistics, a similar series of diagrams is given to illustrate the births and deaths in each district, by means of which the results are shown in a striking way. Is it possible to give all these important facts, the rainfall, price of food, birth-rate, and death-rate of each district on one diagram? At present each district has three, one for rainfall, one for price of food, and one for birth and death rate combined. The change we suggest could be effected, much would be gained, for, irrespective of the economy of space, and the economy of time now required to compare one diagram with another, the facts would be presented side by side in the most forcible manner. Although there are difficulties in carrying out this suggestion, they do not appear to be insuperable.

2. *Vital statistics. Improvement of registration.*—No change was made during the year in the system of registering births and deaths. We observe that the suggestion made in our Memorandum on the report for 1889, had already been anticipated in the Madras Presidency since 1879. "All deputy inspectors of vaccination" it is said "are required to examine the birth and death registers of any village or town they visit, and in their weekly diaries they report on the condition of the registration of births and deaths as found on personal inspection." It would be of interest to have some illustrations from these diaries of the actual state of things found in a few towns and villages—how far the registers were borne out by the information otherwise obtained, whether any fictitious entries were discovered in the registers or merely errors of omission arising from neglect, all which information is of importance as showing how far the statistics are to be accepted as fairly accurate. From the Vaccination Report for 1891-92, there seem to be 57 deputy inspectors of vaccination, generally two or three in each district, so that the aid they can render in this matter of registration is considerable, while at the same time the information they obtain regarding births, and deaths from small-pox, has a direct bearing on their own immediate work. Inspection of the registers of vital statistics no doubt forms part of the district medical and sanitary officers' duties in visiting towns and villages, to which reference is made in paragraph 84 of this report. Here also a few examples of the results would serve to show how the system works, what are the main difficulties to be encountered, and how they can best be overcome.

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3. *Births.* The Census of 1891.—It is disappointing to find that the statistics of 1891, are still based on the Census of 1881. Nearly all the other provinces have employed the census figure of 1891. As the year of the census employed becomes more distant, the ratios based on it become more inaccurate. But even after making due allowance for this, there is evidence of improvement in the registration of births. There has been a steady rise in the rate, which stood for 1891 at 32.4 per 1,000, and, notwithstanding the heavy mortality exceeded the deaths by 6.2 per 1,000; of the 22 districts there are only seven in which the rate was under 30 per 1,000. The excess of deaths over births in the town of Madras to the extent of 14.7 per 1,000 is remarkable, and is attributed to the prevalence of cholera, fevers and bowel complaints. Excess of deaths frequently seems to be due to neglect of birth registration, but Madras in 1891 with a ratio of 44.7 per 1,000. The mere addition of such a large proportion of infants to the population during the year conduces largely to a heavy death rate. The Sanitary Commissioner has not discussed the effect of age on the district rates, but there is sufficient evidence in Statements I. and IV. of the Appendix to show that the excess mortality was greatly due to the deaths among young children. A diagram has been added to this report, similar to the one which has been employed for some years in the Bombay report, in order to give the birth-rate in each registration circle of the Madras Presidency by concentric circles, it is easy at once to see, and as these are ranged by rate is large, and those other localities in which it is small. In some districts examples are to be found of great variations, while in others the extremes are less marked. By the aid of this diagram the local and all other authorities concerned can see at once the places where the registration seems to be faulty. The eight circles which returned births below 20 per 1,000 and the 60 others in which the rate was under 30 all suggest the need for local inquiry.

4. *Deaths.*—During 1891, 747,553 deaths were registered, or the equivalent of 26.2 deaths in every 1,000 of the population, the highest mortality recorded since 1878. Cholera, small-pox, bowel complaints, and "all other causes" as already mentioned, largely contributed to this result. On the other hand, fevers were somewhat less fatal than in the previous year. The excess of male over female mortality was 27 per 1,000 compared with 25.3, is much in the same proportion as in most of the other provinces. One of the most striking features of the year is the unusual distribution of the mortality by months. In the first half of 1891 there was no great change from the experience of former years. The ratios for January, February, March, April, May, and June, present no great or constant increase over the ratios of 1890 or over the average of the previous ten years, but from July onwards there is a decided and steady increase, until in December the mortality stands at 3.4 compared with 2.1 in the preceding decade. A circular diagram, similar in design to that already mentioned in connection with birth registration, is given to show the death-rate recorded in each registration circle of the Madras Presidency; of these Registration circles there are 238. Here great variations are naturally to be expected, and nothing would be more unwise than to look for uniformity, or even an approach to uniformity. Much must depend on seasons and local conditions, and the aim of sanitary administration is to discover how far these last are responsible for the results, and how they can be improved so as to reduce the amount of sickness and death. The diagram is of great practical use, because it shows the mortality circle by circle in each district, and by the manner of its arrangement calls attention to the great variations presented by the circles even in the same district.

5. *History of the chief diseases: Cholera.* During the year nearly 100,000 deaths from cholera were registered throughout the Presidency

of Madras, yielding a ratio of 3.5 per 1,000. In 1877 the deaths ascribed to cholera were 12.2 per 1,000, but this ratio was altogether exceptional, and due no doubt in great measure to the famine of that year. In the 13 years which have elapsed since 1877, the cholera mortality has never exceeded 2.7, and on several occasions has been under 1.5. The cholera mortality of 1891 was thus very heavy as compared with that of other years. One noteworthy feature in it is the unusual severity of the disease in the months of July, August, and September, when, as a rule, the deaths from this cause are comparatively few. In August over sixteen thousand cholera deaths were recorded, the highest number in any one of the previous nine years having been very little over seven thousand or less than half the figure for August 1891. In six of the 22 districts the mortality for the year exceeded 5 per 1,000. In the district of South Arcot, it reached the maximum of 8.8. The August severity of the epidemic was most marked in Cuddapah, Kistna, Kurnool, and North Arcot. In several of the towns the loss of life was heavy. A list of 26 is given, in each of which the deaths from cholera exceeded 5 per 1,000 and in seven of these it exceeded 10, the maximum of 21.9 having been attained by the town of Palni in the district of Madura. In most of these 26 towns the water-supply and drainage are reported to be very defective. The experience of 1891 throws no new light on the cause of the disease, it confirms the practical conclusion so often expressed that "its spread in a place depends largely on the sanitary conditions present at the very inferior water-supply. In consequence of deficient rainfall in 1891, many of the tanks and wells which were drinking-water supplies became dry, and people had to use any water they could obtain. Further, owing to the drought, the water in the tanks and wells was much reduced in quantity, and therefore had a much larger percentage of dissolved and suspended impurities." The relative intensity of the epidemic is clearly shown in the map, but in conjunction with the general facts thereon portrayed the figures given in Annual Statement VII. should also be considered. Even in those districts which are coloured darkest the disease was by no means spread over the whole area. Even in South Arcot which suffered most, the number of villages which returned deaths from cholera was less than half of the total number in the district. Of the 238 circles of registration, 211 suffered, showing how wide was the distribution of the disease, and yet in only 975 out of 44,449 villages was its presence recorded, showing how it was confined to particular spots over this wide area.

6. *Small-pox and vaccination.*—41,322 persons died of small-pox during the year, or a proportion of 1.4 per 1,000—a higher ratio than that of any year since 1884, when it equalled 2.1. Of the total deaths in 1891, 15,593 were in children under 12 years of age. High as this number is, it is satisfactory to note that it represents a diminished proportion of mortality in children as compared with 1890. The increase of small-pox mortality in 1891 was by no means general over the Presidency; in one half of the districts it was lower than it had been in the year previous. The highest district death-rate was 5.3 in Kistna. A special table is given in paragraph 43 to show the small-pox mortality in each of the 55 municipal towns during 1891, and also the ratio per mille of successful vaccination in each. At Calicut there occurred the very high death rate from small-pox of 20.4 per 1,000, but the next highest was only 8.7; with the exception of seven others none exceeded 3 per 1,000, and many are represented by fractions. The column concerning vaccinations we conclude from the results of one year only, and there does not seem to be any accord between the figures it contains and those relating to small-pox, for low vaccination rates and low small-pox rates frequently run together, while on the other hand, high small-pox rates and high vaccination rates are also found in company—a result which

probably arises from the fact that activity on the part of small-pox as soon as it attracts attention leads to increased exertions on the part of the vaccination department. It is very important that the two sets of facts should be carefully considered, because it cannot be shown that vaccination has diminished small-pox beyond any manner of doubt, there is little to be said in its favour; but in order to make evidence of this kind of much value, it must, as we have frequently urged, be taken for a series of years. This is a question which ought to be dealt with fully in every sanitary report. The record of the increasing number of vaccinations, year after year, of the large proportion of success attained in them, and of the great number of persons, and especially young children, so protected, is very satisfactory, but it is not nearly so satisfactory as evidence of the unquestionable reduction of small-pox would be. We do not by these observations desire even to imply the smallest want of confidence in vaccination, or to question the good that has been done by it in the Madras Presidency, but it is clearly desirable, if for no other reason than to aid in overcoming the prejudices which still exist against vaccination that the good it has done should be fully demonstrated. The separate Report for 1891-92 is very satisfactory as regards the number vaccinated which is the highest ever attained, the measure of success and the large number of children successfully operated on. The number of infants protected had risen to 210,652. There is still, however, much to be done to overtake the recent led births which numbered 924,238 in 1891. The accuracy of the returns was verified in a large proportion of cases on actual inspection by the Deputy Inspectors of vaccination.

7. *General results.*—The other headings under which deaths are recorded do not call for any comments beyond those already made by the Sanitary Commissioner and the Government. We shall, however, reproduce in a succinct form the principal figures regarding births and deaths in the Madras Presidency during 1891, as they show the magnitude of the sanitary considerations involved and of the sanitary work to be done.

1891.
Population (according to the Census of 1881) 30,835,771.
births registered 924,238 = 32.25 per 1,000.

Causes of Deaths.	Number of Deaths Registered.	Rate per 1,000 Population.
Cholera	98,771	3.5
Small-pox	41,321	1.4
Fevers	247,031	8.6
Dysentery and Diarrhoea	34,221	1.2
Injuries: Suicide	1,931	—
" Wounds and Accidents	6,321	—
" Snake-bite, or killed by Wild Animals	2,301	—
Total Injuries	10,553	0.4
All other causes	315,601	1.1
Total from all causes	747,551	2.2

8. *Sanitary defects and remedies.*—In his section on sanitary works the Commissioner deals chiefly with minor matters such as the sinking and repairing of wells, the construction of latrines, and the improvement of village sites. The larger schemes of drainage and water-supply which were either in progress or only under consideration are discussed in the separate Report by the Sanitary Engineer. In the wards general cleanliness some progress had been made, but in this important matter places vary greatly. "In some towns the conservancy arrangements were well

looked after, but in others they were very indifferently attended to." The information concerning sanitary conditions and improvements is abstracted in three statements, one for local fund circles, and one for registration circle villages. For the first two, the condition of the water-supply, drainage, and conservancy in each is briefly described, the death-rate for the year is given, there are a few remarks on the general health, and a separate column shows the minor sanitary works that were executed during the year. The abstract for registration circle villages is on the same general model, but omits the important item of the death-rate, which might be added with advantage in future reports. In order to complete, moreover, the column headed "Sanitary works" should include not only the minor improvements noted by the Sanitary Commissioner, but also more complete information regarding the major works which in the subject of the Sanitary Engineer's Report. For practical administration it is necessary that the existing evils should be clearly shown, as evidenced, not only by description, but also by the death-rate, and at the same time that all the measures which are being taken to remedy these evils should be fully stated. In the matter of inspections, the department was very active; every one of the 55 municipalities was inspected either by the Sanitary Commissioner or his Deputy, and 117 other places described in which the attention of the native gentlemen of each locality is drawn to prominent defects, and to the great importance of remedying them, must be attended with good results.

9. *Sanitary Engineer's Report.*—The year's engineering work, although less than was anticipated, formed a very gratifying commencement. The Sanitary Engineer remarks that "there has been greater activity displayed and greater anxiety to improve in water-supply and introduction of local self-government, and if only those schemes now under preparation, in addition to those already sanctioned, are carried out within a reasonable period, few of the provinces of India will be able to show such a stride in sanitary progress." In order to meet the growing demands for the service of the Department and to provide proper supervision, the appointment of three Assistant Engineers was sanctioned, each to be in charge of a circle with the executive control of all surveys in progress within that circle. Of the 55 municipalities, 33 were inspected by the Sanitary Engineer during the year, and 17 by the Assistant Sanitary Engineer; the result is given to show what has been the outcome of these visits, what surveys have been made, what schemes prepared, and what work actually done. Regarding the great majority of them there is some action taken, levels taken for water-supply or drainage, and in the Report a short summary of these, schemes were being prepared, or both combined; and for 17, for water-supply or drainage had been completed and submitted to the Government. Of these 11, all but one, which was still under reference, had been made in the works, and at Kandal, and Conoor, some preliminary arrangements were being matured for commencing them. In addition to these, the Sanitary Engineer had submitted special reports on the health of Cuddapah, on the improvement of the River Cooum, Trichinopoly jails, and on the proposed valuable work being put in train, The record altogether is one not commenced during the year, but is, and also to some extent actual, for the future.

10. *The Sanitary Board.*—No change had been made in the constitution of the Provincial Sanitary Board, which consisted, as before, of two

members, the Sanitary Commissioner and the Sanitary Engineer, nor was there any change in the rules under which their work was to be carried on. In respect of their annual conjoint report which was to form Part III. of the Sanitary Report of the year, the Government has directed that this conjoint report is not required and that is sufficient to have the Sanitary Report submitted in two parts as has been done with this Report for 1891, the first being signed by the Sanitary Commissioner, and the second by the Sanitary Engineer.

18th July 1893.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

Despatch from the Right Honorable the Secretary of State for India, dated India Office, London, 17th August 1893, b. 2, Statistics.

ABSTRACT.—Forwarding 130 copies of a Memorandum by the Army Sanitary Commission on the Madras Sanitary Report for 1891.

ORDER—dated 27th September 1893, No. 213 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.

2. The attention of the Sanitary Commissioner is drawn to the remarks and suggestions made by the Army Sanitary Commission in paragraphs 1, 2, 3, 6 and 8 of their Memorandum.

(True Extet.)

*Under Secretary, 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,

with copy of memorandum.

Pub. G.O. No. 11162, 22-10-92

Govt. of Madras.
LOCAL AND MUNICIPAL.

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Order 12th Oct 1893.

No. 831.

*Communicated to the
Surgeon General.*

*J.B.
for C.S.
12/10.*

Issued

Recd. 10 Oct 1893. Encl. one

G.O., 27th Sept. 1893, No. 2139 L.

*S. Gant
with the rule.
Gant
12/10*

SEPTEMBER.

Sanitation.

Communicating to the officers concerned, with
remark, Memorandum by the Army Sanitary
Commission on the Madras Sanitary Report for
1891.