INDEXED.

Local & Munl. (1897) Department.

PRINTED.

G.O., No. 417 M.

DATED 8th March 97

DESPATCHED

[Despatch Abstract.]

Bubonic Plague.

Comg to the Surgeon Gl & the Sanitary Comrs with remarks letr from Mons. W. M. Haffkine, forwarding Copies of his Communications to the Govt of India, regarding his prolective treatment against the plague & his Experiments on Curative treatment by anti-toxin serums.

✓

60

BACK PAPERS.

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

FURTHER PAPERS.

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

Government {1897} of Madras.

LOCAL AND MUNICIPAL.

Recd. } 1897. *Enclosures*

Regd. } *Spare copies*

G.O., No. 417 M., 8th March 1897.

MARCH.

Bubonic Plague.

Communicating to the Surgeon-General and the Sanitary Commissioner, with remarks, letter from Monsieur W. M. Haffkine forwarding copies of his communications to the Government of India regarding the protective treatment against the plague and the experiments on curative treatment by antitoxin serum.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

From Monsieur W. M. HAFFKINE, Bombay, to the Secretary to Government, Local and Municipal Department, dated 2nd March 1897.

In compliance with the order of the Government of India, No. 592, dated 19th February 1897, I have the honour to forward, for the information of the Government of Madras, copies of my communications to the Government of India referring to the protective treatment against the plague and to the experiments on curative treatment by antitoxin serum.

2. The plague prophylactic can be issued from this laboratory in sealed tubes, in a state liable to be kept for long periods, without the probability of its losing power.

The curative serum prepared here is still under study.

ORDER—No. 417 M., dated 8th March 1897.

Communicated to the Surgeon-General and the Sanitary Commissioner.

2. The Surgeon-General is requested to communicate these papers to all District Medical Officers and to the Surgeons of districts in Madras.

3. The communications referred to in paragraph 1 of the letter read above were already circulated with G.Os., No. 333 M., dated 1st March 1897, and No. 367 M., dated 4th March 1897.

(True Extract.)

G. S. FORBES,
Secretary to Government.

To the Surgeon-General.
„ Sanitary Commissioner.
Copy to the Public Department.
„ the Marine Department.
„ the Revenue Department.
„ all Presidents of District Boards.
„ all Chairmen of Municipal Councils.
„ the President, Municipal Commission, Madras.

Exd. A. Raitt.

Government {1897} of Madras.

LOCAL AND MUNICIPAL.

Proof for approval

Recd. } 1897. *Enclosures*
Regd. *Spare copies*

G.O., No. 417 M., 8th March 1897.

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Exd. A. Raitt.

[L. & M. 1,000—2-20-90.]

Local & Munl. (1897) Department.

CURRENT No. 945

Prog

Order No. 417 M. dt 8-3-97.

Communicated to the Surgeon General and the Sanitary Commissioner

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S/3

4/3/97

From Dr. W.M.Haffkine, Bombay.

No.

Dated 2-3-1897
Received 4-3-1897
Registered 4-3-1897
Enclosures 3
Spare copies

SUBJECT.

Forwarding for information copies of his communications to the Govt. of India referring to the protective treatment against the plague and to the experiments on curative treatment by antitoxin serum.

To
+ The Surg: Genl. S/3
+ " Sanr Comr. Dispd in lieu
+ Copy to the Public Depte. Dispd in lieu 8/3/97
" " Marine — Dispd in lieu 13/3/97
" " Revl — 5 Copys 13/3/97
" " all Prests of Dt: Bds.
" " all Chairmen of Munic: Comms Dispd 18/3/97
+ " " The Prest: Munl: Comr: Madras Dispd in lieu 8/3/97
Dispd in hint 24/3/97

Copy letter only + issue in lieu to the Standing Orders

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

From W. M. Haffkine

To G. S. Forbes Esquire M.A.I.C.S.

Secretary to the Government of

Madras.

BOMBAY MUNICIPAL DEPARTMENT
OUTWARD No. 945 M

Madras.

Bombay 2nd March 1897

Sir,

In compliance with the orde
of the Government of India No 592
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be kept for long periods, without
a probability of its loosing power.

The curative serum prepared
here is still under study.

I have the honor to be
Sir
Your most obedient Servant

W. M. Haffkine

From W. M. Haffkine
To The Secretary to the Government of
India, Home Department
Calcutta

Bombay 16th Jany 1897

Sir,

I have the honor to communicate the following facts relating to the possibility of protective inoculation against the plague.

In the course of the present researches I have found different media which give rich cultures of the plague bacillus permitting to cultivate them in abundant & concentrated quantities.

The virulence of these cultures is shewn by the fact that 1 to 2 minims are sufficient to communicate certain death to the largest rodents.

The destruction of the bacilli in the culture by delicate processes, such like the addition of the essence of mustard, of very weak solutions of

1-3-97

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Gen Mar 1897

carbolic acid, or by dessication, or heat, deprives these cultures of their fatal properties and makes a dose of 40 to 50 times bigger than the fatal one, quite harmless to the animals.

But while depriving the cultures of their noxious properties, the above processes leave to them the power of protecting the system against the fatal infection.

Rodents which have had an injection of such cultures with microbes killed in them, when infected 5 days after the prophylactic treatment, stand easily a dose of virus which would be fatal to ten other not protected animals.

Having established these facts I caused myself to be inoculated on the 10th of this month, to observe the symptoms of the operation in man.

The injection was done in the flanks with 10 cubic centimeters of a culture in which the microbes were killed by heating during one hour at a temperature of 70°C.

The symptoms produced consisted in pain at the seat of inoculation and in a rise of temperature. The highest point reached was 102°F, 8½ hours after the injection, which was accompanied by slight headache & feeling of faintness. The temperature got again normal 24 hours later. The bowels remained normal.

The pain at the seats of inoculation was mostly felt next morning, while getting up from bed. It extended, on the left side, to the region above the Pouparts ligament and on the right towards the axilla, without reaching it.

Since the next day the pain gradually disappeared. A small nodule remained afterwards at the seat of

inoculation, but got rapidly absorbed. These symptoms shew that the operation is perfectly harmless to men.

Ther observations made in the Laboratory lead to the conclusion that the inoculation as described above will increase the resistance of man against the disease. But the extent of that protection, and the modifications to be introduced in the method for the object of increasing that protection, can be shewn only by observation on man during the epidemic

The most important facts to be solved by such observations are the following.

(1) Which are the doses necessary to produce in man a marked increase of resistance against the conditions of infection as they exist in nature.

(2) How many days after the injection is the highest resistance reached.

(3) How long will the resistance last

I have &c
sd W. M. Haffkine

Forwarded to the Government of Madras in compliance with the letter of the Government of India #592, dated 19th February 1897. — Bombay 1st March, 1897

W. M. Haffkine

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9/4/5 W. 1897

From W. M. Haffkine

To The Secretary to the Government of India, Home Department Calcutta

Bombay 15th February 1897

Sir,

In view of the urgency of the case, I have the honor to communicate the following information concerning the outbreak of plague in Her Majesty's House of Correction Byculla, where a considerable portion of inmates had volunteered to undergo the prophylactic treatment & where the first observations on the actual effect of this treatment have been collected.

Occurrences on the day of inoculation:

In the forenoon of the day of inoculation 6 new prisoners have been admitted to the hospital suffering from plague of these three 3 proved fatal.

The inoculations were applied in

the afternoon.

One of the inoculated, Keshoo Umar Shankar prisoner No 672, had at the time of inoculation a painful gland in the left groin; two others, Abdool Karim No 1356 and Govind Pandoo No 1222, developed painful glands in the left axilla the same evening. These three cases have also proved fatal.

On the 1st day after inoculation there were:

Amongst 177 not inoculated prisoners 2 cases, of which 1 proved fatal.
Amongst 157 inoculated 1 case, who rapidly improved & recovered.

On the 2nd day after inoculation there were:

Amongst 172 non-inoculated 1 case which proved fatal
Amongst 150 inoculated —— nil.

On the 3rd day after inoculation there were:

Amongst 173 non inoculated 1 case which proved fatal.
Amongst 146 inoculated —— nil

On the 5th day after inoculation there were:

Amongst 171 non-inoculated 1 case, which proved fatal
Amongst 146 inoculated —— Nil.

On the 6th day after inoculation there were:

Amongst 169 non-inoculated 1 case which proved fatal
Amongst the inoculated — Nil

On the 7th day after inoculation there were:

Amongst the 169 non-inoculated 5 cases of which 1 proved fatal.
Amongst 146 inoculated 1 case, who is alive.

Since the 6th instant, no more cases have occurred in the jail.

The following is a tabulated form of the occurrences.

Date of occurrence	Amongst non inoculated	Amongst the inoculated.	
23rd to 29th January 1897	9 cases, 5 fatal	—	—
30-1-97 the day of inoculation: Forenoon, before inoculation.	6 Cases, 3 fatal	—	—
30-1-97 the day of inoculation: Afternoon, after inoculation.	—	—	3 cases, fatal
1st day after inoculation 31-I-97	2 cases, 1 fatal	1 case	—
2nd day after inoculation 1-II-97	1 case, fatal	—	—
3rd day after inoculation 2-II-97	1 case, fatal	—	—
5th day after inoculation 4-II-97	1 case, fatal	—	—
6th day after inoculation 5-II-97	2 cases, 1 fatal	—	—
7th day after inoculation 6-II-97	5 cases, 1 fatal	1 Case	—
Total, after the day of inoculation	12 cases, 6 fatal in an average daily strength of 173 non inoculated	2 cases — in an average daily strength of 148 inoculated.	

The Experience gained by the observation in the jail tends to show:

1. that the injection of 3 cc of the prophylactic seems to be sufficient to effect the desired protection, no repetition of inoculation being necessary to arrest the disease during an existing epidemic.
2. That the prophylactic is powerless to arrest symptoms of plague already started, or which develop within a few hours, but there is the possibility of its influencing the disease in the incubation period, in individuals infected three or four days previously.
3) that the time necessary for the plague prophylactic to produce the protective effect is shorter than in any preventive treatment known, this period being in the anticholera inoculation of 4 days, in vaccination against small-pox of 7 days, in the inoculations against anthrax of 12 days, in the inoculation against rabies of 15 days, and in the present treatment, apparently less than 1 day.
4) the question remains open as to how long with the

inoculated persons remain proof against the disease, and, therefore, in order to ensure the probability of a more lasting effect, it is advisable to apply repeated inoculations, with doses higher than the above mentioned.

The above conclusions are temporary, and refer only to the teaching of the particular outbreak in question. There remains fully the possibility of the future experience compelling us to modify the above conclusions though the expectation is justifiable that the general bearing of the results as above detailed will remain unshaken.

I have &c
Sd W. M. Haffkine

Copy forwarded to the Government of Madras, in compliance with the letter of the Government of India N 592, dated the 19th February 1897.

Bombay, 1st March 1897. W. M. Haffkine

From W. M. Haffkine

To The Secretary to the Government of India
Home Department
Calcutta.

Bombay 17th February 1897

Sir,

I have the honor to communicate the following information on the attempt at Curative treatment which has been made by means of the antitoxine at present under preparation at Sivree, during the outbreak of plague in the Byculla Jail.

A patient called Janoo Balloo, admitted to the hospital, since 3 days, has received one injection of antitoxine but died within 11 hours.

The following patients were selected for treatment immediately after their admission to the isolation

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945 May 1897

shed, though after some time has elapsed since the onset of the disease.

Admissions on the 30th January:

Of six patients admitted in the morning the two most serious, Jeeva Virchand and Syed Jonas Ali, were selected for the antitoxic injection, the four milder left to the ordinary treatment.

Of the four milder 3 have died within 2, 4 & 6 days.

The two others specially treated have survived.

Admissions of the 31st January 1897

Of the two cases admitted, the most serious one, Annah Vishnoo, has been selected for the special injection, the other milder left to the ordinary treatment.

The milder case ended fatally after 5 days illness, Annah Vishram is alive

Admissions on the 1st February 97

Of the 5 cases admitted, the two most serious, Kaloo Bhimsha and Keshoo Umar, have been selected for the antitoxic injection, the three milder left to ordinary treatment.

The two treated cases have ended fatally after 6 & 12 days illness; of the not treated specially, two died after 4 and 9 days.

II Analysing the result in connection with the period elapsed between the onset of the attack and the beginning of the antitoxic treatment it appears, that,

Out of the 6 patients treated, 4 have been taken for the special injection within 24 hours after the attack,

and 2 patients after two and 3 days' illness.

Of the 4 patients admitted for treatment

within 24 hours, 3 have survived, one lived for 12 days.

The two admitted 3 and 2 days after attack, have died 11 hours and 4 days after beginning of treatment.

I believe, from the above results, that there is the possibility of the antitoxic serum rendering service in the treatment of the disease.

At the present stage of the preparation for producing any marked effect on the disease,

it is necessary to start the treatment within the first 24 hours,

and a large number of repeated injections are required.

The possibility remains that with the further maturation of the fluid, its power will increase so as to effect an influence on older cases, and when used in smaller doses.

No

No serum can as yet be issued for the use of the general public.

I have &c
Sd W. M. Haffkine

Copy forwarded to Government of Madras, in compliance with the letter of the Government of India 8592, dated the 19th February 1897.

W. M. Haffkine

Bombay, 1st March 1897

Sent to Press. 8-3-97

Returned for signature. 12-3-97

Despatched in print. 13-3-97

Number of copies required: Order complete. 566
Letter only.
Order complete with Letter.

Press Again G.O. No. 189 Dated

Current No.

Enclosures to C. No.

Order of Government

Letter of Government.

Statement with ditto.

Papers not filed or being meant for despatch in original.

N.B.—

A = Print in full
B = Not to be printed.
P = Print abstract only.
Q = Print heading only.