L. & M.
100—19-11-96.

V.E

ocal & Munl. (189) Department.

PRINTED.

G.O., No. 1092.P.

DATED 17-9-98.

[Despatch Abstract.]

Increased Mortality in the City of Madras

Recording, with remarks, Correspondence relating to ~~the~~ late ~~increased mortality in~~ ~~the city of Madras~~.

BACK PAPERS.

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

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
	1264P.	L&M.	7.10.98.				
	1475P	"	23.11.98.				

Note for the

G.O. No. 1092 P. of 17-9

may be despatched as it is. No alteration has been made in the G.O. (Please see the original G.O. put up with the file)

18

9P

14/10/98

BACK PAPERS

G.O.	No.	Department.	Date.	Date

FURTH

G.O.	No.	Department.	D
	1264P.	L+M.	7.
	1475P	"	23.

Note for the first

G. O. No 1092 P, dated 17th Sep-
-tember 1898, a copy of which is
herewith sent, is ready for issue.
From your note of the 19th Sep
-tember 1898 put up below, ~~[illegible]~~
it appears that this G.O has
been circulated again & it is not
known whether any alterations
have been made in it. Is
there any objection to the
despatch of the G.O as it is,
or does it require any modi-
-fication?

NOTE FOR THE Second

G. O. No 1092 P, dated 17th Sept-
-tember 1898, a copy of which is
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there any objection to the
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KP

BACK PAPE

G.O.	No.	Department.	Date.

FURTH

G.O.	No.	Department.	D
	1264P.	L+M.	7.
	1475P	,,	23.

NOTE FOR THE Madras

Please return the orig
with a printed proof copy
as soon as possible, as it
has to be circulated again.

19/8/98

+ G.O 1092 P. dated 17 Septr 1898.

Madras.

BACK PAPE

G.O.	No.	Department.	Date.

FURTH

G.O.	No.	Department.	D
	1264P.	L+M.	7.
	1475P	..	23.

NOT

Hd. Clk:

N for the Madras office

The file is sent intact for the ~~f~~ information of the First Assistant. Before sending the G.O. to Press, please detach all notes & orders which are not generally sent to the Press, and kindly see that the same are sent back to the Ooty office when the proof copy is sent.

PR
17/9/98

SKG
1/10/98

K.R.
30/9/98

13598

BACK PAPER

G.O.	No.	Department.	Date.

FURTH

G.O.	No.	Department.	D
	1264P.	L&M.	7.
	1475P	..	23.

NOTE FOR THE F.A.

This paper ha
been out of a f
circulation. As it
I advised it to be published
only, I send it and
request that the original
may be returned as soon
as possible after taking
a copy for the press. The
proof may be corrected
at Madras

29/9/98

Returned to Ootacamund as desired.

SKG
1/10/98

K.R.
30/9/98

BACK PAPE

G.O.	No.	Department.	Date.

FURTH

G.O.	No.	Department.	
	1264P.	L&M.	7
	1475P	"	2

Local & Municipa

GOVERNMENT OF MADRAS

OOTACAMUND,

189 .

S. A. Health Officer

Report
Dr. Kump Endt.-on it
Please send me

as early as you can in the morning, the file on Corpse Inspn. we took out of the Plague File in Circn. -- H.E. wants it for his minute.

H Tremenle
19/9/98

Madras.

Government {1898} of Madras.

LOCAL AND MUNICIPAL.

Recd.	1898.	*Enclosures*	
Regd.		*Spare copies*	

G.O., No. 1092 P., 17th September 1898.

SEPTEMBER.

Mortality.

Recording, with remarks, correspondence relating to the late increased — in the City of Madras.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

Read—the following papers :—

Memo. No. 110 P.

The attention of the President, Municipal Commission, Madras, and of the Sanitary Commissioner is invited to the great and continuous increase in mortality in the City of Madras, since the beginning of July last, and they are requested to investigate the causes and submit a report to Government as soon as possible. Special inquiries should be made in cases when there has been more than one death in the same house or in the same family within a short interval.

22nd August 1898. (Signed) H. TREMENHEERE,
Secretary to Government.

To the Sanitary Commissioner.
„ President, Municipal Commission, Madras.

Telegram from the Sanitary Commissioner, to the Secretary to Government, Local and Municipal Department, dated 6th September 1898.

Telegram from the President, Municipal Commission, Madras, to the Secretary to Government, Local and Municipal Department, dated 6th September 1898.

From R. E. ELLIS, Esq., M.I.C.E., Acting President, Municipal Commission, to the Secretary to Government, Local and Municipal Department, dated Madras, 3rd September 1898, No. H-248—B.P.

With reference to your memorandum No. 110 P., dated 22nd August 1898, I have the honour to forward herewith a report of Surgeon Lieutenant Cornwall, Health Officer of this Municipality, on the increase in mortality in the City of Madras from July last.

Enclosure.

Letter from Surgeon-Lieutenant J. W. CORNWALL, I.M.S., Health Officer, Madras Municipality, to the President, Municipal Commission, Madras, dated 2nd September 1898.

With reference to memorandum No. 110 P., Local and Municipal Department, dated 22nd August 1898, I have the honour to inform you that as far as locality is concerned the mortality has been high everywhere, not in one particular quarter alone. Deserving of special mention in this connection is the whole of Black Town and the centre ward of Division I, *i.e.*, the part enclosed by Tiruvattiyur High Road and Mannarswamy Covil Street. The latter is one of the most thickly populated parts of Madras, the houses are chiefly of mud and matting, with generally no ventilation and hopelessly overcrowded. Added to this, there are few or no drains and the habits of the people leave much to be desired. I am strongly of opinion that if there were some way of carrying off the immense quantities of waste water which render these huts always damp and unhealthy and a few huts here and there were weeded out to open up gang ways, and the rest provided with permanently patent ventilators, there would be a marked diminution in the death-rate.

Black Town has a system of side drains many of which are defective for want of proper repair and imperfect gradients while there is scarcely a householder who will attend to the cleanliness of his own connections. Many of the smaller streets and hutting grounds are as bad as any part of the First division, possessing no drains at all. Further, the necessity for ventilation is as great in the large pukka houses as in the one-roomed hut and the want of it tells on the health of the inmates of the one as much as on those of the other. Houses are all built in contact with rooms opening only on to the central court-yard. These rooms are further spoiled by tatties and sacking screens hung round so as to enclose the verandah. Avaricious landlords pack as many persons as possible into each house making extra private accommodation by means of these tatties.

Be the reason what it may, I understand from Black Town the severest types of malaria are now being constantly admitted into the General Hospital, the patients often being persons who have never resided out of Black Town, or at least Madras.

The crying want of Madras is drainage—drainage to carry off the wastage of the gallons of water daily delivered by the Red Hills pipes. Until this is done no efforts that can be made will ever lower the death-rate. When the season is favourable, as happens during the present time, epidemics will arise and people will die as they are doing now from what are preventible diseases if only steps be taken to prevent them.

To pass on to details, the present increase is due partly to cholera which shows, however, this week a slight decrease.

This has chiefly affected the localities mentioned before, namely, Division I centre ward and Black Town. Triplicane and Periamet have suffered to some extent also. Annexed is a table (A) showing its distribution by weeks in the wards.

There is no particular increase under the heading "diarrhœa" and the rise under "dysentery" is comparatively small being most noticeable in First, Second and Fifth divisions.

"Other diseases" includes most of the deaths from the hospitals and anything the burial-ground peons feel unable to classify under fevers and cholera and dysentery. The number of deaths returned by the hospitals is somewhat greater than usual even taking cholera into account. Before proceeding to discuss the causes of the recent high mortality I will give an outline of the system under which the registration of deaths is carried on in the City of Madras.

The only trustworthy information as to the cause of death that is received comes from the hospitals. No reports are received from the local practitioners. For the rest we depend entirely on what the friends of the deceased choose to tell the burial-ground peon or the Registrar.

From this it is obvious that the returns are of no practical value as far as classification of diseases is concerned, since the majority of the natives have a very limited knowledge of symptoms and vocabulary of medical terms. "Fever" is a kind of generic name for all diseases in which there are no very prominent and unmistakeable symptoms. It is most important at all times, particularly the present, that no burial or cremation should be allowed without a certificate from some medical practitioner, whether European, Native, Hakim or Vaidian. Persons too poor to pay might obtain the services gratis of certain practitioners appointed for the purpose in each district. The latter could claim their fees for each certificate granted from the Municipality. The penalty for producing no certificates would be that the corpse must be examined by some competent person prior to its final disposal. I believe that the total number of deaths recorded is now nearly absolutely correct, but this number alone without proper diagnoses is useless for any purpose but the compilation of certain tables ; there is no way of finding out whether certain diseases are more prevalent in one quarter than in another and to what extent. As for expecting anything to be elicited by the burial-ground peon, a man on Rs. 7 a month, or the Registrar, a man on Rs. 20 a month, it is only necessary to point out that the most skilful cross-questioner and most intelligent doctor would be unable, by merely viewing the body and interrogating the relations, to decide in the vast majority of cases from what disease death had ensued.

Returning to present conditions the annexed table (B) shows that there is a general tendency for the mortality to rise about this season even during comparatively healthy years. The better to realise this, similar tables (C) and (D) are shown below for two unhealthy years namely 1891 and 1892.

The year 1892 is especially comparable with 1898 as it shows that circumstances which favour cholera may also cause a great increase in the mortality under other headings. "Fevers" in all probability include some cholera cases for the people will always conceal them when they can, having a horror of disinfection. Nearly all the houses in which more than one death has occurred since 1st July 1898 have been revisited during the past few days by a hospital assistant and he has reported that the remaining occupants are healthy. Endeavours are made by myself and all the sanitary inspectors and overseers to inspect the bodies of all persons who die from "fever" or any other undefined illness. Hitherto there has been no reason to suspect plague, but the number of bodies that can be thus seen is limited owing to religious prejudices. Muhammadans consider it desecration for the cloth covering the body to be lifted even by a near relative and co-religionist, so none of them can be seen. Caste Hindus raise other objections and even Pariahs do not like a female body to be looked at. Notwithstanding the appallingly high death-rate and our inability to adequately account for it, I am of opinion that plague has not yet gained an entrance into Madras, but the machinery for accounting for deaths is so faulty that it would be quite possible for several cases to occur without our knowledge. Hence the absolute necessity of introducing at once compulsory certification of deaths.

The present abnormal mortality can only be considered due to an exceptionally favourable season for the development of diseases of various kinds, coupled with unknown meteorological conditions, which undoubtedly, though at the present day it is not understood how, can influence the incidents of microbic, parasitic and other disorders, when the environment of the populace is such that organisms find a suitable extra-corporeal habitat.

No. 1950-S.

Forwarded to Government with reference to the telegram from this office of this date. The introduction of compulsory production of medical certificate of cause of death, as suggested by the Health Officer, is essential under the provisions already decided upon by Government. Further investigation by actual examination of cases is necessary before a final decision can be arrived at, as to the cause of increased mortality. This is surrounded with difficulties, and cannot be managed without some delay. A statement will be forwarded as quickly as possible.

Fort St. George,
6th September 1898.

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

Order—No. 1092 P., dated 17th September 1898.

Recorded. The Government accepts the Health Officer's opinion in which the Sanitary Commissioner concurs, that the late increased mortality in the City of Madras is due to the peculiar character of the season acting in conjunction with recognized insanitary conditions, and not to the existence of concealed cases of plague.

2. The Government has received a communication from the Sanitary Commissioner in which he ascribes the high percentage of mortality to the following causes also: viz., prevalence of cholera to an extent greater than has been reported; dearness of food-grains; immigration of weakly persons from Nellore and other parts affected by the recent distress; and increase of population over the census figures which are used in calculating percentages.

(True Extract.)

H. TREMENHEERE,
Secretary to Government.

To the President, Municipal Commission, Madras.
" Surgeon-General.
" Sanitary Commissioner.
Editors' Table.

Exd. A. F. Eccleston.

Government (1898) of Madras.

LOCAL AND MUNICIPAL.

Proof for approval

W R
14/10/98

Press
Strike off as corrected
11/10

Recd.	1898.	*Enclosures*	
Regd.		*Spare copies*	

G.O., No. 1092 P., 17th September 1898.

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17

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a/ K/

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R/

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Fort St. George, (Signed) W. G. KING, Surgn.-Lieut.-Col.,
6th September 1898. *Sanitary Commissioner.*

Order—No. 1092 P., dated 17th September 1898.

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(True Extract.)

for Secretary to Government.

To the President, Municipal Commission, Madras.
" Surgeon-General.
" Sanitary Commissioner.
Editors' Table.

Exd. A. F. Eccleston.

V2

(1) Read ~~Secret~~ from No. 1110 P. dy 22-8-98
(print full)

(2) Telegram from the Secy to Govt., L & M Dept dy 5-9-98 to the Sanitary Commr & the President Mul Madras, ~~[illegible]~~

(3) Telegram from the Sanitary Commr. ~~to~~ the Secy to Govt., L & M Dept., dy 6-9-98; Q

(4) Telegram from the President Mul Madras to the Secy to Govt., L & M Dept dy 6-9-98. Q

(5) C. No. 1652 P. (Print full, ~~except~~ Statements)

~~2. Other Causes of the high percentage of mortality appear to be, Prevalence of Cholera to an extent greater than has been reported;~~

To the President Mul. Madras 1/6
" Surgeon General 1/6
" Sanitary Commr. 1/3
" Editor's table.

Dep 20/IX/98

as soon as possible.

Order No. 1092 P. dy 17-9-98.

Recorded. The Govt. accepts the Health Officer's opinion in which ~~as the~~ ~~[illegible] by telegram~~ the Sanl. Commr. concurs, that the late increased mortality in the City of Madras is due to the peculiar ~~conditions~~ character of the season acting in conjunction with recognized insanitary conditions & not to the existence of concealed cases of plague.

H.T.
15. ~~XI~~ 9. 98

usual officers.

E. H.T.
~~Press~~

Do not despatch
H.T.
15.9.98

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D.H.
15/9/98

H.T.
17.9.98

Issue.

[ ]

LOCAL AND MUNICIPAL DEPARTMENT.

Memorandum.

Dated the 22 – 8 – 1898.

No. 110 P.

The attention of the President M. C. Madras, and of the Sanitary Comsr. is invited to the great and continuous increase in the mortality in the City of Madras since the beginning of July last, and they are requested to investigate the causes and submit a report to Government as soon as possible. Special inquiries should be made in cases where there has been more than one death in the same house or in the same family within a short interval.

H. T.
22. 8. 98

Lon
22/8/98

To S. C. ✓
Presdt M. C. Madras ✓

Despd 22-8-98

The Madras Mail.
FRIDAY, AUGUST 19, 1898.

The Terrible Mortality in Madras

WE HAVE ON SEVERAL OCCASIONS RECENTLY drawn attention to the terribly heavy mortality that is being recorded week after week in Madras. During last week, for instance, no less than 575 persons died within Municipal limits, which means a ratio of 66 per mille per annum, being nearly 16 per mille per annum above the average of the ten previous years. If the Municipal Mortuary returns are examined it will be found that the number of persons dying in Madras every week is now very nearly *double* what it was at the beginning of June, when the total was 331. The weekly number of deaths fluctuated between that number and 366 from the beginning of June up to the middle of July; and then for the week ending the 22nd July there was a sudden rise to 458, a total which was maintained during the two weeks following. Then, in the next week, ending the 12th instant, the total jumped up to 575. Of these 575, cholera accounted for 71 and "fevers" (that elastic term) accounted for 192, while "other diseases" (that still more elastic term) accounted for no less than 214. It is noticeable, too, that 68 deaths were due to dysentery—the fact being, we suspect, that a number of these cases were really cholera. Be the causes what they may, however, the fact remains that the total number of deaths has become well-nigh appalling.

The curious thing is that the public has apparently by no means realised the fact that the mortality is so extraordinarily high, and is apparently indifferent to the awful state of affairs that the Municipal statistics reveal. We can only presume it is "the deep slumber of a long-decided opinion"—the opinion that the City is in a parlous condition of insanitation and filth and that it is hopeless to expect any vigorous policy of sanitary reform either from the Government or from the Municipality. Such apathy, however, is hardly creditable to the ratepayers, and unless they make their voice heard in some unmistakable way it is pretty certain that the policy of drift will be allowed to continue. Eight years have passed since the last great agitation was set on foot in Madras. The public meeting held in the Victoria Hall in September, 1890, showed that the temper of the inhabitants had been strained to the breaking point: and the Government of the day wisely took warning in time. It was the Governor himself who came forward when it was clearly seen that the public meant business: and it was only on the distinct understanding that something would be done by Government that the agitation was gradually dropped and the strong Committee that was formed relinquished the task it had set itself. That "something" consisted, it may be remembered, in the preparation of a number of reports, but chiefly in the appointment of a sanitary specialist from England to investigate local defects in drainage and water-supply. The specialist came and saw and reported in slow but due course, the public meanwhile waiting patiently for some practical outcome of it all. And apparently it is still waiting patiently; and seems likely to have to wait patiently for many years to come.

The most crying scandal, the Cooum, is in a worse state at the present moment than ever it was in 1890, when the public indignation meeting was held. And Government, dozing in the atmosphere of "the sweet, half-English Nilgiri air" is, it would seem, supremely indifferent to it all. It thinks nothing of providing a lakh and a half of rupees for making the Hobart Park at Ootacamund into a nice playing-ground for its own officials and the Hill Captains. It has no difficulty in producing ten thousand rupees for a new ball-room for our old friend the Leaky Palace. It can find the means for numbers of other *menus plaisirs* in the way of "public" works, including large additions to Government House, Guindy, which is seven miles from the savoury Cooum. But for the river itself it cannot, or will not, find an anna. And it is not as though this filthy *cloaca maxima* of Madras were a charge on Municipal funds, so that the excuse might be given that the Municipality must see to it. The fact is (and the fact is too often ignored or not widely enough known) the conservancy and control of the Cooum pertain to *Government*, and are a legitimate charge on the Provincial P. W. D. Budget. Where the Municipality is responsible is with regard to what goes *into* the Cooum, and we are bound to admit that the responsibility sits but lightly upon it. Another equally and similarly responsible body are the City Police, who apparently make no attempt whatever to prevent the committing of nuisances along any part of that long and twisting length of the river from Government House Bridge up to Chetput Bridge. It is no exaggeration to say that practically the whole of this part of the river is used as an open latrine. If the Commissioner of Police, who has done so much to regulate the traffic in the streets, would depute some Inspectors and a score of constables to regulate the use of the "river," especially in the early morning, he would be doing far more to preserve the safety and promote the comfort of the public than he could ever do in the streets and roads.

Indeed, what is wanted in Madras quite as much as efficient drainage and water-supply schemes is a better system of ordinary

1897

conservancy. The Police, on the one hand, ought to be made to do their legitimate duty in preventing the pollution of roads, streets, tanks, and streams,—a duty which they alone can legally perform, Municipal servants having no powers of arrest. The Municipality, on the other hand, ought by hook or by crook to find the money for providing an efficient system of ordinary conservancy, namely by increasing the number of public latrines (there are at present 220 for a population of 460,000); by increasing its subordinate sweeper and scavenger establishment (attracting the latter men by higher pay, since the present scale does not attract a sufficient number); by providing more rubbish and sewage carts; and last but not least by increasing the Health Officer's supervising establishment, that official having far more work than he can possibly do with a charge that covers 27 square miles, an area as large as that of Paris. All these improvements mean money, of course; but it is expenditure that *must* be incurred if the City is not to continue to be the death-trap that it is at present.

With regard to the whole question of sanitary improvement in Madras a grave responsibility lies on the shoulders of Government. If Government itself cannot, or will not, assist the City in the present hopelessly depressed state of its Municipal finances, it should at any rate no longer delay passing orders with regard to the financing of the schemes that have already been drawn up. To keep everything hanging in suspense while 300 to 400 lives above the normal number are being needlessly sacrificed week by week argues either brutal indifference or supreme incapacity. Government can speak glibly of the efficiency of its famine administration—so efficient that not a single life is lost by starvation. But what has it to say when in its own capital fourteen hundred people are dying every month who would not be dying at all if their surroundings were as healthy as they might be made to be? And we are tempted to quote here the observations of the Rev. Dr. MILLER who presided at the big public meeting in 1890. He, after referring to the similar appalling death-rate that prevailed then, observed:

"Further we should remember this, that all this number of deaths, great and scandalous as it is, is but an index, a feeble index, of loss to the community through evils with which we have failed to grapple; for when a few hundreds die, this is but an external sign of thousands suffering more or less, whose health is damaged, whose energies and tissue are wasted, and who are rendered unable to do the work it is their duty to perform, for this Empire and for mankind. It is not merely the 300 or 400 poor things who pass away from earth, but there are thousands more of us who are very far from what we ought to be in point of good health on account of these same causes which have been fatal to our fellow-citizens."

L. & / 500 2

Very urgent

NOTE FOR THE First Assistant

Kindly put up a note as soon as possible on the following extract from the H. M's letter d/ 21-8-98:—

"Please have the mortality week by week from the beginning of June compared with the mortality in corresponding weeks of several previous years, noting at the same time the rainfall week by week which may conceivably furnish a clue, as a sudden fall of rain or the absence of it may possibly at any time seriously affect the death rate"

This refers to the mortality returns of the Madras Municipality

Lem
22/8/98

H. T.
22 8 98

Please see the note below.

P. R.
3/9/98

V

Note for the Secretary.

A statement, showing the mortality and rainfal in the City of Madras, week by week, from the beginnin of June in the current year as compared with the mortality and rainfall in the corresponding weeks of the nine previous years, is herewith submitted.

Vide page 75 of the report.

2. In para. 53 of his report for 1893, the Sanitary Commissioner, when dealing with the mortality from cholera and its causes in the several districts of this Presidency, states that, although the leading characteristic of the districts affected by the North-East monsoon (of which Madras is one) is certainly the attainment of increasing rates of mortality from cholera after the North-East monsoon, the maximum being

or December, that is to say, in the third or fourth month after the commencement of the monsoon, the City of Madras forms a decided exception to this rule, as the incidence therein becomes most intense in August and September and a decline occurs in the remaining months of the cold season. He also points out that the fluctuation of the sub-soil water level has a great deal of influence over the prevalence of cholera, which exhibits itself in Madras during the subsidence of sub-soil water, subsequent to the fluctuation caused by the south-west monsoon. In para. 72 of the same report, the Sanitary Commissioner states that as regards the sinking of sub-soil water increasing the fever rate, this is brought [illegible] to air

Vide para. 59 of the Sanitary Commissioner's Report for 1893. (page 77)

Vide page 101 - ibid -

influence on layers of soil formerly kept in a state of quiescitude by saturation; that of this, Madras is a good example; that in Madras, each considerable variation of normal rainfall has produced an appreciable effect upon the deathrate from fever and that in the years 1890 to 1893 the scanty ra fall, pari passu with the fall of the sub-soil wate induced by it, (which, how ever, has not been great owing to the peculiar conditions of the site of Madras in respect to sea press ure) has caused a large increase in the num ber of deaths from fever. In this connection atten tion is invited to Diagra N° XIII printed on pages 100-101 of the Sanitary Co missioner's report for 189

3. In his notes on the inspection of the town of Madra embodied in G. O. N° 18

dated 8th January 1895, the
same officer after remark-
ing on the difficulty at-
tending the surface drain-
age of the town and its
neighbourhood, owing to
the very small gradient
of the city towards the sea,
arrives at the following
conclusions about the
cause of the high mortality.—

27. *What are the conditions which affect the rate of mortality from year to year and month to month?* I have sufficiently proved in paragraphs 4 to 16 that the soil and sub-soil of Madras are highly charged with organic matter. If further proof be required of my statement, I appeal to the revelations made during the borings by Major Tulloch, and during the work effected in laying pipes by Mr. Woolley. If this be granted, and the peculiar conditions incidental to the sub-soil water be also admitted, it would but remain, in view of the universally acknowledged influence of heat, moisture and organic matter, upon the growth of microbes, to study fluctuations of the water level in connection with rainfall and temperature. The connection between these conditions and disease prevalence in Madras is very marked. Thus, if the question of cholera be considered, it will be found that whilst in other districts chiefly influenced by the north-east monsoon, the greatest period of prevalence of cholera is in the months of December and January, the typical period for Madras is in the months of August and September. Again, whilst in other parts of the southern portion of the Presidency the cold-weather months are those when most deaths from dysentery and diarrhœa occur, in Madras it is not so; here, again, the principal months are August and September. The same also is true of fevers. In these months also, the mortality of children between one and five years of age becomes greatest. The facts referred to in this paragraph are illustrated by diagrams F. G. H. I.

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Vide para 30 of the Inspection notes

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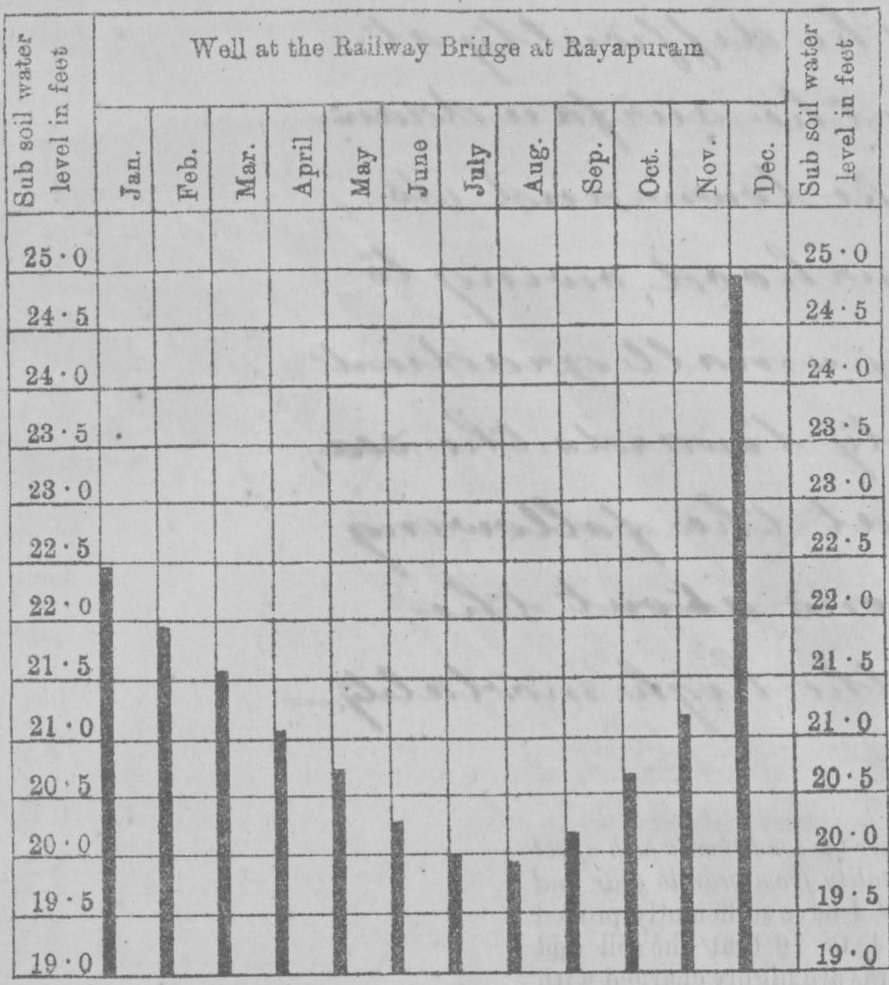

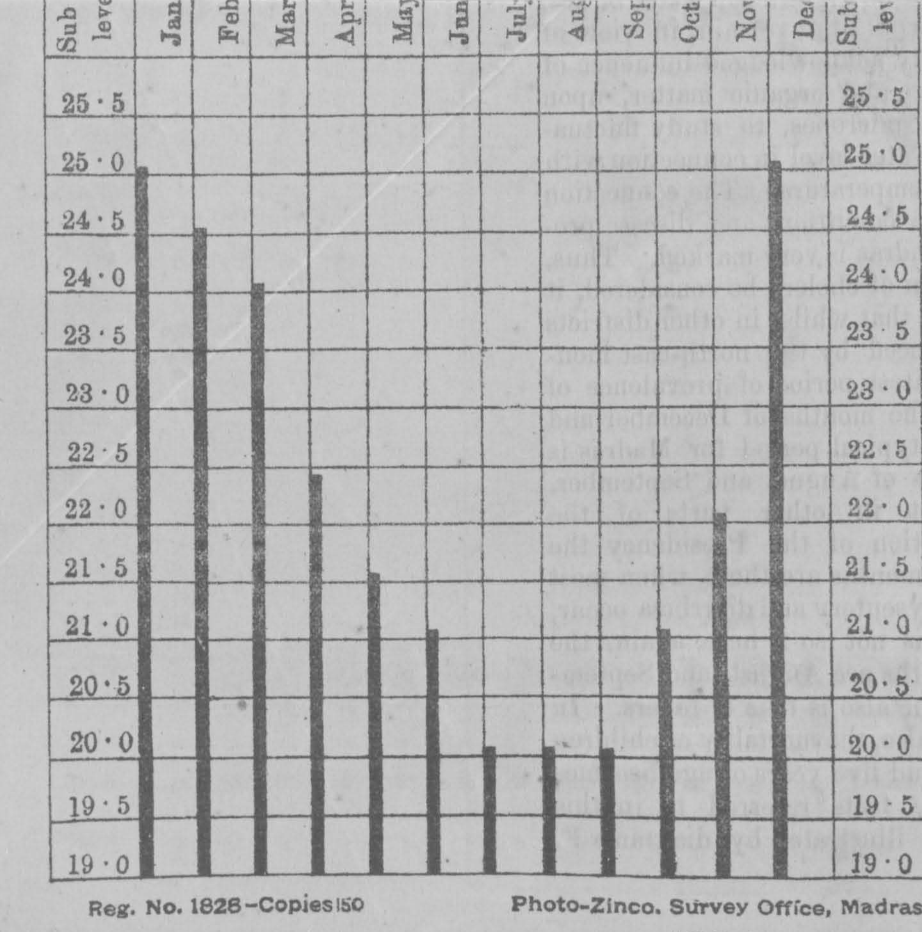

Reg. No. 1828–Copies 150 Photo-Zinco. Survey Office, Madras.
1895

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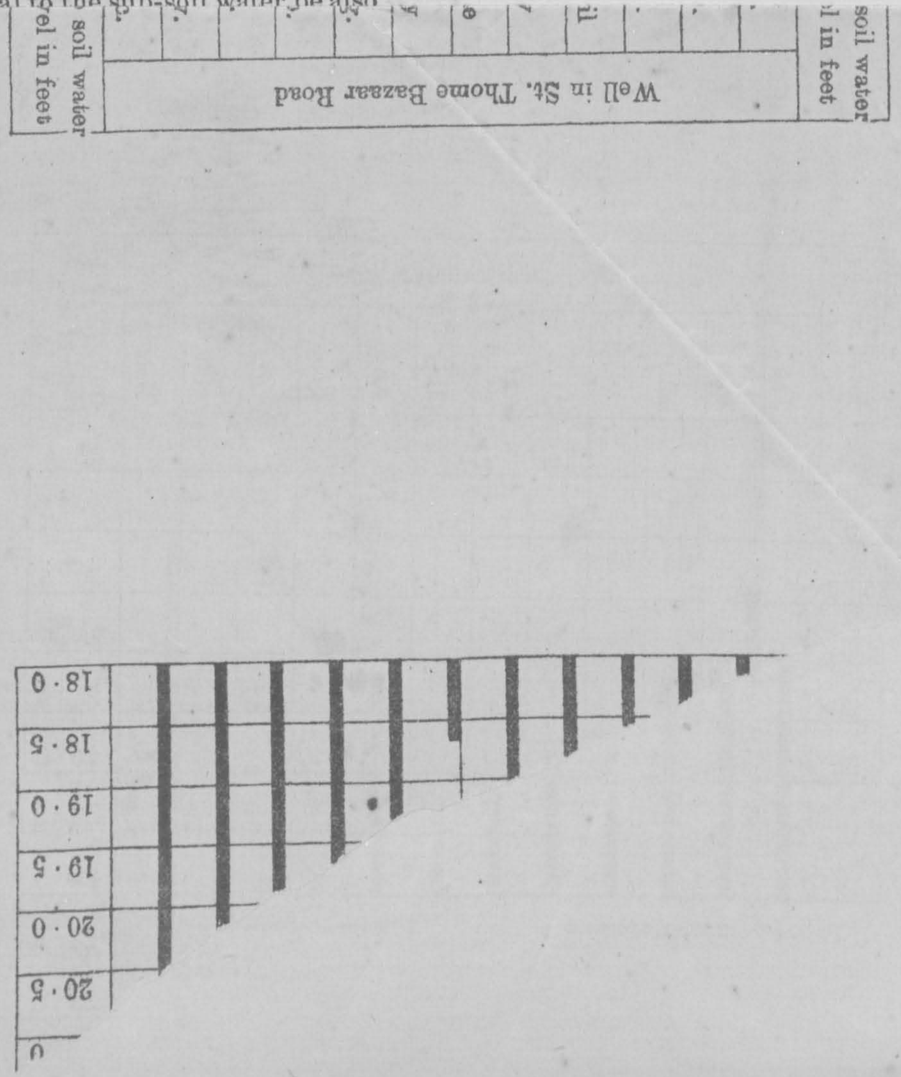
dated 8th January 1895, the same officer after remarking on the difficulty attending the surface drainage of the town and its neighbourhood, owing to the very small gradient of the city towards the sea, arrives at the following conclusions about the cause of the high mortality.—

Vide para 3 of the Inspection notes.

" 27. *What are the conditions which affect the rate of mortality from year to year and month to month?* I have sufficiently proved in paragraphs 4 to 16 that the soil and sub-soil of Madras are highly charged with organic matter. If further proof be required of my statement, I appeal to the revelations made during the borings by Major Tulloch, and during the work effected in laying pipes by Mr. Woolley. If this be granted, and the peculiar conditions incidental to the sub-soil water be also



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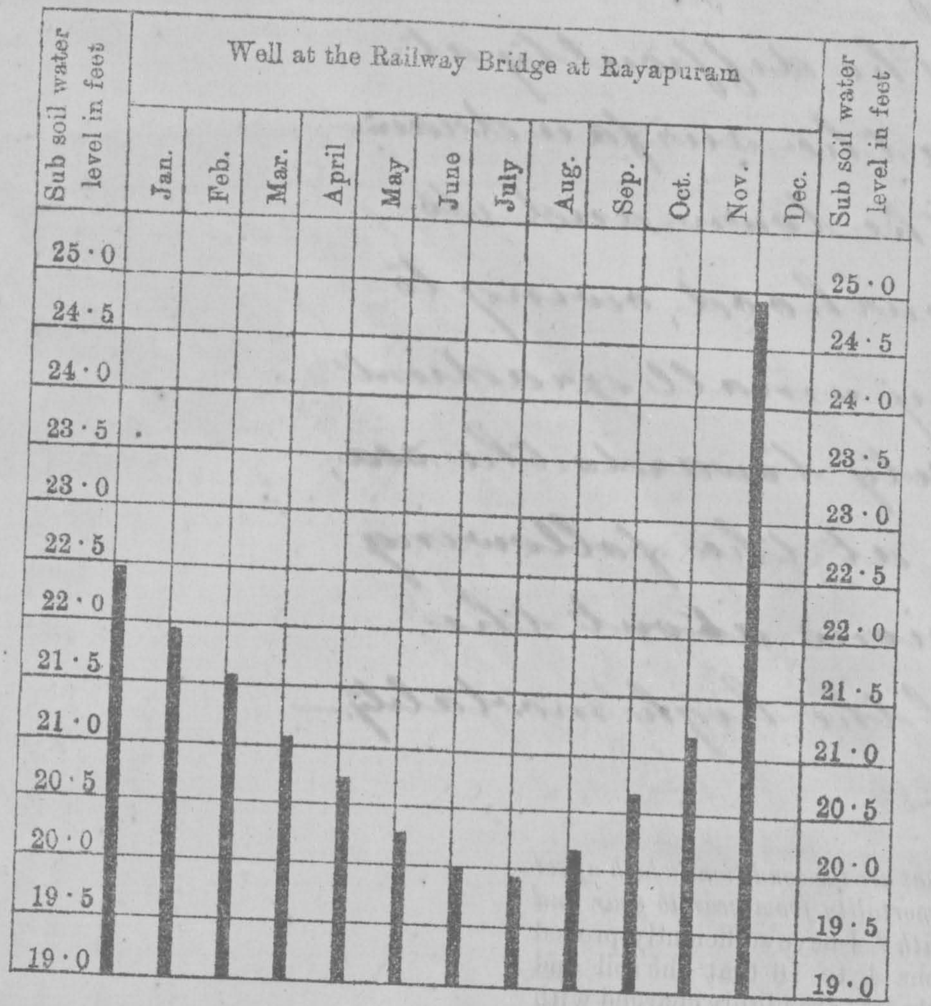
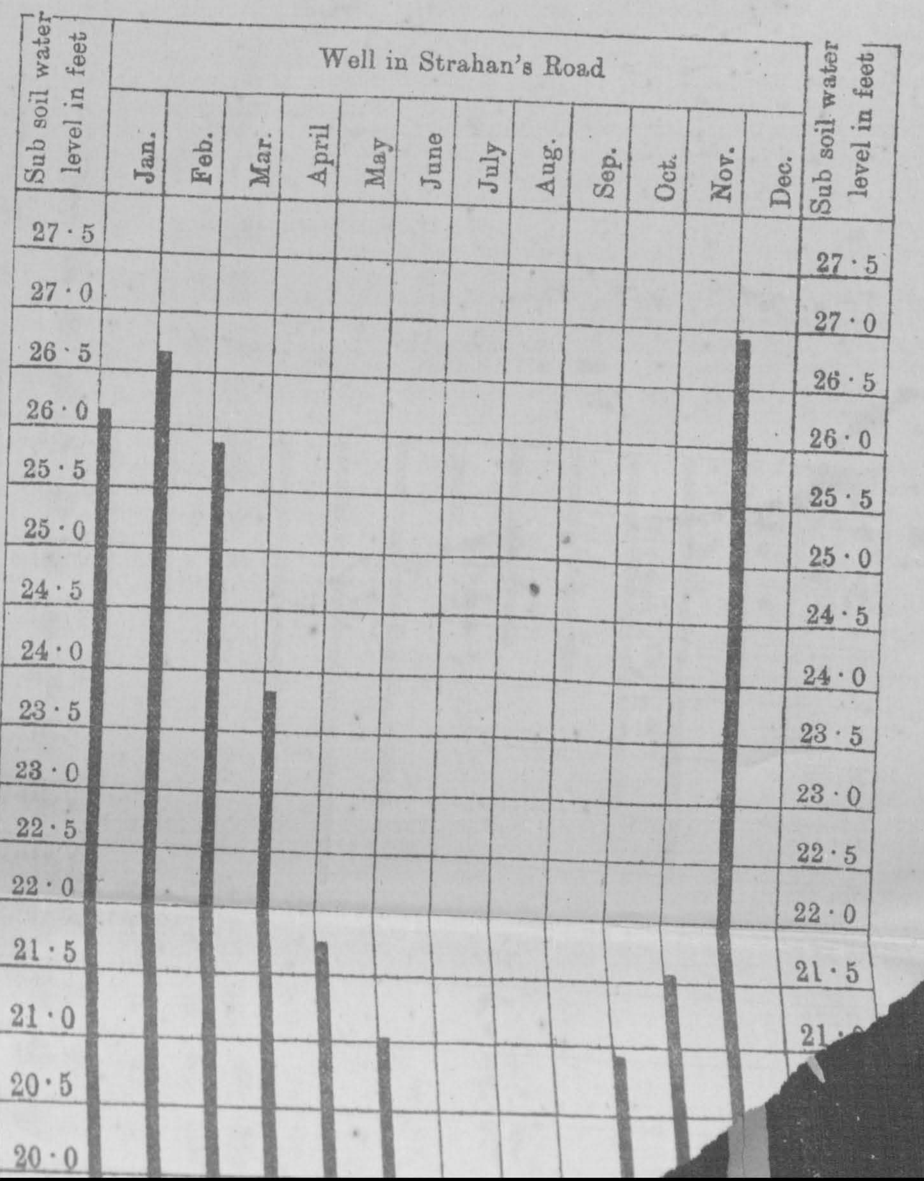
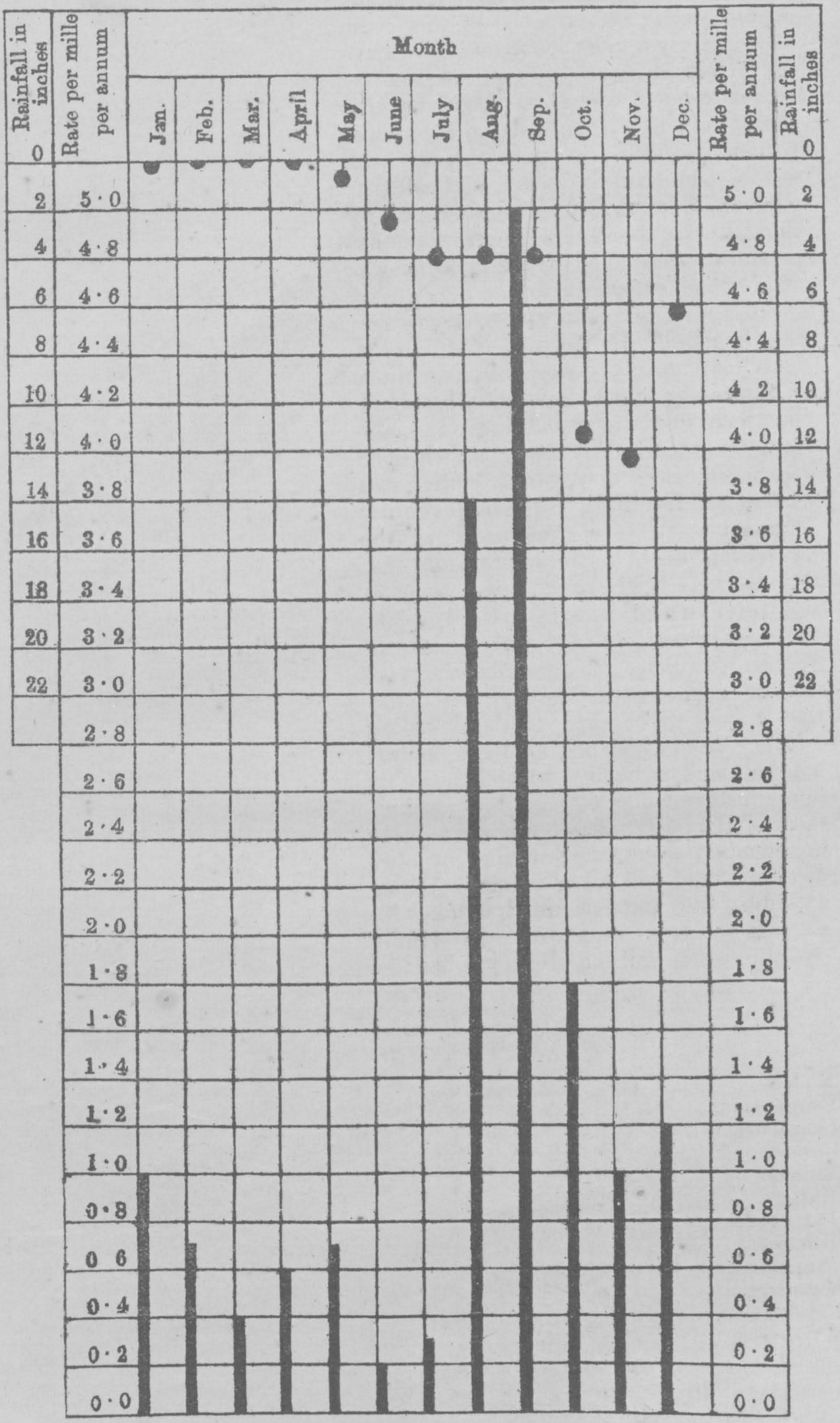




F AVERAGE MONTHLY DEATH RATE FROM CHOLERA CALCULATED FROM THE STATISTICS OF 1882-92



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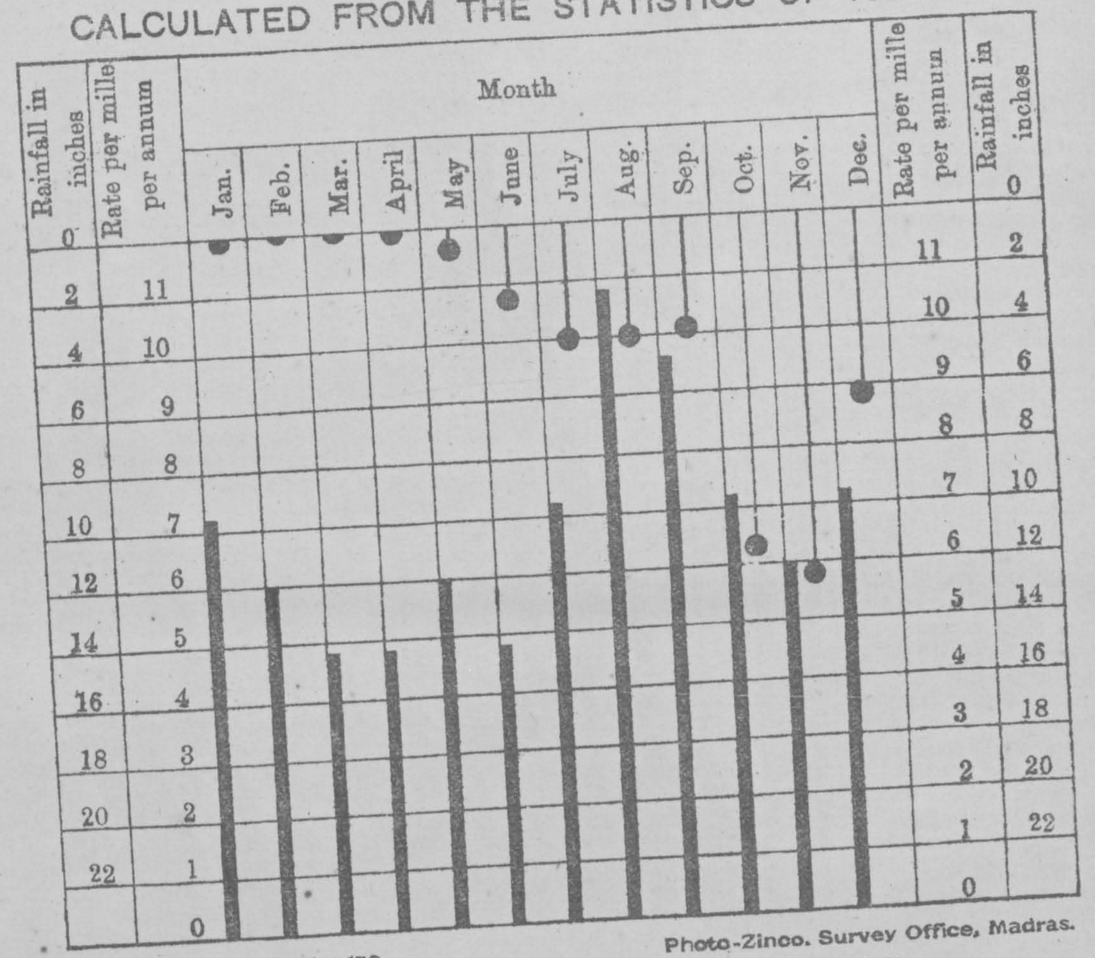
1895

G AVERAGE MONTHLY RATE FROM DYSENTERY & DIARRHŒA CALCULATED FROM THE STATISTICS OF 1884-93



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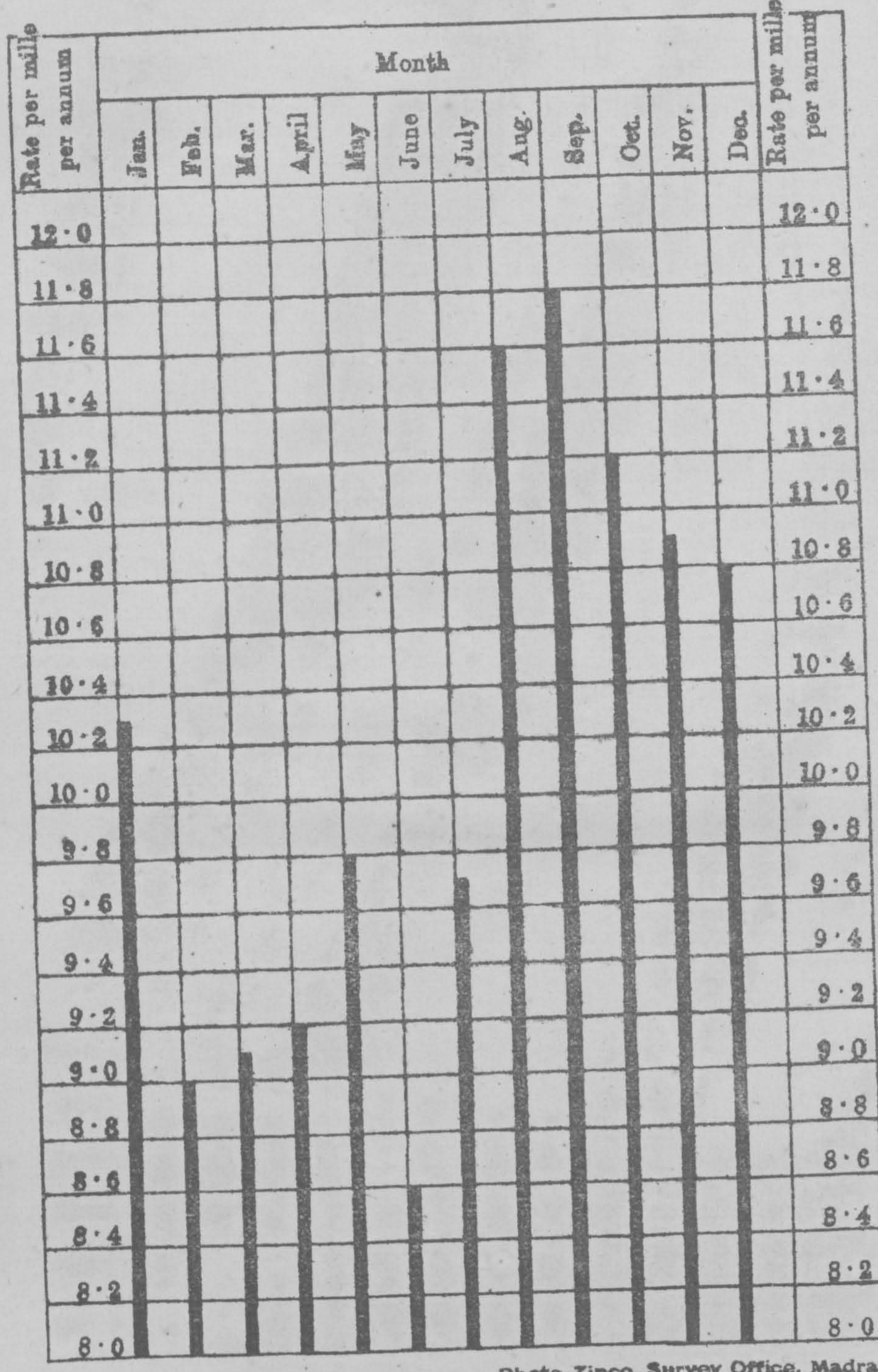
H AVERAGE MONTHLY DEATH RATE FROM FEVERS
(CALCULATED FROM THE STATISTICS OF 1882-92)



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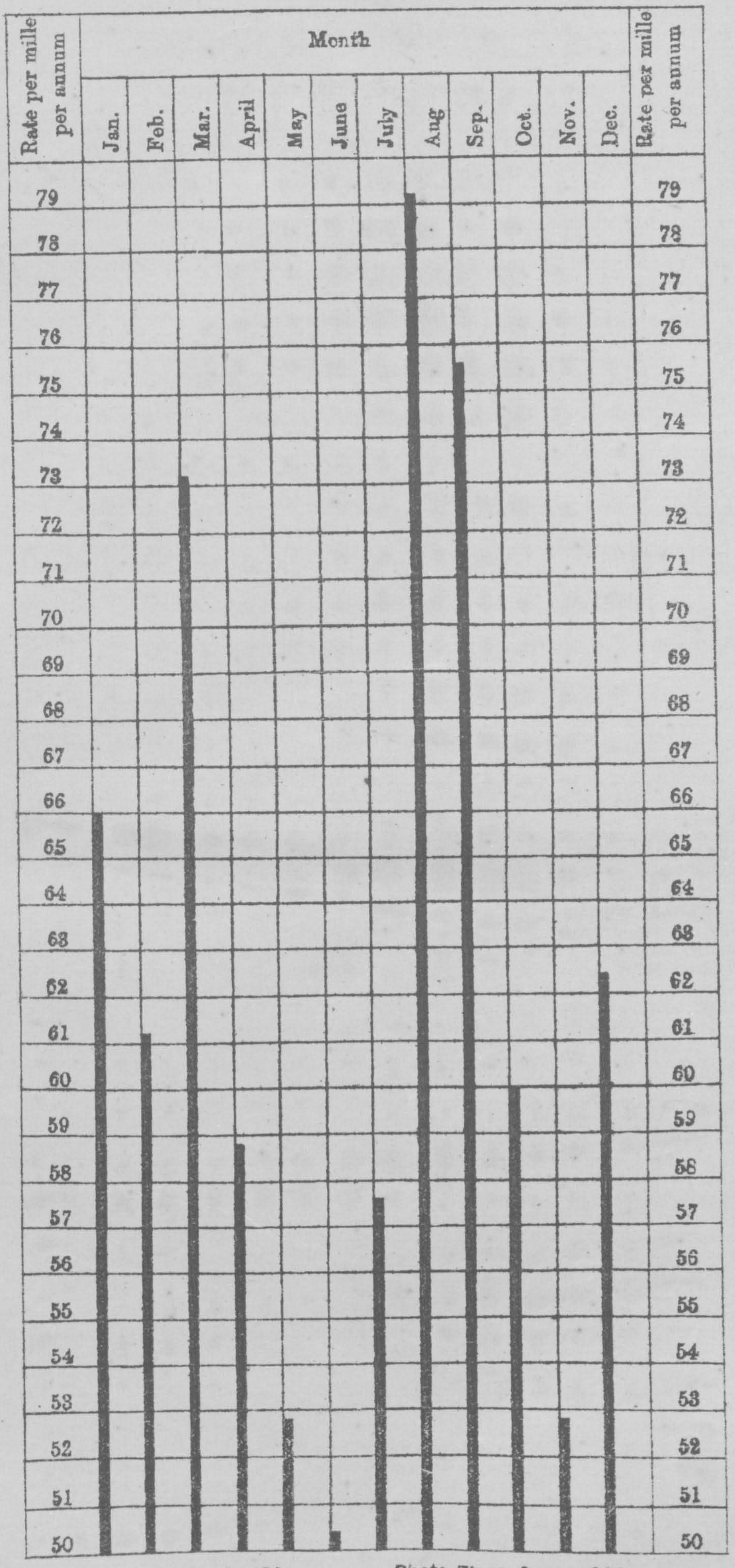
AVERAGE MONTHLY DEATH RATE OF CHILDREN BETWEEN 1 & 5 YEARS OF AGE CALCULATED FROM THE STATISTICS OF 1882-92



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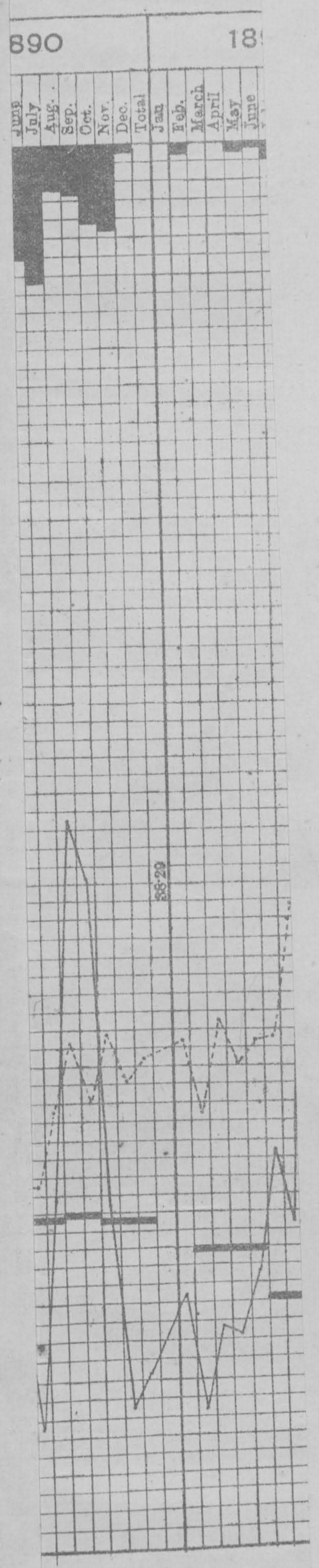

28. Now if diagram C be examined, it will be found that the period which gives rise to such marked mortality is that immediately following the greatest fall of the sub-soil water level, and heralds a commencing rise. Taking the rainfall shown in diagram F as typical (a ten years' average) it is found that consonant with the fall of sub-soil water, there is going on a slight moistening of the upper layers of soil by rainfall during the south-west monsoon; but this is evidently not sufficient to cause an immediate rise of sub-soil water. Hence, whilst the upper layers of soil in which microbic life must be most active have given to them an amount of water sufficient to moisten them, this may yet not be sufficient to choke the pores; the sub-soil water is also in the act of receding, or is in a state of fluctuation tending to a rise after its greatest fall, thus leaving to air contact layers of moist earth that is rich in organic filth. Hence, by displacement of air following diurnal changes of temperature, by aspiration in warm houses during the nights, by the influence of winds striking the ground at right angles, and by displacement by rain, air charged with foul gases and disease germs may reach food, water, and the respiratory and digestive passages. Further, it is necessary to remember another condition in which the sinking of the sub-soil water cannot fail to exhibit its influence, namely, in regard to the use by the people of shallow well water, or, in other words, sub-soil water. This water as it sinks must take with it much impurity, and as it recedes the "draw" upon distant and impure ground must become more marked.

29. These remarks would, of course, be greatly strengthened if there could be brought in evidence a period of great fall of sub-soil water synchronous with marked increase of mortality throughout Madras. This evidence, unfortunately in one respect, is easily enough secured.

The north-east monsoon of 1890–91 was a complete failure in Madras, the south-west monsoon of 1891 was also a complete failure, and both the north-east and south-west monsoons of 1891–92 were partial failures. The following were the rates of mortality from fever and "all causes," respectively, upon the estimated population during the three years in question, as contrasted with the three previous years :—

Years.	Rate of fever deaths.	Rate of deaths from all causes.
1888	8·3	37·4
1889	10·2	42·0
1890	11·5	42·4
1891	16·6	58·6
1892	15·2	46·0
1893	14·7	41·1

30. Coincident with the disturbance of rainfall and consequently of sub-soil flow, the price of food rose. ~~No marked dis-~~

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"31. It must be understood in connection with these remarks that I do not regard the food scarcity as the direct cause of increased mortality. The increased prevalence of disease, and especially of fever, must be ascribed to the fluctuation of the sub-soil water acting upon the special causative agents in the soil; the food scarcity could only have acted indirectly, in that persons affected had fewer luxuries during their illness and, perhaps, were more readily infected, owing to the normal resistance being lowered by less perfect nutrition.

32. Granted it is shown there was diminished rainfall, can it also be shown that the sub-soil water exhibited any marked sympathy with it? I have ascertained that a careful record has been maintained of the level of the "Seven wells" water. The level of the wells out of use has been utilized. It is probable (as there is a steady withdrawal of water from the wells in their neighbourhood) that conditions may be exaggerated, but the result must represent sufficiently correctly the sub-soil water level during the period mentioned. The information thus gained has been utilized so as to frame diagram J, which indicates the connection between the sub-soil water level, rainfall, price of food, and mortality during a series of years. The results seem to me to illustrate my contentions in a complete manner."

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4. Again in his report explaining the large mortality from fever in Madras since 1891, Dr. King after discussing the various theories which have from time to time been started n the point, arrives at he following conclusions:-

"12. To sum up, therefore, I hold that the soil of Madras contains the malarial germ; that propagation of this germ is favoured by organic matter in the presence of oxygen and moisture and moderate heat; that the soil of Madras is rich in filth (organic matter) and has in normal seasons a high sub-soil water-level; that a departure from its normal level of the sub-soil water, and fluctuation due to scanty monsoons from 1889 to 1895, resulted in inducing air circulation in soil usually filled with water, and thus placed the malarial germ under favourable conditions for propagation; that the increased introduction of "house-connections" with the public ater-supply in imperfectly-drained premises, and in an imperfectly-drained town, has ered moisture of the superficial soil and consequent growth of the malarial germ."

Vide para 3 of fo $\frac{1475 L}{13-8-98}$ U

5. The conditions which are referred to in para. 29 of Dr. King's notes on the inspection of Madras, as having existed previous to 1891 and influenced the high mortality in that year, ~~have~~ also existed

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H.T. 5.9.98 F.R. 3/9/98

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Rain fall in the week ending 3rd June 98 – Inch 1.

" " 10 June 98 – C

" " 17. " –

" " 24 " –

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before my departure for Chingleput this evening will delay preparation of Rules & I thought you would like in the meantime to be assured that the probability is that there is no plague in Madras, and that if there be undiscovered cases it is extremely unlikely they are in sufficient number as to have in any appreciable manner affected the mortality rate.

Yours faithfully

W. G. King.

enquiry to establish the facts and therefore I do not advance them as beyond contradiction, but the truth of this increase of mortality seems to be in the persistent false representations of the Municipal authorities as to the existence of cholera (1) Being afraid of disinfection, they have freely declared deaths from cholera as due to fever and dysentery (2) There is a slight accentuation of malarial fever prevalence, as a result of meteorological and subsoil water conditions acting on a filthy soil (3) Dearness of food during a prolonged period has resulted in an unusual proportion of ill-nourished children (4) Immigration from Nellore, Pumeri and slightly other adjoining Taluqs has affected the number of the population if not its average health. (5) The figures quoted ~~[illegible]~~ as to mortality are ~~[illegible]~~ larger than in reality as no allowance for increase over the Census population has been made.

These facts will be duly represented officially

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" 31. It must be understood in connection with these remarks that I do not regard the food scarcity as the direct cause of increased mortality. The increased prevalence of disease, and especially of fever, must be ascribed to the fluctuation of the sub-soil water acting upon the special causative agents in the soil; the food scarcity could only have acted indirectly, in that persons affected had fewer luxuries during their illness and, perhaps, were more readily infected, owing to the normal resistance being lowered by less perfect nutrition.

32. Granted it is shown there was diminished rainfall, can it also be shown that the sub-soil water exhibited any marked sympathy with it? I have ascertained that a careful record has been maintained of the level of the "Seven wells" water. The level of the wells out of use has been utilized. It is probable (as there is a steady withdrawal of water from the wells in their neighbourhood) that conditions may be exaggerated, but the result must represent sufficiently correctly the sub-soil water level during the period mentioned. The information thus gained has been utilized so as to frame diagram J, which indicates the connection between the sub-soil water level, rainfall, price of food, and mortality during a series of years. The results seem to me to illustrate my contentions in a complete manner."

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D.O. No 184

960—1-7-97.

No.

Office of Sanitary Commissioner,

Madras, 13-9-1898.

SECRETARY TO GOVERNMENT
15 SEP 1898
LOCAL & MUNICIPAL DEPARTMENT

Dear Mr Tremenheere,

It is desirable I should inform Govt. that notwithstanding a diligent house to house search in Madras and enquiry from various sources I have not been able to detect any instance of plague, or modified plague. A number of patient

but as my departure for Chingleput this evening will delay preparation of Statistics &c, I thought you would like in the meantime to be assured that the probability is that there is no plague or [illegible] in Madras, and that if there be undiscovered cases it is extremely unlikely they are in sufficient number as to have in any appreciable manner affected the mortality rate.

Yours faithfully

W G King.

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H.T.
5.9.98.

V.R.
3/9/98

Vide para 3 of f.o $\frac{1475 L}{13-8-98}$

*
Rain fall in the week ending 3rd June 98 – 1.78 Inches
" " 10' June 98 – 0.13
" " 17 " – 0.62
" " 24 " – 0.21

5. The conditions which are referred to in para. 29 of Dr. King's notes on the inspection of Madras, as having existed previous to 1891 and influenced the high mortality in that year, ~~have~~ also existed in the past year, during which ~~both the south-west and~~ the north-east monsoon was a failure. The high mortality in the current year is, therefore, probably due to this circumstance and to the sudden and isolated showers* in the beginning of June and the succeeding months, which while they were apparently insufficient to affect the sub-soil water, imparted activity to the disease germs by rendering the upper layers of earth moist. The high price of food grains has perhaps also something to do with this.

H. T.
5. 9. 98

V. R.
3/9/98

Statement showing the mortality and rainfall in
those in the corresponding weeks of the previous nine years.

Week ending	1898						1897						1896						1895						1894								
	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Tot			
3rd June	1	"	115	30	173	319	"	4	116	30	141	291	"	1	116	41	171	329	"	"	112	21	125	258	"	"	78	22	132	232	"		
10th Do	1	"	116	29	185	331	2	5	75	28	164	274	2	1	131	38	142	314	"	"	113	23	175	311	"	"	103	26	126	255	"	1	10
17th Do	"	1	104	52	160	317	1	2	105	25	166	299	1	2	111	33	136	283	"	"	125	27	154	306	"	"	90	28	123	241	"	"	103
24th Do	"	1	122	47	184	354	1	"	112	35	147	295	"	3	108	37	152	300	2	"	110	32	153	297	"	"	90	22	118	230	"	"	115
1st July	"	1	157	36	197	391	2	2	110	35	173	322	"	1	110	38	144	293	1	"	112	27	139	279	"	"	117	28	132	277	1	1	123
8th Do	"	1	152	57	180	390	"	4	84	25	157	270	3	"	85	42	158	288	"	"	103	30	148	281	"	"	92	30	146	268	"	"	105
15th Do	13	1	119	57	176	366	"	1	109	39	155	304	"	"	113	40	156	309	1	"	96	37	161	295	"	"	105	38	157	300	"	"	119
22nd Do	30	1	150	76	201	458	8	4	92	28	149	281	"	2	102	29	137	270	1	"	114	42	147	304	"	"	107	47	136	290	1	1	113
29th Do	36	1	133	91	197	458	2	"	102	30	131	265	1	"	103	37	148	289	1	"	135	56	171	363	"	"	121	39	141	301	"	"	151
5th August	38	"	129	87	207	461	7	2	105	52	175	341	2	1	127	45	157	332	4	"	133	66	197	400	"	"	143	64	143	350	"	"	154
12th Do	71	1	192	86	225	575	9	6	123	49	163	350	1	1	105	55	188	350	1	"	154	101	224	480	"	"	114	75	129	318	"	"	16
19th Do	91	5	199	84	213	592	5	2	129	49	129	314	2	"	134	65	173	374	3	"	180	86	180	449	"	"	106	53	139	298	"	1	
26th Do	77	2	202	108	214	603	7	3	141	46	164	361	"	"	110	55	183	348	8	"	160	114	197	479	"	"	106	61	168	333	1		

CE FOR THE Secretary

The F.A. has submitted
the causes of high
Madras. It is submitted
ing telegram may
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ts early
hat regarding
g.
for this year
a table, at
se of /91:
increase of
to be taken
9 98

e Madras … tality, week by week, from the beginning of June 1898 as compared wit…

…se… r

	Mortality																														Rainfall									
	1893						1892						1891						1890						1889															
	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	Cholera	Small-pox	Fevers	Dysentery & Diarrhoea	All other causes	Total	1898	1897	1896	1895	1894	1893				
			87	44	183	314	7	"	107	67	155	336	4	3	100	61	192	360	"	"	93	31	162	286	3	2	131	73	179	388	1.78	2.12	"	"	1.24	"	0.05	"		
10"				41	146	297	5	"	116	39	137	297	21	"	112	70	193	396	"	1	90	30	129	250	4	2	113	57	144	320	0.13	0.89	"	"	0.16	0.69	1.31	0.18	1.14	
17"					180	325	7	2	106	45	119	279	2	"	141	72	174	389	"	"	90	32	131	253	3	"	113	61	161	338	0.62	0.19	1.15	0.17	0.14	"	1.94	"	0.09	0.44
24"					150	298	2	1	92	35	121	251	"	"	115	82	191	388	"	"	84	41	137	262	1	"	82	50	179	312	0.21	0.01	0.07	0.72	"	0.43	0.66	"	0.22	0.03
1" Ju					153	322	2	"	100	48	146	296	2	"	107	52	162	323	"	"	81	38	159	278	"	"	101	50	151	302	"	"	0.33	0.05	"	0.16	0.06	0.19	1.47	0.16
8"					165	327	1	1	99	52	167	320	6	"	128	62	178	374	"	1	88	51	195	335	1	"	90	59	124	274	0.49	0.33	0.18	1.86	0.35	3.12	2.77	0.06	0.21	0.32
15"					181	382	4	"	129	85	180	398	4	"	80	50	170	304	10	"	93	61	154	318	1	"	98	65	160	324	0.73	0.03	"	2.30	0.85	0.45	0.29	0.15	0.29	2.06
22"					167	372	5	"	139	81	152	377	5	"	99	51	155	310	17	1	86	62	165	331	1	1	98	69	156	325	1.81	1.56	1.58	1.03	0.69	0.14	1.37	0.12	3.34	0.02
29"					191	420	15	"	159	75	155	404	2	"	102	57	174	335	12	"	102	80	177	371	1	1	82	68	157	309	0.29	0.45	0.28	0.20	1.58	1.76	1.08	0.05	2.57	3.05
5" A					158	402	28	1	189	116	327	561	16	1	108	60	197	382	21	"	101	92	189	403	"	"	106	74	143	323	2.92	1.34	1.77	1.39	1.81	0.07	1.17	0.43	1.20	0.35
12"						488	42	"	197	136	201	576	61	"	111	93	176	441	46	4	112	76	200	438	"	"	87	69	163	319	0.26	0.56	2.32	1.65	1.35	0.29	1.21	0.37	0.08	0.44
19"						455	24	1	205	127	240	597	166	"	141	139	212	658	129	1	122	125	1[illegible]6	573	"	"	96	67	163	326	2.49	0.72	"	0.70	0.36	0.64	2.67	0.11	0.46	2.03
26"						439	34	2	191	119	193	539	178	"	176	210	246	810	105	2	127	122	239	595	3	"	87	78	170	338	0.34	2.95	1.95	0.12	1.89	0.12	5.62	0.16	0.36	1.42

…submitted

of high

It is submitted

may

L. & M.
500—25-3-98.

NOTE FOR THE Secretary

The F.A. has submitted a note on the causes of high mortality in Madras. It is submitted herewith.

The following telegram may be sent to the Sanitary Commr & Resident, M.C. Madras

"G Govt requests early [illegible] submission report regarding high mortality Madras."

H.T.
5-9-98.

[illegible]
5/9/98

H.M. The figures in the table for this year are not as bad as those of 191: & of course the increase of population has to be taken into account.

H.T.
5-9-98

Despd 5/9/98

Desp — ordinary

Let H.E. see the note & a[illegible] the reports

6/9/98

H.E. The Governor

H.T.
7-9-98

Seen.
A.S.H.
7.9.98

Desp telegram sent to H. M. [illegible]
5/9

L & M.

Sanʸ Commʳ's telegram about the health of Madras City.

For perusal.

H.T.
7.9.98.

✓ Cho 1627

H.M.

H.E. The Governor.

KW
7/9/98

A.G.
7.9.98

await report

8/9/98

8/9/98

Sec. M.

Sec: Com: Dr King's rep. about the health of Madras.

For perusal

2.9.98

For H.E. the Governor

[L. & M. / 200—17-6-97.]

Cho. 1652 P.

NOTE FOR THE Secretary

The President, M.C. Madras forwards without any remarks of his own, the Health Officer's report dd 2-9-98 on the high mortality in Madras. Dr. King has had no time to make any special investigation and has sent on the report as a telegraphic reminder was sent for it. He rejoined his appointment from leave on the 3-9-98. He is now making special inquiries.

2. The Health officer submits comparative statements to show that Madras is generally unhealthy during this ~~present~~ part ~~season~~ of the year. He ascribes the present high mortality to Cholera and to malarial fever due to insanitary ~~and~~ damp and crowded dwellings and to want of proper drainage. He states that nearly all the houses in which more than one death has occurred since the 1-7-98 have been visited during the past few days

(1) H.M.
(2) H.E.

⊕ I have just found this in a file below, after writing my remarks
H.S.

⊕

An office note giving a good deal of infn. on this subject was sent Home the other day — It should have been put up herewith — It referred, I remember, to some old reports of Dr. King's, in which he attributed the rise of mortality in Madras in, or about, the months of July & August to the fact that the water level in the subsoil falls about this time & so sets free to atmospheric action & distribution morbid elements at other times under water, the effect of which is intensified when in, or about, June slight falls of rain take place, sufficient to provide the moisture which is a fertile nidus for the propagation of such elements, but not sufficient to swamp them under the rising subsoil water; and, I think, he pointed out that these effects were peculiarly noticeable when the rainfall of the early months of the year, and of the preceding N.E. monsoon, had been slight. Now this has been the case in the current year. The N.E. monsoon of 1897 was very light, & the rainfall of the earlier months of 1898 was almost nil. So it was in the years 1891 & 1892 referred to by the Health officer. The ~~N.E.~~ rainfall ~~monsoon~~ of the N.E. monsoon (Oct to Dec) of 1890 was very light, only 9·27 inches against an average of 29·50 inches; and in the first half of 1891 there were only 1·31 inches of rain against an average of 6·41. The N.E. monsoon of 1891 gave 23·58 inches but of this 13·42 inches were in October & only 10·16 in Novr. & Dec against an av: of 18·50 for those two months; and this was followed by an almost complete drought in Jan — May, 1892, in which 0·82 only fell against an average of 4·30.

It seems to me that these facts sufficiently account (together with the present outbreak of cholera) for the high rate of mortality which has recently prevailed in Madras. What is, of days by a hospital assistant, who has reported that the remaining occupants are healthy. Where practicable, the Health officer and the Sanitary Inspectors and Overseers have been endeavouring to inspect the bodies of all persons who die of fever or any other undefined illness. The Health officer is of opinion that plague has not yet gained an entrance into Madras, but he points out that the machinery for accounting for deaths is so faulty that it would be quite possible for several cases to occur without the knowledge of the municipal authorities.

3. For determining the cause of death, the registrar who is a clerk on Rs 20 has to trust to what information the relations or attendants of the deceased choose to give, or to the information obtained by a peon on Rs 7 a month posted at the burial ground. The majority of the people have a very limited knowledge of symptoms and vocabulary of medical terms, and a case was

Course, if Dr King's theories are correct, which I incline to think they are - I see therefore no special ground for alarm at present. The high rate of mortality always prevailing in Madras is a lamentable fact, & can no doubt only be removed by measures of the nature of those advocated by the H.O. - But that is another question, separately under consideration

HS

I gladly accept the Hon. Sir H. Bliss's views of the causes of the high mortality in Madras. I remember high mortality in other places, under like conditions.

A.E.H.
13.9.98

N.B. Possibly it might re-assure the public, - to let Dr King's and the Madras Municipal Health Officer's opinions, - be generally known.

A.E.H
13.9.98

I did not see this - ~~Atta~~ Let me see the paper -

HS

Put up for
Hon
HS
15.9.98

was reported a few days back in the newspapers in which a man was told ~~[illegible]~~ by the municipal servants that he had done a foolish thing in reporting an infectious disease and thereby giving himself and the municipal servants the trouble of disinfection. It is clear that under such circumstances the classification of diseases in the municipal death returns are of no value. The Health Officer therefore suggests that no burial or cremation should be allowed without a certificate from some medical practitioner whether European, native, Hakim or ~~Vaidian~~ Vydian; and that persons too poor to pay a fee might obtain gratis certificates from practitioners appointed for the purpose and paid by the Municipality. Dr King considers that the introduction of the compulsory production of medical certificate of cause of death is essential.

4. This recommendation is, in effect, to extend to the City of Madras, Addl Mufassal Regulation 16 (Page 34 of the Plague pamphlet). The Hon Cl

4

Sir George Moore and the Hon'ble Henry Bliss have already expressed themselves in favour of this Course. H.E. is against it and ~~[illegible]~~ & is of opinion that we must be "Content with the provisions of the "Registration of Deaths Law". Sections 397, 399, 400-402 of the Municipal Act deal with the registration of deaths.

5. The grant of a medical certificate as to the cause of death implies the inspection by a medical man of the body of the deceased during his illness or after his death. To compel the production of a certificate is therefore to compel the ~~compulsory~~ medical inspection, and the Govt. of India has lately ruled that the latter should not be enforced under the E. D. Act but should be left optional.

Lumy
9/9/98

4

Flag H.

No – only in case of plague being actually present in the City – A general measure of compulsory medl. certificates in case of deaths would be impossible, at least for many years to come.

HD
12/9/98

Yes.
A.S.H
13.9.98

Flag G.

Local & Munl. (1898) Department.

CURRENT No. 6278

Telegram

From The Sanitary Commissioner
Madras

Order

No.

Dated 6-9-1898

Received 7-9-1898

Registered 7-9-1898

Enclosures

Spare copies.

SUBJECT.

Stating that the Health officer's report on high mortality in Madras has been received and that the increased mortality appears to be seasonal

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

C. No. 1627/R

INDIAN TELEGRAPHS.

Code Class. DS

Monthly Number. 453

To (Office) Ootacamund			From (Office) Madras Ft St George	
Words. 50	Day. 6	Hour. 14	Minute. 57	Official Instructions. Dfo.

To (Person) Secy to Govt Local and municipal Dept

From (Person) Sanitary Commr for Madras.

Health officers report received yesterday forwarding today he considers increased mortality seasonal in conjunction with recognized vile sanitary conditions and not to plague this may be accepted shall make a few further enquiries.

Send to H.M.

32 Word Form.

Recd. from	LN.	Sent to	LN.	
At Hrs. Mts. by		At Hrs. Mts. by		Telegraph Master.

C G P—No. 770 T—19-3-97—4000000.

OOTACAMUND 6-9-98

Local & Munl. (1898) Department.

CURRENT No. 1621

Telegram

From The President, Municipal Commission Madras

Order

No.

Dated 6-9-1898

Received 6-9-1898

Registered 6-9 1898

Enclosures

Spare copies.

SUBJECT.

Stating that the report on high mortality in Madras has been submitted through Sanitary Commissioner on the 3rd September 1898.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

C.N. 6218

INDIAN TELEGRAPHS.

Code Class. P.

Monthly Number. 436

To (Office) Ootacamund

From (Office) Madras

Words. 24 Day. 6. Hour. 13 Minute. 23 Official Instructions.

SECRETARY TO GOVERNMENT
6 SEP 1898
LOCAL & MUNICIPAL DEPARTMENT

To (Person) The Secretary To Govt. Local and Municipal Dept.

From (Person) President Municipal Commission

Report on high mortality submitted through sanitary Commissioner third instant

OOTACAMUND 6-9-98

32 Word Form.

Recd. from L.N. At Hrs. Mts. by

Sent to L.N. At Hrs. Mts. by

Telegraph Master.

O G P—No. 779 T—19-3-97—4000000.

OFFICE OF SANITARY COMMISSIONER WITH THE GOVT. OF MADRAS
No. 2914 S
5 SEP. 98

Local & Munl. (1898) Department.

CURRENT No. 1652

UNDER SECY. TO GOVT. PUBLIC
8 SEP. 98

C. No. 1652 P

Order

No. 1950/S

Forwarded to Government with reference to the telegram from this office of this date. The introduction of compulsory production of Medical certificate of cause of death, as suggested by the Health officer, is essential under the provisions already decided upon by Government. Further investigation by actual examination of cases is necessary before a final decision can be arrived at, as to the cause of increased mortality. This is surrounded with difficulties, and cannot be managed without some delay. A statement will be forwarded as quickly as possible.

W G King

Surgeon Lieut Col
Sanitary Commr. for Madras

Office of Sanitary Commissioner
Fort Saint George 6th September 1898

From

THE PRESIDENT,
Municipal Commission,
Madras.

H. No. 248/B.P

Dated 3rd September 1898
Received 8-9-1898
Registered 8-9-1898
Enclosures 4
Spare copies

SUBJECT.

Submitting with reference to Memorandum No. 110. P. (Local and Municipal) dated 22nd August 1898, a report from the Health Officer accounting for the increased mortality in the City of Madras.

BACK PAPERS.

G. O.	No.	Department.	Date.

FURTHER PAPERS.

G. O.	No.	Department.	Date.

Enc: 3 to H O's letter, d/ 2/9

Enc: 1

Cases of C

ivisions & ards.	15 July 98		22 July 98		29 J	
	Attacks	Deaths	Attacks	Deaths	Attacks	D
E	.	.	4	.	3	
C	6	4	14	10	12	
W	.	.	.	.	.	
N	5	3	1	3	4	
C	2	.	1	2	.	
S	.	.	.	.	1	
N	.	.	1	.	.	
C	.	.	2	1	3	
S	4	1	1	1	1	
4	.	.	.	.	1	
N	.	.	.	.	4	
C	.	.	1	.	1	
S	.	.	.	.	.	
N	.	.	.	.	.	
S	.	.	.	.	2	
N	1	1	1	1	3	
C	3	.	6	7	5	
S	4	3	6	5	6	
N	3	3	5	2	3	
S	.	.	.	.	.	
l	28	15	43	32	49	3

August 1898.
tary Dept.
icipal Office

A

1/T 652 P of 1898

2/T 652 P of 1898

652 P of 189

Eac: 3 to H.O's letter, d/2/9/98

Eac: 2 to H.O's letter, d/2/9/

Table B

Table showing deaths during the present year and mean of past 5 years (red)

ek g.	fever	Dys & Diarr.	other dis	cho.	sm.pox	Total	Mean of last 5 yrs
8	152 94	57 37	180 154	0 ·6	1 ·8	390	286
5	119 108	57 47	176 162	13 ·2	1 ·2	366	318
	150 106	76 47	201 147	30 ·2	1 1·4	458	303
	133 122	91 48	197 156	36 ·8	1	458	328
	129 132	87 63	207 166	38 2·6	" ·6	461	365
	192 132	86 78	225 183	71 2·2	1 1·4	575	397
	199 143	84 69	213 163	91 2	5 ·6	592	378

2
Ub 52 P of 1898

52 P of 1898

Enc: 3 to H O's letter d/ 9/9/98

Table C.

	Fever	Dys & Diarrhoea	Other diseases	Cholera	Small-pox	Total.	Mean of last 5 years.
1891 July.							
1st week	123	62	178	6	"	374	
2nd "	80	50	170	4	"	304	
3rd "	99	51	155	5	"	310	
4th "	102	57	174	2	"	325	
August							
1st Week.	108	60	197	16	1	382	
2nd "	111	93	176	61	"	441	
3rd "	141	139	212	166	"	658	
4th "	176	210	246	178	"	810	

D

	Fever	Dys & Diarrhoea	Other diseases	Cholera	Small-pox	Total.	Mean of last 5 years.
1892 July.							
1st Week.	99	52	167	1	1	320	
2nd "	129	85	180	4	"	398	
3rd "	139	81	152	5	"	377	
4th "	159	75	155	15	"	404	
August.							
1st Week	189	116	227	28	1	561	
2nd "	197	136	201	42	"	576	
3rd "	205	127	240	24	1	597	
4th "	191	119	193	34	2	539	

3/1652 P of 1898

Enc: 1 to H. N° 248/B.D d/ 3/9/98.

H. No.

MUNICIPAL OFFICE,

Health Department,

Madras, 2nd September 1898.

From

SURGEON-LIEUT. J. W. CORNWALL, I. M. S.
Health Officer,
Madras Municipality.

To

The Ag. President,
Madras Municipal Commission.

Sir,

Enclosure. With reference to Memorandum No.110 P (L&M) dated 22nd August 1898, I have the honor to inform you that as far as locality is concerned the mortality has been high everywhere not in one particular quarter alone. Deserving of special mention in this connection is the whole of Black Town and the centre ward of Division 1. i.e. the part enclosed by Tiruvattiyur High Road and Mannarsawmy Covil Street. The latter is one of the most thickly populated parts of Madras, the houses are chiefly of mud and matting, with generally no ventilation and hopelessly overcrowded. Added to this there are few or no drains and the habits of the people leave much to be desired. I am strongly of opinion that if there were some way of carrying off the immense quantities of waste water which render these huts always damp and unhealthy and a few huts here and there were weeded out to open up gangways, and the rest provided with permanently patent ventilators, there ~~will~~ would be a marked diminution in the death rate.

? open

Black Town has a system of side drains many of which are defective for want of proper repair and imperfect gradients while there is scarcely a house-holder who will attend to the cleanliness of his own connections. Many of the smaller streets and hutting grounds are as bad as any part of the 1st Division, possessing no drains at all. Further the necessity for ventilation is as great in the large

large pucka paka houses as in the one roomed hut and the want of it tells on the health of the inmates of the one as much as on those of the other. Houses are all built in contact with rooms opening only on to the central courtyard. These rooms are further spoiled by tatties and sacking screens hung round so as to enclose the verandah. Avaricious landlords pack as many persons as possible into each house making extra private accommodation by means of these tatties.

Be the reason what it may, I understand that from Black Town the severest types of malaria are now being constantly admitted into the General Hospital, the patients often being persons who have never resided out of Black Town, or at least Madras.

The crying want of Madras is drainage. Drainage to carry off the wastage of the gallons of water daily delivered by the Red Hills pipes. Until this is done no efforts that can be made will ever lower the death rate. When the season is favorable, as happens during the present time, epidemics will arise and people will die as they are doing now from what are preventible diseases if only steps be taken to prevent them. To pass on to details the present increase is due partly to cholera which shows, however this week a slight decrease.

This has chiefly affected the localities mentioned before, namely Division 1 Centre ward and Black Town. Triplicane and Periamet have suffered to some extent also. Annexed is a table(A) showing its distribution by weeks in the wards.

There is no particular increase under the heading diarrhoea and the rise under dysentery is comparatively small being most noticeable in 1st, 2nd and 5th Divisions.

"Other diseases" includes most of the deaths ~~and~~ from the hospitals and anything the burial ground peons feel unable to classify under fevers and cholera and dysentery. The number of deaths returned by the hospitals is somewhat greater than usual even taking cholera into account. Before proceeding to discuss the~~-es~~ causes of the recent high mortality I will give an outline of the system under which the registration of deaths is carried on in the city of Madras.

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The only trustworthy information as to the cause of death that is received comes from the hospitals. No reports are received from the local practitioners. For the rest we depend entirely on ~~the~~ what the friends of the deceased choose to tell the burial ground peon or the Registrar.

From this it is obvious that the returns are of no practical value as far as classification of diseases is concerned, since the majority of the natives have a very limited knowledge of symptoms and vocabulary of medical terms. "Fever" is a kind of generic name for all diseases in which there are no very prominent and unmistakeable symptoms. It is most important at all times, particularly the present that no burial or cremation should be allowed without a certificate from some medical practitioner, whether European Native, Hakim or Vaidian. Persons too poor to pay might obtain the services gratis of certain practitioners appointed for the purpose in each district. The latter could claim their fees for each certificate granted from the Municipality. The penalty for producing no certificate would be that the corpse must be examined by some competent person prior to its final disposal. I believe that the total number of deaths recorded is now nearly absolutely correct, but this number alone without proper diagnoses is useless for any purpose but the compilation of certain tables; there is no way of finding out whether certain diseases are more prevalent in one quarter than in another and to what extent. As for expecting anything to be elicited by the burial ground peon, a man on Rs.7 a month or the Registrar, a man on Rs.20 a month, it is only necessary to point out that the most skilful cross questioner and most intelligent doctor would be unable, by merely viewing the body and interrogating the relations, to decide in the vast majority of cases from what disease death had ensued.

Returning to present conditions the annexed tables (B) shows that there is a general tendency for the mortality to rise about this season even during comparatively healthy years. The better to realise this similar tables (C) and (D) are shown below for two unhealthy years namely 1891-92.

The year 1892 is especially comparable with 1898 as it shows that circumstances which favor cholera may also cause a great increase in the mortality under other headings. "Fevers" in all probability includes some cholera cases for the people will always conceal them when they can having a horror of disinfection. Nearly all the houses in which more than one death has occurred since 1-7-98 have beenre-visited during the past few days by a hospital assistant and he has reported that the remaining occupants are healthy. Endeavours are made by myself and all the Sanitary Inspectors and Overseers to inspect the bodies of all persons who die from "fever" or any other indefined illness. Hitherto there has been no reason to suspect plague but the number of bodies that can be thus seen is limited owing to religious prejudices. Muhammadans consider it desecration for the cloth covering the body to be lifted even by a near relative and co-religionist, so none of them can be seen. Caste Hindus raise other objections and even pariahs do not like a female body to be looked at. Notwithstanding the appallingly high death rate and our inability to adequately account for it I am of opinion that plague has not yet gained an entrance into Madras but the Machinery for accounting for deaths is so faulty that it would be quite possible for several cases to occur without our knowledge. Hence the absolute necessity of introducing at once compulsory certification of deaths.

The present abnormal mortality can only be considered due to an exceptionably favorable season for the development of diseases of various kinds coupled with unknown meteorological conditions,---which undoubtedly, though at the present day it is not understood how, can influence the incidence of microbic, parasitic and other -disorders, when the environment of the populace is such that organisms find a suitable extra-corporeal habitat.

I have the honor to be,
Sir,
Your most obedient servant,
J. W. Cornwall
Surgn.-Lt.,
Health Officer.

4/1652 P of 1898

C.B. 1652 P

Genl. Dept.
13.

~~G.~~ 4 No. 248/B.P

MUNICIPALITY OF MADRAS,
General Department,
Madras, 3 September 1898.

From
R.E. Ellis Esq., M. Inst. C.E.,
~~Lieut.-Col. SIR GEORGE MOORE, Kt., C. I. E.,~~
Ag. President, Municipal Commission.

To
The Secretary to Government,
Local and Municipal Department,
Fort.St. George.

Thro' The Sanitary Commissioner
for Madras.

Rt 2723.S/24/8/98

Enclosure.
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Sir,

With reference to your Memorandum No.110 P., dated 22nd August 1898, I have the honor to forward herewith a report of Surgeon. Lt. Cornwall, Health Officer of this Municipality on the increase in mortality in the city of Madras from July last.

I have the honor to be,
Sir,
Your most obedient servant,
R.E. Ellis
Ag. President, Munl.Commn.

Local & Munl. (1898) Department.

D.O.
~~CURRENT~~ No. 184

Order

From Dr. W. G. King.
Sanitary Commissioner
Madras

No.

Dated 13-9-1898
Received 15-9-1898
Registered
Enclosures
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SUBJECT

Regarding high mortality in Madras.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

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[25]
2,000—4-2-98.

18

LOCAL AND MUNICIPAL DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following papers:—

Read Government Memorandum, No. 110 P, dated 22nd August 1898.

The attention of the President, Municipal Commission, Madras, and of the Sanitary Commissioner is invited to the great and continuous increase in mortality in the city of Madras, since the beginning of July last, and they are requested to investigate the causes and submit a report to Government as soon as possible. Special inquiries should be made in cases when there has been more than one death in the same house or in the same family within a short interval.

To The Sanitary Commissioner
" Pt., Munl. Commn., Madras.

Read also the following papers:—

Telegram from the Sanitary Commissioner to the Secretary to Government, Local and Municipal Department, dated 6th September 1898.

Telegram from the President, Municipal Commission, Madras, to the Secretary to Government, Local and Municipal Department, dated 6th September 1898.

From Mr R. E. Ellis, M. Inst. C.E., Ag ~~the~~ President, Municipal Commission, Madras, to the Secretary to Govt., L. & M. Dept., dated No. 248/B.P ~~dated~~ 3rd September 1898.

With reference to your Memorandum No. 110 P, dated 22nd August 1898, I have the honour to forward herewith a report of Surgeon. Lt. Cornwall, Health Officer of this Municipality, on the increase in mortality in the city of Madras from July last.

Enclosure.

Letter from Surgeon-Lieut. J. W. Cornwall I.M.S., Health officer, Madras City, to the President, Munl. Commn., Madras, Dated Madras 2-9-98.

With reference to Memorandum No. 110 P, (Local and Municipal Department) dated 22nd August 1898, I have the honour to inform you that as far as locality is concerned the mortality has been high everywhere not in one particular quarter alone. Deserving of special mention in this connection is the whole of Black Town and

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the centre ward of Division I.i.e. the part enclosed by Tiruvattiyur High Road and Mannarswamy Covil Street. The latter is one of the most thickly populated parts of Madras,the houses are chiefly of mud and matting,with generally no ventilation and hopelessly overcrowded. Added to this there are few or no drains and the habits of the people leave much to be desired. I am strongly of opinion that if there were some way of carrying off the immense quantities of waste water which render these huts always damp and unhealthy and a few huts here and there were weeded out to open up gangways,and the rest provided with permanently patent ventilators,there would be a marked diminution in the death rate.

Black Town has a system of side drains many of which are defective for want ~~for~~ of proper repair and imperfect gradients while there is scarcely a house-holder who will attend to the cleanliness of his own connections. Many of the smaller streets and hutting grounds are as bad as any part of the 1st Division,possessing no drains at all. Further the necessity for ventilation is as great in the large pucka ~~hou~~ houses as in the one roomed hut and the want of it tells on the health of the inmates of the one as much as on those of the other. Houses are all built in contact with rooms opening only on to the central courtyard. These rooms are further spoiled by tatties and sacking screens hung round so as to enclose the verandah. Avaricious landlords pack as many persons as possible into each house making extra private accommodation by means of these tatties.

Be the reason what it may, I understand from Black Town the severest types of malaria are now being constantly admitted into the General Hospital,the patients often being persons who have never resided out of Black Town,or at least Madras.

The crying want of Madras is drainage. Drainage to carry off the wastage of the gallons of water daily delivered by the Red Hills pipes. Until this is done no efforts that can be made will ever lower the death rate. When the season is favourable,as happens during the present time,epidemics will arise and people will die as they are doing now from what are preventible diseases if only steps be taken to prevent them. [To pass on to details, the present increase is due partly to cholera which shows, however, this week a slight decrease.

K.P.

This has chiefly affected the localities mentioned before,namely,

Division

Division I Centre ward and Black Town. Triplicane and Periamet have suffered to some extent also. Annexed is a table (A) showing its distribution by weeks in the wards.

There is no particular increase under the heading diarrhoea and the rise under dysentery is comparatively small being most noticeable in 1st,2nd and 5th Divisions.

"Other diseases" includes most of the deaths from the hospitals and anything the burial ground peons feel unable to classify under fevers and cholera and dysentery. The number of deaths returned by the hospitals is somewhat greater than usual even taking cholera into account. Before proceeding to discuss the causes of the recent high mortality I will give an outline of the system under which the registration of deaths is carried on in the city of Madras.

The only trustworthy information as to the cause of death that is received comes from the hospitals. No reports are received from the local practitioners. For the rest we depend entirely on what the friends of the deceased choose to tell the burial ground peon or the Registrar.

From this it is obvious that the returns are of no practical value as far as classification of diseases is concerned,since the majority of the natives have a very limited knowledge of symptoms and vocabulary of medical terms. "Fever" is a kind of generic name for all diseases in which there are no very prominent and unmistakeable symptoms. It is most important at all times,particularly the present, that no burial or cremation should be allowed without a certificate from some medical practitioner,whether European,Native,Hakim or Vaidian. Persons too poor to pay might obtain the services gratis of certain practitioners appointed for th the purpose in each district. The latter could claim their fees for each certificate granted from the Municipality. The penalty ~~of~~ for producing no certificates would be that the corpse must be examined by some competent person prior to its final disposal. I believe that the total number of deaths recorded is now nearly absolutely correct,but this number alone without proper diagnoses is useless for any purpose but the compilation of certain tables; there is no way of finding out whether certain diseases are more prevalent in one quarter than in another and to what extent. As

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for expecting anything to be elicited by the burial ground peon, a man on Rs.7 a month, or the Registrar, a man on Rs.20 a month, it is only necessary to point out that the most skilful cross questioner and most intelligent doctor would be unable, by merely viewing the body and interrogating the relations, to decide in the vast majority of cases from what disease death had ensued.

Returning to present conditions the annexed table~~s~~ (B) shows that there is a general tendency for the mortality to rise about this season even during comparatively healthy years. The better to realise this, similar tables (C) and (D) are shown below for two unhealthy years namely 1891-92.

The year 1892 is especially comparable with 1898 as it shows that circumstances which favour cholera may also cause a great increase in the mortality under other headings. "Fevers" in all probability includes some cholera cases for the people will always conceal them when they can, having a horror of disinfection. Nearly all the houses in which more than one death has occurred since 1-7-98, have been revisited during the past few days by a hospital assistant and he has reported that the remaining occupants are healthy. Endeavours are made by myself and all the Sanitary Inspectors and Overseers to inspect the bodies of all persons who die from "fever" or any other indefined illness. Hitherto there has no been no reason to suspect plague but the number of bodies that can be thus seen is limited owing to religious prejudices. Muhammadans consider it desecration for the cloth covering the body to be lifted even by a near relative and co-religionist, so none of them can be seen. Caste Hindus raise other objections and even pariahs do not like a female body to be looked at. Notwithstanding the appallingly high death rate and our inability to adequately account for it, I am of opinion that plague has not yet gained an entrance into Madras, but the machinery for accounting for deaths is so faulty that it would be quite possible for several cases to occur without our knowledge. Hence the absolutely necessity of introducing at once compulsory certification of deaths.

The present abnormal mortality can only be considered due to an exceptionably favourable season for the development of diseases of various kinds, coupled with unknown meteorological conditions, which undoubtedly, though at the present day it is not understood how, can influence the incidents of microbic, parasitic and other disorders, when

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the environment of the populace is such that organisms find a suitable extra-corporeal habitat.

Endorsement of the Sanitary Commissioner for the Government of Madras, No.1950/S, dated 6th September 1898.

No 1950S.

Forwarded to Government with reference to the telegram from this office of this date. The introduction of compulsory production of Medical Certificate~~s~~ of cause of death, as suggested by the Health Officer, is essential under the provisions already decided upon by Government. Further investigation by actual examination of cases is necessary before a final decision can be arrived at, as to the cause of increased mortality. This is surrounded ~~with~~ with difficulties, and cannot be managed without some delay. A statement will be forwarded as quickly as possible.

(Signed) W. G. King Supt, Lieut Col
Sany Commissioner

6-9-98

ORDER No.1092 P, dated 17th September 1898.

Recorded. The Government accepts the Health Officer's opinion in which the Sanitary Commissioner concurs, that the late increased mortality in the city of Madras is due to the peculiar character of the season acting in conjunction with recognized insanitary conditions, and not to the existence of concealed cases of plague.

2. The Government has received a communication from the Sanitary Commissioner in which he ascribes the high percentage of mortality to the following causes also; viz. Prevalence of cholera to an extent greater than has been reported; dearness of food-grains; immigration of weakly persons from Nellore and other parts affected by the recent distress; and increase of population over the census figures which are ~~in~~ used in calculating percentages.

~~(True Copy)~~

(Signed) H.Tremenheere,
Secretary to Government.

To

The President, Municipal Commission, Madras,
" Surgeon-General.
" Sanitary Commissioner.
~~The~~ Editors' Table.

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LOSURES TO C. No.

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OF GOVERNMENT.

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FURTHER PAPERS.

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

Government (1898) of Madras.

LOCAL AND MUNICIPAL.

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G.O., No. 1093 P., 17th September 1898.

SEPTEMBER.

Re-importation of Baskets.

Requesting all Railway Administrations to see that consignments of empty baskets from plague-infected parts are not received for transmission over the railway lines in the Presidency, and ordering that officers in charge of the railway frontier inspection stations should seize and destroy those imported in contravention of the prohibition and report the matter to the Collectors concerned.

Desp. 26
30-9-98