

Local & Munl. (1898) Department.

PRINTED.

G.O., No. 1463-P

DATED 21- 11- 98.

Dep't. M. H. H.

Monsieur Haffkine's Serum. [Despatch Abstract.]

Communicating to the Plague & Sanitary Commission Copies of
the Resolutions of the Govt. of Bombay nos. $\frac{4922}{5208P}$ & $\frac{5778}{5870P}$ dated
2nd Sept. and 17th Oct. 98 respectively regarding the influence
& method of use of —

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 {1898} of Madras. LOCAL AND MUNICIPAL.

Recd.

Regd.

} 1898.

Enclosures

Spare copies

G.O., No. 1463 P., 21st November 1898.

NOVEMBER.

M. Haffkine's Serum.

Communicating to the Plague and Sanitary Commissioners copies of the Resolutions of the Government of Bombay, Nos. 4922—5208-P. and 5778—5870-P., dated 2nd September and 17th October 1898, respectively, regarding the influence and method of use of —.

No. 1463 P., 21st NOVEMBER 1898.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

From the Hon'ble Mr. A. WINGATE, I.C.S., C.I.E., Acting Chief Secretary to the Government of Bombay, General Department (Plague), to the Secretary to the Government of Madras, Local and Municipal Department, dated Bombay Castle, 18th October 1898, No. 5894-P.

I am directed to forward, for the information of the Government of Madras, a copy of the accompanying Resolutions issued by this Government, * No. 4922—5208-P., dated 2nd September, and No. 5778—5870-P., dated 17th October 1898, regarding the influence and method of use of M. Haffkine's serum and instructions in connection with inoculation with the serum.

* Communicated in G.O., No. 1345 P., dated 21st October 1898.

ENCLOSURE.

EXTRACT from the Proceedings of the Government of Bombay, General Department (Plague), No. 5778—5870-P., dated Bombay Castle, 17th October 1898.

Read—

Memorandum from the Plague Commissioner, No. 2380, dated the 1st October 1898—

Submits the following letter, No. 586, dated the 23rd September 1898, from M. W. M. Haffkine, C.I.E., together with copy of one from the Collector of Ahmednagar, to which it is a reply :—

"With reference to the Acting Collector of Ahmednagar's letter, No. 9516, dated 19th instant, forwarded with your, No. 2299, dated Bombay, 21st idem, I have the honour to state that the following are the arrangements which I have introduced for the present and which, of course, are subject to any modifications you may suggest.

"Plague prophylactic, syringes, printed instructions and sample copies of inoculation forms, certificates and observation sheets are supplied from the "Plague Research Laboratory," "Khoshroo Lodge" Bungalow, Nesbit Lane, Mazagon, Bombay, upon an indent forwarded, either through the Plague Commissioner, or the Surgeon-General with the Government of Bombay, or direct to the laboratory. Inoculation forms and observation sheets are to be printed locally according to the supplied samples. An arrangement, however, might perhaps be made similar to that described for the supply of inoculation certificates in paragraph 2 of Government Circular No. 2178,* dated Bombay, 2nd September 1898. In Bombay, the forms are supplied by the Health Department of the Municipality."

* (Plague Commissioner Circular.)

are supplied by the Health Department of the Municipality."

No. 1463 P., 21st NOVEMBER 1898.

"2. Within the Bombay Presidency proper no charges for the prophylactic are made, and syringes are supplied (on loan) and repairs executed without charge. The addressee is only requested to pay railway freight on receipt of the parcels and on returning the empty bottles and the syringes.

"3. Outside the Bombay Presidency as well as in the independent States within the Presidency a nominal charge for the prophylactic is made of 2 pice a dose, and syringes are sold at their cost-rate or as nearly that rate as possible. The sums received were, up to 29th August 1898, forwarded to the Accountant-General, Bombay, direct; since the above date, upon a request from the Accountant-General, they are deposited in the Bank of Bombay and the cash recovery receipts remitted to the Accountant-General.

"A copy of the books † in which the record of all despatches, paid and unpaid, is kept is herewith forwarded.

† Returned to M. Haffkine.

"4. Demands from Government, Civil, Military and Medical Officers from Municipalities and from officials in Native States are met with immediately; whereas private practitioners are requested to furnish a recommendation from the local Magistrate, or, in Bombay, from the Health Officer; after which, in regard to the supply of prophylactic syringes, &c., they are treated on the same lines as officers in Government employ. This admission of private practitioners, recommended by the authorities, to the same facilities as those afforded to Government officers has been found to be an important factor in removing opposition and popularising the treatment.

"5. With regard to paragraph 4 of the Acting Collector's letter, I concur with Surgeon-Major W. A. Corkery's view as to the facility with which the rules of the inoculation technique can be learned by Subordinate Medical officers. The non-compliance with any of those rules may, however, cause accidentally regrettable results. It is, therefore, desirable that a selection of the most careful among the subordinates be made, and that they should be deputed first to work for a short time at least in a place where inoculations are being done under Commissioned Medical Officers.

"6. Moreover, I would venture to mention here that while it is fairly safe to trust a careful subordinate in charge of a local dispensary with performing inoculation in a place where a spontaneous demand to that effect has arisen, or where the medical subordinate has had himself the inspiration of talking on the subject to the local residents, and unconsciously creating a demand, it is desirable that where such a demand does not yet exist, the subordinates should not be commissioned to preach or popularise the idea, exception of course being made for particularly able and authoritative men, enjoying confidence and influence among the inhabitants. The reason of this evidently being that an awkward attempt at persuasion is liable to create opposition, resistance and, occasionally, unfounded apprehension. Until inoculation becomes better known in the country, it is desirable to request the local Magistrate and Civil Surgeons to try to introduce inoculation, at first, into places under their immediate control and after having personally ascertained that the leaders of the community have been won to the idea. I feel, however, that these considerations are outside my jurisdiction, and beg to be excused only on the score of a certain experience which I happened to have gained in this special line of work."

and states as follows :—

"2. The Plague Commissioner has the honour to recommend that this letter be printed and circulated with a special caution to officers to weigh carefully the remarks in paragraphs 5 and 6 before permitting inoculation by subordinates not under immediate supervision.

"3. The Surgeon-General might be asked to issue similar caution to all Civil Surgeons.

"4. As regards the suggestion contained in paragraph 1 of M. Haffkine's letter, the Plague Commissioner considers that it would be more economical to have the forms and observation sheets printed locally, and has informed M. Haffkine accordingly."

Resolution—A copy of M. Haffkine's letter, together with extract paragraphs 2—4 of the Plague Commissioner's memorandum, should be forwarded to the officers and departments concerned for information and guidance.

2. A copy should also be forwarded to the Government of India and other Governments for information.

No. 1463 P., 21st November 1898.

ORDER—No. 1463 P., dated 21st November 1898.

Communicated to the Plague and Sanitary Commissioners.

(True Extract.)

H. TREMENHEERE,
Secretary to Government.

To the Plague Commissioner.
" the Sanitary
" the Surgeon-General.
" all Collectors (A—L).

Government {1898} of Madras. LOCAL AND MUNICIPAL.

Recd.

Regd.

} 1898.

Enclosures

Spare copies

G.O., No. 1345 P., 21st October 1898.

OCTOBER.

Monsieur Haffkine's Plague Prophylactic.

Communicating to the Plague and Sanitary Commissioners letter from the Government of India forwarding a copy of the resolution of the Government of Bombay regarding the use of —.

No. 1345 P., 21st OCTOBER 1898.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper:—

From R. NATHAN, Esq., Under Secretary to the Government of India, Home Department (Sanitary—Plague), to the Secretary to the Government of Madras, Local and Municipal Department, dated Simla, the 5th October 1898, No. 4032.

I am directed to forward, for the information of the Governor in Council, a copy of a Resolution of the Government of Bombay, No. 4922—5208-P., dated the 2nd September 1898, and annexure, regarding the use of M. Haffkine's plague prophylactic.

ENCLOSURE.

EXTRACT from the Proceedings of the Government of Bombay, General Department (Plague), No. 4922—5208-P., dated Bombay Castle, the 2nd September 1898.

Read—

Letter from the Surgeon-General with the Government of Bombay, No. 11072, dated the 16th August 1898—

Forwards for information, with reference to paragraph 2 of Government Resolution, No. 3382—3751-P., dated 13th June 1898, and to Government Resolution, No. 4217—4457-P., dated 26th July 1898, the following letter, No. 423, dated 4th August 1898, from W. M. Haffkine, Esq., C.I.E.:—

“Referring to paragraph 2 of Government Resolution, No. 3382—3751-P., dated 13th June 1898, and to Government Resolution, No. 4217—4457-P., dated 26th July 1898, I have the honour to state that inoculated persons who are subsequently attacked with plague are as likely to convey infection as uninoculated attacked.

“The influence of inoculation on the spread of the disease consists in—

- (a) the number of cases being reduced; and
- (b) in the inoculated having a lesser tendency to fly from the affected places and to carry the disease elsewhere.

“As regards the nature of the contagion in inoculated attacked, though they themselves resist it at least twice easier than uninoculated, we have up to now no facts to show that the virus in them undergoes any special attenuation; nor were we able to detect a difference favourable in this respect in the duration of their illness when compared with the illness in uninoculated.

“In the outbreak in the Kirkee followers of Artillery, where the detection of the first symptoms of attack was the most thorough I know of, the inoculated who were attacked fatally resisted the disease for $1\frac{1}{2}$ days longer than the uninoculated (in the average 6 days compared with $4\frac{1}{2}$ days), while no marked difference was noticeable in the duration of the disease in those who recovered, and which was on the average 15 to 16 days.

“In connection with the danger from the inoculated attacked, I beg to state that operations are in progress in this laboratory with the object of attempting to further reduce the number of attacks amongst them; and I have little doubt that we shall succeed in that object.

No. 1345 P., 21st OCTOBER 1898.

“2. With regard to the last part of the same paragraph, Resolution, No. 3382—3751-P., I beg to attach a copy of the blank form which, according to the printed instructions accompanying the despatches of prophylactic, should be filled up for every person inoculated. Unfortunately we have noticed that, owing to the often unavoidable hurry in which the inoculations are done, some of the questions in the form are left unanswered. It may therefore be useful that more attention on the part of the plague officers be requested to this point, and especially to the answer of the question referring to the detailed address of the patient, as experience has shown that for the purpose of identification this particular is the most effective.”

Resolution—A copy of Mr. Haffkine's letter, with its accompaniments, should be forwarded to the officers and departments concerned for information, with a request that the instructions referred to in paragraph 2 thereof may be complied with.

2. A copy should also be forwarded to the Government of India for information with reference to their letter, No. 1682, dated the 8th July 1898.

3. M. Haffkine should be informed that Government will await receipt of the information asked for in paragraph 2 of Government Resolution, No. 3382—3751-P., dated the 13th June 1898.

No. 4922—5208-P. of 1898.

Submitted to the Government of India (with a copy of the accompaniments) for information.

Instructions for the use of the Plague Prophylactic.

Parcel to be opened and unpacked carefully. Any bottle found open, cracked or with the sealing-wax broken is to be sent back to the laboratory without being used. Prolonged exposure of the prophylactic to daylight is to be avoided.

2. The prophylactic is to be given by injection under the skin. For this purpose a hypodermic syringe of a suitable size is to be disinfected, in the beginning, by keeping it filled with a 5 per cent. solution of carbolic acid for 24 hours. After that, if the syringe is not used for other purposes, it will be sufficient to keep it filled for one hour before commencing operations. After the completion of each series of injections, the syringe is to be washed out with the same antiseptic solution. The needle is cleaned outside with a wet cotton pad soaked with carbolic lotion. Syringes may be obtained from the Plague Research Laboratory, Bombay.

3. Each bottle before being opened is to be shaken, and the contents well mixed up each time before being absorbed into the syringe.

4. For opening a bottle a pair of dissecting forceps is used, the branches being heated beforehand in a spirit lamp, and guarded from contact with any other unsterilized object.

5. While opening a bottle the mouth of it is passed several times through the flame of a lamp, and the sealing-wax melted. The cork is then withdrawn with the sterilized forceps, both branches of which are shoved in between the cork and the neck of the bottle, on two opposite sides of the cork simultaneously. After the bottle is opened any contact between its mouth and other unsterilized objects is to be avoided; and if contact inadvertently occurs, the mouth is to be heated again in the flame, for disinfecting it. The contents, or a part of it, is absorbed into the syringe. For this purpose the bottle is kept as nearly horizontal as possible.

6. For an adult man in average state of health the standard dose is $2\frac{1}{2}$ cubic centimeters (15 minims counting for 1 C.C.). This is to be injected under the skin of the back of the upper arm, preferably the left one, avoiding as carefully as possible the muscles or the big vessels. For a woman the dose is 2 C.C.: for weakly persons the initial injection is tried with a reduced dose. A child of 10 gets 1 C.C., of 3 years from 0.1 to 0.3 C.C. The symptoms commence as a rule 2 to 5 hours after inoculation, and consist chiefly of swelling and pain at the seat of inoculation, and of a rise of temperature. The pain is felt particularly on movement of the part. The

fever is accompanied by general discomfort usual to this condition. No treatment of the symptoms is required, beyond applying ice for the relief of head-ache, if any felt, and taking some rest. General symptoms subside after 24 to 36 hours; the pain at the seat of inoculation lasts for three or four days, disappearing gradually; a painless induration remains there for some time longer. It is desirable to produce a rise of temperature of at least 102° F. If the re-action is less marked, the operation may be repeated three or four days later, with the same or an increased dose, according to the result of the first inoculation. There is no harm in leaving a longer interval between the two inoculations, or in dividing the doses in several parts to be given at an interval of a few days. In case the supply of prophylactic is accompanied by a direction of doubling or trebling the *standard* doses, this should be attended to; please therefore note the instructions on the label of each bottle.

7. No changes in diet or occupation are necessary, beyond, if possible, taking some rest.

8. The prophylactic material is harmless, and can be thrown about without danger; but it is liable to get infected. A bottle, once opened, is therefore *not to be corked again*, but used up at once, or the rest of the contents thrown away. While a bottle is open, it should be guarded from insects flying or walking into it, or dust falling in. The empty bottles, the boxes and, if possible, also the cotton in which they were packed are to be returned to the laboratory.

9. In sealed-up bottles, and when kept in dark and sufficiently cool places, the prophylactic is likely to retain its power indefinitely.

10. It is requested that a detailed account of all operations done, and of any observations made, be communicated at the earliest convenience to the Plague Research Laboratory, Bombay,—the *inoculation forms* supplied being filled up at the time of inoculation, and the occurrence of plague in families of the inoculated being noted, as soon as the information is obtained, in the *observation sheets*.

Occurrence of Plague in houses inhabited by Persons inoculated against the Plague.

Full Address.	Names, sexes and ages of the <i>inoculated</i> persons who were living in the house on the date of attack, with the dates of their inoculation.	Names, sexes and ages of the <i>uninoculated</i> persons who were living in the same house on the date of attack.
	Name, sex, age of the attacked, if he is amongst the <i>inoculated</i> ; date of onset of disease, symptoms, issue.	Name, sex, age of the attacked, if he is amongst the <i>uninoculated</i> ; date of onset of disease, symptoms, issue.

No.

Sex—

Age—

Name in full—

Caste—

Occupation or Title—

Birth-place—

Present Address—

General Health—

Date of Inoculation and Dose—

Remarks—

ORDER—No. 1345 P., dated 21st October 1898.

Communicated to the Plague and Sanitary Commissioners.

(True Extract.)

H. TREMENHEERE,
Secretary to Government.

To the Plague Commissioner.

„ the Sanitary Commissioner.

„ the Surgeon-General.

„ all Collectors (A to L).

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2. The prophylactic is to be given by injection under the skin. For this purpose a hypodermic syringe of a suitable size is to be disinfected, in the beginning, by keeping it filled with a 5 per cent. solution of carbolic acid for 24 hours. After that, if the syringe is not used for other purposes, it will be sufficient to keep it filled for one hour before commencing operations. After the completion of each series of injections, the syringe is to be washed out with the same antiseptic solution. The needle is cleaned outside with a wet cotton pad soaked with carbolic lotion. Syringes may be obtained from the Plague Research Laboratory, Bombay.

3. Each bottle before being opened is to be shaken, and the contents well mixed up each time before being absorbed into the syringe.

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5. While opening a bottle the mouth of it is passed several times through the flame of a lamp, and the sealing-wax melted. The cork is then withdrawn with the sterilized forceps, both branches of which are shoved in between the cork and the neck of the bottle, on two opposite sides of the cork simultaneously. After the bottle is opened any contact between its mouth and other unsterilized objects is to be avoided; and if contact inadvertently occurs, the mouth is to be heated again in the flame, for disinfecting it. The contents, or a part of it, is absorbed into the syringe. For this purpose the bottle is kept as nearly horizontal as possible.

6. For an adult man in average state of health the standard dose is 2½ cubic centimeters (15 minims counting for 1 C.C.). This is to be injected under the skin of the back of the upper arm, preferably the left one, avoiding as carefully as possible the muscles or the big vessels. For a woman the dose is 2 C.C.: for weakly persons the initial injection is tried with a reduced dose. A child of 10 gets 1 C.C., of 3 years from 0.1 to 0.3 C.C. The symptoms commence as a rule 3 to 5 hours after inoculation, and consist chiefly of swelling and pain at the seat of inoculation, and of a rise of temperature. The pain is felt particularly on movement of the part. The

fever is accompanied by general discomfort usual to this condition. No treatment of the symptoms is required, beyond applying ice for the relief of head-ache, if any felt, and taking some rest. General symptoms subside after 24 to 36 hours; the pain at the seat of inoculation lasts for three or four days, disappearing gradually; a painless induration remains there for some time longer. It is desirable to produce a rise of temperature of at least 102° F. If the re-action is less marked, the operation may be repeated three or four days later, with the same or an increased dose, according to the result of the first inoculation. There is no harm in leaving a longer interval between the two inoculations, or in dividing the doses in several parts to be given at an interval of a few days. In case the supply of prophylactic is accompanied by a direction of doubling or trebling the *standard* doses this should be attended to; please therefore note the instructions on the label of each bottle.

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9. In sealed-up bottles, and when kept in dark and sufficiently cool places, the prophylactic is likely to retain its power indefinitely.

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Occurrence of Plague in houses inhabited by Persons inoculated against the Plague.

Name in full—
Caste—
Occupation or Title—
Birth-place—
Present Address—
General Health—
Date of Inoculation and Dose—
Remarks—

Sex-

Age—

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(Plague), No. 5778—5870-P., dated Bombay Castle, 17th October 1898.

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Communicated to the Plague and Sanitary Commissioners.
(True Extract.)

for Secretary to Government.

To the Plague Commissioner.
" the Sanitary
" the Surgeon-General.
" all Collectors (A—L).



No. 5894 P. OF 1898.

GENERAL DEPARTMENT (PLAGUE).

Bombay Castle, 18th October 1898.

FROM

THE HONOURABLE MR. A. WINGATE, C.I.E., I.C.S.,
Acting Chief Secretary to Government.

TO

The Secretary to the
Government of Madras,
Local and Municipal Department.

SIR,

I am directed to forward for the information of the Government of Madras a copy of the accompanying Resolutions issued by this Government No. 4922, dated 2nd September and 5208 P. 5778 dated 17th October 1898, regarding the influence and method of use of Monsieur Haffkine's Serum and instructions in connection with inoculation with the serum.

Submitted in
80.1345 P.
21-10-98

I have the honour to be

Sir,

Your most obedient servant

Mutahia

For Acting Chief Secretary to Government.

General Department (Plague).

No. ⁴⁹²²_{5208-P.}

Bombay Castle,
2nd September 1898.

Letter from the Surgeon-General with the Government of Bombay, No. 11072, dated the 16th August 1898--

Forwards, for information, with reference to paragraph 2 of Government Resolution No. ³³⁸²_{3751-P.}, dated 13th June 1898, and to Government Resolution No. ⁴²¹⁷_{4457-P.}, dated 26th July 1898, the following letter No. 423, dated 4th August 1898, from W. M. Haffkine, Esq., C.I.E.:-

"Referring to paragraph 2 of Government Resolution No. ³³⁸²_{3751-P.}, dated 13th June 1898, and to Government Resolution No. ⁴²¹⁷_{4457-P.}, dated 26th July 1898, I have the honour to state that inoculated persons who are subsequently attacked with plague are as likely to convey infection as uninoculated attacked.

"The influence of inoculation on the spread of the disease consists in

- (a) the number of cases being reduced; and
- (b) in the inoculated having a lesser tendency to fly from the affected places and to carry the disease elsewhere.

"As regards the nature of the contagion in inoculated attacked, though they themselves resist it at least twice easier than uninoculated, we have up to now no facts to show that the virus in them undergoes any special attenuation; nor were we able to detect a difference favourable in this respect in the duration of their illness when compared with the illness in uninoculated.

"In the outbreak in the Kirkee followers of Artillery, where the detection of the first symptoms of attack was the most thorough I know of, the inoculated who were attacked fatally resisted the disease for $1\frac{3}{4}$ days longer than the uninoculated (in the average 6 days compared with $4\frac{1}{4}$ days), while no marked difference was noticeable in the duration of the disease in those who recovered, and which was on the average 15 to 16 days.

"In connection with the danger from the inoculated attacked, I beg to state that operations are in progress in this Laboratory with the object of attempting to further reduce the number of attacks amongst them; and I have little doubt that we shall succeed in that object.

"2. With regard to the last part of the same paragraph, Resolution No. ³³⁸²_{3751-P.}, I beg to attach a copy of the blank form which, according to the printed instructions accompanying the despatches of prophylactic, should be filled up for every person inoculated. Unfortunately we have noticed that owing to the often unavoidable hurry in which the inoculations are done, some of the questions in the form are left unanswered. It may therefore be useful that more attention on the part of the plague officers be requested to this point, and especially to the answering of the question referring to the detailed address of the patient, as experience has shown that for the purpose of identification this particular is the most effective."

RESOLUTION.—A copy of M. Haffkine's letter* with its accompaniments should be forwarded to the officers and Departments concerned for information with a request that the instructions referred to in paragraph 2 thereof may be complied with.

2. A copy should also be forwarded to the Government of India for information with reference to their letter No. 1682, dated the 8th July 1898.

* Printed on pages 3 and 4.

3. M. Haffkine should be informed that Government will await receipt of the information asked for in paragraph 2 of Government Resolution No. 3382—3751-r, dated the 13th June 1898.

A. CUMINE,
Acting Secretary to Government.

To

The Plague Commissioner,
The Surgeon General with the Government of Bombay,
The Sanitary Commissioner for the Government of Bombay,
The Municipal Commissioner for the City of Bombay,
The Commissioner in Sind,
The Commissioner, N. D.,
The Commissioner, C. D.,
The Commissioner, S. D.,
All Collectors, including the Collectors and Deputy Commissioners in Sind,
The Health Officer of the Port of Bombay,
All Political Agents and Superintendents,
The Private Secretary to His Excellency the Governor,
W. M. Haffkine, Esq., C.I.E.,
All Departments of the Secretariat (except the Separate and Legislative),
The Government of India (by docket).

INSTRUCTIONS FOR THE USE OF THE PLAGUE PROPHYLACTIC.

1. Parcel to be opened and unpacked carefully. Any bottle found open, cracked or with the sealing wax broken, is to be sent back to the Laboratory without being used. Prolonged exposure of the prophylactic to daylight is to be avoided.

2. The prophylactic is to be given by injection under the skin. For this purpose a hypodermic syringe of a suitable size is to be disinfected, in the beginning, by keeping it filled with a 5 per cent. solution of carbolic acid for 24 hours. After that, if the syringe is not used for other purposes, it will be sufficient to keep it filled for one hour before commencing operations. After the completion of each series of injections the syringe is to be washed out with the same antiseptic solution. The needle is cleaned outside with a wet cotton pad soaked with carbolic lotion. Syringes may be obtained from the Plague Research Laboratory, Bombay.

3. Each bottle before being opened is to be shaken, and the contents well mixed up each time before being absorbed into the syringe.

4. For opening a bottle a pair of dissecting forceps is used, the branches being heated beforehand in a spirit lamp, and guarded from contact with any other unsterilised object.

5. While opening a bottle, the mouth of it is passed several times through the flame of a lamp, and the sealing wax melted. The cork is then withdrawn with the sterilised forceps, both branches of which are shoved in between the cork and the neck of the bottle, on two opposite sides of the cork simultaneously. After the bottle is opened any contact between its mouth and other unsterilised objects is to be avoided; and if contact inadvertently occurs, the mouth is to be heated again in the flame, for disinfecting it. The contents, or a part of it, is absorbed into the syringe. For this purpose the bottle is kept as nearly horizontal as possible.

6. For an adult man, in average state of health, the *standard dose* is $2\frac{1}{2}$ cubic centimeters (15 minims counting for 1 C. C.). This is to be injected under the skin of the back of the upper arm, preferably the left one, avoiding as carefully as possible the muscles or the big vessels. For a woman the dose is 2 C. C.; for weakly persons the initial injection is tried with a reduced dose. A child of 10 gets 1 C. C., of 3 years from 0.1 to 0.3 C. C. The symptoms commence as a rule 3 to 5 hours after inoculation, and consist chiefly of swelling and pain at the seat of inoculation, and of a rise of temperature. The pain is felt particularly on movement of the part. The fever is accompanied by general discomfort usual to this condition. No treatment of the symptoms is required, beyond applying ice for the relief of headache, if any felt, and taking some rest. General symptoms subside after 24 to 36 hours; the pain at the seat of inoculation lasts for 3 or 4 days, disappearing gradually; a painless induration remains there for some time longer. It is desirable to produce a rise of temperature of at least 102° F. If the reaction is less marked, the operation may be repeated 3 or 4 days later, with the same or an increased dose, according to the result of the first inoculation. There is no harm in leaving a longer interval between the two inoculations, or in dividing the doses in several parts to be given at an interval of a few days. In case the supply of prophylactic is accompanied by a direction of doubling or trebling the *standard doses*, this should be attended to; please, therefore, note the instructions on the label of each bottle.

7. No changes in diet or occupation are necessary, beyond, if possible, taking some rest.

8. The prophylactic material is harmless, and can be thrown about without danger; but it is liable to get infected. A bottle, once opened, is, therefore *not to be corked again*, but used up at once, or the rest of the contents thrown away. While a bottle is open, it should be guarded from insects flying or walking into it, or dust falling in. The empty bottles, the boxes and, if possible, also the cotton in which they were packed, are to be returned to the Laboratory.

9. In sealed up bottles, and when kept in dark and sufficiently cool places, the prophylactic is likely to retain its power indefinitely.

10. It is requested that a detailed account of all operations done, and of any observations made, be communicated at the earliest convenience to the Plague Research Laboratory, Bombay,—the *inoculation forms* supplied being filled up at the time of inoculation, and the occurrence of plague in families of the inoculated being noted, as soon as the information is obtained, in the *observation sheets*.

Occurrences of Plague in Houses inhabited by Persons inoculated against the Plague.

Full Address.	Names, sexes and ages of the inoculated persons who were living in the house on the date of attack, with the dates of their inoculation.	Names, sexes and ages of the un-inoculated persons who were living in the same house on the date of attack.
	Name, sex, age of the attacked, if he is amongst the inoculated; date of onset of disease, symptoms, issue.	Name, sex, age of the attacked, if he is amongst the un-inoculated; date of onset of disease, symptoms, issue.

No.

Name in full—

Caste—

Sex—

Age—

Occupation or Title—

Birth-place—

Present Address—

General Health—

Date of Inoculation and Dose—

Remarks—

Plague.—

Inoculation.

M. Haffkine's prophylactic serum.

Instructions regarding —.

General Department (Plague).

No. 5778
5870-P.

Bombay Castle,
17th October 1898.

Memorandum from the Plague Commissioner, No. 2380, dated the 1st October 1898—

Submits the following letter No. 586, dated the 23rd September 1898, from Monsieur W. M. Haffkine, C.I.E., together with copy of one from the Collector of Ahmednagar, to which it is a reply:—

"With reference to the Acting Collector of Ahmednagar's letter No. 9516, dated 19th instant, forwarded with your No. 2299, dated Bombay, 21st idem, I have the honour to state that the following are the arrangements which I have introduced for the present and which, of course, are subject to any modifications you may suggest.

"Plague prophylactic, syringes, printed instructions and *sample copies* of inoculation forms, certificates and observation sheets are supplied from the "Plague Research Laboratory," "Khoshroo Lodge" Bungalow, Nesbit Lane, Mazagon, Bombay, upon an indent forwarded, either through the Plague Commissioner, or the Surgeon General with the Government of Bombay, or direct to the Laboratory. Inoculation forms and observation sheets are to be printed locally according to the supplied samples. An arrangement, however, might perhaps be made similar to that described for the supply of inoculation certificates in paragraph 2 of Government Circular No. 2178,* dated Bombay, 2nd September 1898.—In Bombay, the forms are supplied by the Health Department of the Municipality.

"2. Within the Bombay Presidency proper no charges for the prophylactic are made, and syringes are supplied (on loan) and repairs executed without charge. The addressee is only requested to pay railway freight on receipt of the parcels and on returning the empty bottles and the syringes.

"3. Outside the Bombay Presidency as well as in the independent States within the Presidency a nominal charge for the prophylactic is made of 2 pice a dose, and syringes are sold at their cost-rate or as nearly that rate as possible. The sum received were, up to 29th August 1898, forwarded to the Accountant General, Bombay, direct; since the above date, upon a request from the Accountant General, they are deposited in the Bank of Bombay and the cash recovery receipts remitted to the Accountant General.

"A copy of the books† in which the record of all despatches, paid and unpaid, is kept is herewith forwarded.

† Returned to M. Haffkine.

"4. Demands from Government, Civil, Military and Medical Officers, from Municipalities and from officials in Native States are met with immediately; whereas private practitioners are requested to furnish a recommendation from the local Magistrate, or, in Bombay, from the Health Officer; after which, in regard to the supply of prophylactic syringes, etc., they are treated on the same lines as officers in Government employ. This admission of private practitioners, recommended by the authorities, to the same facilities as those afforded to Government officers has been found to be an important factor in removing opposition and popularising the treatment.

"5. With regard to paragraph 4 of the Acting Collector's letter, I concur with Surgeon-Major W. A. Corkery's view as to the facility with which the rules of the inoculation *technique* can be learned by Subordinate Medical officers. The non-compliance with any of those rules may, however, cause accidentally regrettable results. It is, therefore, desirable that a selection of the most careful among the subordinates be made, and that they should be deputed first to work for a short time at least in a place where inoculations are being done under Commissioned Medical Officers.

"6. Moreover, I would venture to mention here that while it is fairly safe to trust a careful subordinate in charge of a local dispensary with performing inoculation in a place where a spontaneous demand to that effect has arisen, or where the medical subordinate has had himself the inspiration of talking on the subject to the local residents, and unconsciously creating a demand, it is desirable that where such a demand does not yet exist, the subordinates should not be commissioned to preach or popularise the idea, exception of course being made for particularly able and authoritative men, enjoying confidence and influence among the inhabitants. The reason of this evidently being that an awkward attempt at persuasion is liable to create opposition, resistance and, occasionally, unfounded apprehension. Until inoculation becomes better known in the country, it is desirable to request the local Magistrate and Civil Surgeons to try to introduce inoculation, at first, into places under their immediate control and after having personally ascertained that the leaders of the community have been won to the idea. I feel, however, that these considerations are outside my jurisdiction, and beg to be excused only on the score of a certain experience which I happened to have gained in this special line of work."

and states as follows:—

"2. The Plague Commissioner has the honour to recommend that this letter be printed and circulated with a special caution to officers to weigh carefully the remarks in paragraphs 5 and 6 before permitting inoculation by subordinates not under immediate supervision.

"3. The Surgeon General might be asked to issue similar caution to all Civil Surgeons.

"4. As regards the suggestion contained in paragraph 1 of M. Haffkine's letter, the Plague Commissioner considers that it would be more economical to have the forms and observation sheets printed locally, and has informed M. Haffkine accordingly."

RESOLUTION.—A copy of Monsieur Haffkine's letter, together with extract paragraphs 2—4 of the Plague Commissioner's memorandum, should be forwarded to the officers and Departments concerned for information and guidance.

2. A copy should also be forwarded to the Government of India and other Governments for information.

A. WINGATE,
Acting Chief Secretary to Government.

To

The Plague Commissioner,
The Surgeon General with the Government of Bombay,
The Sanitary Commissioner for the Government of Bombay,
The Municipal Commissioner for the City of Bombay,
The Commissioner in Sind,
The Commissioner, N. D.,
The Commissioner, C. D.,
The Commissioner, S. D.,
All Collectors, including the Collectors and Deputy Commissioners in Sind,

(For communication to District Superintendents of Police.)

The Health Officer of the Port of Bombay,
The Political Agents, Kolhápúr and Southern Marátha Country,
Káthiáwár, Cutch, Mabi Kántha and Rewa Kántha,
The Political Superintendents, Pálanpur and Sávantvádi,
The Accountant General,
The Superintendent of Mahábaleshvar,
The Private Secretary to His Excellency the Governor,
All Departments of the Secretariat (except the Separate and Legislative Departments),
Monsieur W. M. Haffkine, C.I.E.,

The Principal Medical Officer, Bombay Command,
(With a copy of Government Resolution No. 4922—5208-P., dated the 2nd September 1898.)

The Government of India,
The Government of Madras,
The Government of Bengal,
The Government of Burma,
The Government of the North-Western Provinces and Oudh,
The Government of the Punjáb,
The Chief Commissioner, Central Provinces,
The Resident at Hyderabad,
The Resident in Mysore,
The Agent to the Governor General at Baroda.

With a copy of Government Resolution No. 4922—5208-P., dated the 2nd September 1898.

By letter.

No. of 1898.

Copy forwarded for information and guidance to

Local & Munl. (1898) Department.

CURRENT No. 2314 P

From The Ag. Chief Secretary
to the Govt of Bombay

P.S.

Order 1463. P. 8/21-11-98.

Communicated to the
Plague and Sanitary Commission

No. 5894 P

L.R.
19/11/98

21/11/98

Dated 18-10-98

Received 25-10-98

Registered 27-10-98

Enclosures .

Spare copies.

Note - Resolution No 4922 has already been
communicated with P.O. No 1345 P.
21-10-98

To
The Plague Commr.
Sanitary Commr.
Surgeon-Genl.
All (Offrs) (A-d)

SUBJECT.

For forwarding for information copies
of Govt Resolutions Nos 4922 + 5178
5208P 5870P
dated 22 Sept and 17th Oct 1898 re-
spectively, about the influence
+ method of use of Mr. Haffkin's
serum.