To Press

Local & Munl. (1898) Department.

PRINTED.

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DATED 18 7 98

DESPATCHED

[Despatch Abstract.]

Inoculation Ordering the publication of Mons. Haffkine's report on preventive inoculation against plague in the Khoja Community of Bombay.

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. } 1898. *Enclosures*

Regd. *Spare copies*

G.O., No. 687 P., 18th July 1898.

JULY.

Inoculation against Plague.

Ordering the publication of Mons. Haffkine's report on preventive — in the Khoja community of Bombay.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

From W. M. HAFFKINE, Esq., C.I.E., to the Chief Secretary to the Government of Madras, dated Plague Research Laboratory, Mazagaon, Bombay, 11th July 1898, No. 342.

I have the honour to forward a report on the preventive inoculations against plague in the Khoja community of Bombay during the epidemic of 1897–98, and to request the favour of your kindly acknowledging its receipt.

ENCLOSURE.

REPORT on the preventive inoculations against plague in the Khoja community of Bombay, during the epidemic of 1897–98, by W. M. Haffkine, Esq., C.I.E.

Total of Khojas inoculated during the epidemic of 1897–98, and their average daily strength.

His Highness the Aga Khan's inoculation station at Mazagaon was opened on the 27th December 1897. Up to the 20th April 1898, inclusive, 5,000 Khojas (exactly) were inoculated at that station, and 184 others were done in municipal stations in the rest of the town, giving a total of 5,184 inoculated during the epidemic of 1897–98.

This number includes Khojas who had been inoculated already last year during the epidemic of 1896–97, and who presented themselves this year for re-inoculation. On the contrary, the Khojas inoculated last year, but not re-inoculated this year, are not included in the above number, and the analysis which follows does not refer to them.

The above number of Khojas was inoculated gradually. On the 27th December 1897, the opening day of the station, 33 were operated upon; on the 28th the number increased up to 66; on the 29th it increased up to 119; on the 30th up to 226; on the 31st up to 301; and so on. During the first 9 weeks the number was increasing steadily, and on the last day of February it reached 4,719. During the other $7\frac{1}{2}$ weeks the total number increased only by 465. Taking the daily strength of the inoculated during the whole period of $16\frac{1}{2}$ weeks, the average appears as 3,814. In the following comparative analysis the mortality in the inoculated is considered as having occurred not in 5,184 individuals, which is the number reached at on the last days of the operations, but in a number of 3,814 individuals only, which is the *average* daily strength taking the above period as a whole.

The average daily strength of the Khojas who remained uninoculated.

A census of the Khojas of Bombay taken in the beginning of 1898, by the officers of the Khoja Jamát, under the orders of His Highness the Aga Khan, showed the total community to be numbering 9,350 souls.

A certain number of families were, however, away when the census was being taken, on account of the epidemic, and their number could not be obtained accurately.

The following figures are, therefore, taken as giving a safe foundation for all the necessary considerations.

The annual Khoja mortality in years free from plague, as registered in the burial-ground books of the Jamát office, was—

In 1892	385
„ 1893	301
„ 1894	335
„ 1895	349

giving an average of 342 deaths in a year.

The mean mortality in the population of Bombay is close upon 35 per mille per annum.

Counting for the Khojas a mortality per mille per annum of 25 only, the average of 342 deaths a year gives a population of 13,680, which is likely to be higher than the actual number. During the epidemic of plague which preceded the $16\frac{1}{2}$ weeks under consideration, the Khojas had 350 deaths in excess of their average mortality. The above number of persons in the community should therefore be reduced by 350, giving a population of 13,330.

This number, apparently exaggerated, which exceeds that found during the census by nearly 4,000 (by over $\frac{2}{3}$) is adopted in the following calculations as representing the real Khoja population of Bombay, and the proportion of inoculated and uninoculated is accepted to be as follows :—

Average daily strength of inoculated	3,814	(accurate number).	
„ „ of uninoculated	9,516	(approximate, probably exaggerated number, which includes also those inoculated last year and not re-inoculated during the epidemic of 1897–98).	
Total ...	13,330		

By thus calculating upon an exaggerated strength of the uninoculated, the risk of exaggerating their death-ratio during the epidemic under consideration is avoided.

Total number of deaths in Inoculated and Uninoculated, which took place during the period under consideration.

During the $16\frac{1}{2}$ weeks, between the 27th December 1897 and the 20th April 1898, 184 deaths in all occurred in the Khoja community. Of these, six including two of plague, took place in Khojas inoculated in the epidemic of 1896–97, and not re-inoculated since; seven deaths, including three of plague, occurred in the 5,184 Khojas inoculated or re-inoculated this year; and 171 deaths occurred in the uninoculated Khojas.

Number of deaths from plague in Khojas during the period under consideration.

In the years 1892 to 1896, while there was no plague in Bombay, the mortality in Khojas during the same part of the year, between the 27th December and 20th April, was 131, 96, 100, 106 and 96, respectively, or on the average 105, in a normal population of 13,680 individuals. In the reduced population of 13,330 as it stood at the beginning of the period under consideration, it should have been proportionately 102. The advent of the plague may have altered the course of the mortality, namely, the liability to deaths from other causes than plague may have been influenced by the fact

that, during the plague year *preceding* the period under consideration, double the usual number of individuals had been carried away by death. The normal mortality must have been also reduced by a part of the community having left the city. Admitting, however, that, of the total number of 184, fully the usual proportion of 102 died of other causes than plague, there remain 82 deaths in excess of that number which are attributable to plague alone. Sixty-four of this number were actually acknowledged as plague deaths by the relatives of the deceased or certified as such by the Khoja Jamát books.

Of the 102 deaths attributable to other causes, four occurred in inoculated this year, four in inoculated last year, and the rest, 94, in uninoculated.

Of the 82 deaths attributable to plague, three occurred in inoculated this year, two in inoculated last year, and 77 in uninoculated.

The names, sexes and ages, and full addresses of all these 184 persons are given in the Appendices Nos. II and IV. These data have been very carefully verified, in all their details, from the Jamát and the inoculation documents, and by means of a minute house-to-house investigation carried out by Mons. Haffkine personally.

The distribution of deaths among the inoculated and uninoculated is as follows :—

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3,814 inoculated this year (accurate number) had three deaths from plague and four deaths from other causes.

Admitting that among the uninoculated not more than the above proportion of deaths was due to plague, and supposing that the inoculated had remained, after inoculation, as susceptible to disease as were the uninoculated, they should have had, according to their relative strength, 31 deaths from plague and 38 deaths from other causes.

The actual result is the most striking of all that have been observed up to now.

Among the 77 uninoculated who died of plague, there was one babe below 3 years of age, and four people above 60, giving a total of five deaths. Among the 94 uninoculated who died of other causes than plague, there were 33 deaths in babies of 3 years and below, and 23 in people above 60, giving a total of 56 deaths.

The proportion of individuals of these two extremes of ages who were inoculated, was very considerable, but smaller than their proportion among the uninoculated (see Appendix No. I). In order to eliminate this source of possible error, the five deaths from plague and 56 deaths from other causes, which occurred in uninoculated outside the age of 3 to 60 years, may be excluded from the comparison altogether, and after that the figures are still as follows :—

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The difference in the mortality in the Uninoculated and Inoculated Khojas.

This represents a difference of 89·7 per cent. of deaths from plague in favour of the inoculated part of the community, and of 73·3 per cent. of deaths from what has been returned as "other causes," in favour of the same part of the community.

After making all allowances for inaccurate classification of deaths in the uninoculated group, with which the inoculated is being compared, and admitting that a part of the excess of deaths in the uninoculated may be due to a certain number of sickly people having abstained from inoculation, the result still contains an indication that, besides the protection against plague, this inoculation influences also favourably the resistance to certain other diseases than plague, a fact with regard to which exact material is since some time being accumulated in the Research Laboratory.

APPENDIX No. I.

TABLE permitting of a comparison between the Inoculated and Uninoculated groups of Khojas as regards their sexes and ages.

Age.		Up to 3 years.	4 to 7 years.	8 to 15 years.	16 to 45 years.	46 to 60 years.	61 years and upwards.
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The report will be published in English and in the vernaculars in the Fort St. George and all District Gazettes. The Translators to Government are requested to furnish the Superintendent, Government Press, with the necessary translations.

(True Extract.)

H. TREMENHEERE,
Secretary to Government.

To all Collectors (A, F and G).
„ the Translators to Government.
„ the Surgeon-General.
„ the Sanitary Commissioner.
„ the Superintendent, Government Press.
„ the Political Department.
Gazette.

Exd. C. M. Thumbusawmy.

Govt 8/8

Government {1898} of Madras.

LOCAL AND MUNICIPAL.

S. A

Proof Submitted for approval.

Ah 6/8/98

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Regd. *Spare copies*

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Press

The marginal note on the draft required only to set forth purpose of the published, but it has been misunderstood and a large quantity of matter has been needlessly printed. Please correct & strike off

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	Total ..	266	535	1,342	2,405	392	73

APPENDIX No. II.

(To be compared with Appendix No. IV.)

NAMES AND PARTICULARS OF THE *inoculated* KHOJAS WHO DIED BETWEEN THE 27TH DECEMBER 1897 AND 20TH APRIL 1898.

Names and particulars of the seven Khojas inoculated during the epidemic of 1897–98 who died of plague or other causes.

(*a*)—*Died of Plague.*

Mahamad Visram, male, 24, of Palla Galli.
Purbai, wife of Punja Ladha, 55, of Chinchpokli.
Mirium, grand-daughter of Hassam Somji, 3 years, of Kandi Moholla.*

(*b*)—*Died of Other Causes.*

Katija, daughter of Naoroji Jan Mahamad, 2½ years, of Darga Moholla.
Mithibai, wife of Hasan Ladha, 24 years, of Kharak.
Chagbai, wife of Jan Mahamad Virji, 50 years, of Kandi Moholla.
Gulam Husein Alladin, male, 20 years, of Kharak.

Names and particulars of the six deceased Khojas inoculated during the epidemic of 1896–97, who died of plague or other causes during the period between the 27th December 1897 and 20th April 1898.

(*a*)—*Died of Plague.*

Gulam Husein Merally, grandson of Hasam Shivji, 6 years, of Darga Moholla.
Sakinabai, wife of Dost Mahamad Hassan, 25 years, of Dungri.†

(*b*)—*Died of Other Causes.*

Sakina, daughter of Jivraj Asar, 11 years, of Two Tanks.
Rehmatbai, wife of Samji Hirji, 20 years, of Kandi Moholla.
Fatma, daughter of Ismail Asar, 12 years, Jamátkhána, Dungri.
Sakinabai, wife of Musa Jaffer Pardhan, 19 years, of Palla Galli.

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* With regard to this patient see Dr. Ismail Jan Mahomad and Dr. Bahadurji's letters, p. 7.
† See Dr. M. B. Lam's letter, p. 5.

APPENDIX No. III.

RESULT OF THE ENQUIRY AS TO THE CAUSE OF DEATH IN INOCULATED KHOJAS WHO DIED OF DISEASES OTHER THAN PLAGUE, OR OF DOUBTFUL CAUSES.

The following circular letter was sent round to all the medical practitioners who were reported by the relatives to have treated the deceased during their illness:—

PLAGUE RESEARCH LABORATORY, MAZAGAON.
Bombay, 28th April 1898.

To

DR. _____ (name of the Physician).

DEAR SIR,

_____ (name, sex, and age of the deceased), residing at _____ (full address), had been inoculated against plague on _____ (date).

He (or she) died on _____ (date), and the parents stated that the cause of death was _____ (quoted the given cause of death). As I have been informed that the patient had been under your treatment, I write to ask you to kindly let me know what, in your opinion, the real cause of death was, and whether there were indications of symptoms which would render it possible to ascribe the death to plague.

I am, Sir,
Yours truly,
W. M. HAFFKINE.

The following replies were received:—

Correspondence regarding Mirium, grand-daughter of Hassam Somji.

Bombay, May 23rd 1898.

To

PROFESSOR HAFFKINE.

RESPECTED SIR,

Yours of the 28th April to hand. With reference to that I beg to state that the girl in question, whose case I remember very well, viz., Mariambai, grand-daughter of Hassam Somji, was brought to me by her father on the morning of the 25th February for fever and cough.

On examination, I found that there was slight congestion of the base of her right lung and consequent dulness, with temperature 101°. I prescribed for her next day, *i.e.*, on the 26th; the same medicine was taken by her father in my absence.

After the 26th till the date of her death, *i.e.*, 7th March, she was not under my treatment.

Under these circumstances I am quite unable to form a correct opinion as to the immediate cause of her death.*

Hoping this would serve your purpose.

I beg to remain,
Your obedient Servant,
M. B. LAM, L.M. & S.

Correspondence regarding Katija, daughter of Naoroji Jan Mahomed.

MEDICAL AND SURGICAL HALL, KHADAK;
Bombay, 1st May 1898.

DEAR SIR,

In answer to your letter, dated 28th ultimo, I have the pleasure to inform you that Khatija, daughter of Navroz Jan Mahomed, died of tubercular meningitis, and not of plague.

She was suffering for a long time and had no symptoms of plague.

Yours obediently,
DOSABHAI K. PATEL.

* The symptoms admitting the possibility of pneumonic plague, the case is accepted as being a case of plague in inoculated (See Appendix No. II, p. 5), on the same principle as mentioned in the foot-note on page 7.
W. H. HAFFKINE.

Correspondence regarding Mithibai, wife of Hassan Ladha.

To

PROFESSOR W. M. HAFFKINE, C.I.E.

KHADAK,
5th May 1898.

DEAR SIR,

With reference to your letter of the 28th of April 1898, regarding one Mithibai, wife of Hassan Ladha, Khoja, aged 25 years, residing at Nishanpada Street, No. 106, who had been inoculated against plague twice this year, and died on the 8th of April 1898, I hereby declare that she was under my treatment for choleraic diarrhœa, which brought about miscarriage.

This shortened the life of the patient. There was no symptom whatsoever to render it possible to ascribe the death to plague.

I am, Sir,
Yours faithfully,
J. B. DEQUADROS, L.R.C.P.

Correspondence regarding Chagbai, wife of Jan Mahomed Virjee.

I.

FOUNTAIN HOUSE, MAHABLESHWAR,
2nd May 1898.

To

DR. W. M. HAFFKINE.

DEAR SIR,

I have received your letter about the supposed cause of death of my patient Bai Chagbai. About six months before, when she was under my treatment, she was suffering from chyluria and elephantiasis about her mammary glands, with high fever; also she was suffering from fatty degeneration about the heart.

I think she must have died from a severe attack of cellulitis consequent from the previous nature of her disease.

I remain,
Yours truly,
ERACHSHAW JAMSHEDJEE HAKIM,

II.

KHETWADY, 12TH LANE, BOMBAY,
2nd May 1898.

To

PROFESSOR HAFFKINE.

DEAR SIR,

In reply to your enquiry of the 28th ultimo regarding Chagbai, widow of Jan Mohammed Virjee, Khoja, I beg to state that Chagbai was subject to periodic attacks of elephantiasis of the breasts. The last attack was an exceptionally strong one, the fever and inflammation being of a more aggravated character, affecting the head producing delirium and coma, ending in death on the 3rd April last.

I am of opinion that the cause of death was *not* plague at all, but elephantiasis of the breast.

I am, Sir,
Yours truly,
HIRJIBHOY JAMSETJI APPOO, L.M. & S.

Correspondence regarding Gulam Hussain Aladin.

KHADAK,
8th May 1898.

To

W. M. HAFFKINE, Esq.

DEAR SIR,

Gulam Hussain Aladin died of Phthisis; no signs of Plague about him. I am unable to give you any information about Sakina, daughter of Jivraj Assar. I believe Dr. Blaney treated her.*

I am, Sir,
Yours truly,
A. F. PEREIRA.

Correspondence regarding Sakinabai, wife of Dost Mahomed Hassan.

I.

22, FALKLAND ROAD BOMBAY,
6th May 1898.

DEAR DR. HAFFKINE,

Many thanks for your letter of the 4th May. Sakinabai, wife of Dost Mahomed Hassan, Khoja, female, 25 years, was residing at 2nd Chinch Bunder Road, No. 583-585. She was under my treatment for fever after confinement; she had puerperal fever; she did not suffer from Plague.

I am,
Yours very truly.
ISMAIL JAN MAHOMED.

II.

BOMBAY,
19th May 1898.

FROM

DR. K. N. BAHADURJI,

To

W. M. HAFFKINE, Esq., C.I.E.

DEAR SIR,

It appears that the case of Sakinabai at Chinch Bunder you refer to was seen by me with Dr. Ismail J. Mahomed. My impression was that the case was one of plague. But Dr. J. Mahomed who watched the case before and after my seeing her assures me that she died of puerperal fever. I have had similar cases to treat in my hospital and they were taken as plague septicæmia.†

Yours sincerley,
K. N. BAHADURJI, M.D.

* See on next page another letter from Dr. A. F. Pereira, and the letters from Drs. Blaney and Hakim.
† The opinion that the case was due to plague was adopted (See Appendix No. II, p. 5), as in all contradictory statements the view adverse to the inoculation is given preference in these Reports.

Correspondence regarding Sakina, daughter of Jivraj Assar.

I.

KHADUCK,
19th May 1898.

To W. M. HAFFKINE, Esq.

DEAR SIR,

I have inquired from the Khoja Jamat Khana and I am given to understand that Sakina, daughter of Jivraj Assar, died of Consumption.

I am Dear Sir,
Yours truly,
A. F. PEREIRA.

9th May 1898.

II.

DEAR SIR,

I only saw the deceased girl Sakina at long intervals. She was suffering from advanced Phthisis. I heard nothing about inoculation during life, and only know of her death from her friends. I am unable to say whether she had Plague during any period of her illness.

Yours truly,
THOMAS BLANEY.

III.

ISMAIL HOUSE, MAHABLESHWAR,
8th May 1898.

To DR. W. M. HAFFKINE.

DEAR SIR,

In reply to your letter of the 4th May 1898, about the cause of death of Bai Sakina Jairaj Assar, who was inoculated on the 1st April 1897, and who died on 5th March 1898 of Phthisis, I have some reason to believe, not by mere bare imagination, that in certain constitutions this serum has some tendency to weaken the body and develop or hasten to a state of consumption.

A Parsi girl of sound constitution and no hereditary predisposition was inoculated at Poona on the 25th March 1897 at Council Hall. Three months after she began to suffer from slight fever and now she shows some signs of Phthisis. The patient's name is Bai Merbaiji Rustomji Byramji Jijibhoy.

I remain,
Yours sincerely,
ERACHSHAW J. HAKIM.

P.S.—If you believe this possibility in some cases, and if you know or advise something which may do some good in such class of cases, kindly let me know about it.

IV.

Reply by Dr. W. M. Haffkine to Dr. E. J. Hakim's question.

PLAGUE RESEARCH LABORATORY, MAZAGAON,
Bombay, 9th May 1898.

DEAR DR. HAKIM,

I thank you for the information contained in your letter of 8th instant. I am forwarding to your address a pamphlet on the protective inoculation against Plague, where, on page 6, you will find the answer to a question similar to yours, which had been put to me by Dr. S. H. Mody.*

* The passage referred to is reproduced hereafter.

You will see from the report, which will be published shortly, on the mortality among Khojas during the first quarter of the current year, that in 3,814 inoculated Bombay Khojas seven deaths from all causes have occurred, including that of your patient Bai Sakina Jivraj Assar; while in 9,516 uninoculated there were 171 deaths from all causes.

This shows that there is no ground whatever to ascribe to inoculation the causing of any disease or the hastening of death from any cause,—seeing that the *total* mortality in inoculated was so strikingly smaller than the total mortality in persons who had not been inoculated.

Thanking you again for the information supplied,

I am,

Yours faithfully,

W. M. HAFFKINE.

V.

Extract from the pamphlet on "The Protective Inoculation against Plague," Poona, 3rd January 1898, mentioned in the letter from Dr. W. M. Haffkine to Dr. Erachshaw J. Hakim.

"QUESTION BY DR. S. H. MODY.

Q.—Is it a fact that persons who are predisposed to certain diseases get the same degree of excitement after inoculation?

A.—Originally we were on our guard against that, and we adopted once for all the following proceeding. Every time a person who wishes to be inoculated informs us that he is suffering from any chronic or recurring complaint, we allow him to get first a very mild, tentative dose. If that dose does not cause him any inconvenience, we give him either the rest in one injection, or, if there is reason to be cautious, we continue to divide the rest into fractions. We have never had reason to ascribe the least ill-effect to the operation, and very soon we adopted the rule to refuse it only to persons who have *fever* on them at the time when they present themselves for inoculation, or who had fever a day or two before. This exception is made for two reasons:

(1) A person having fever on him may be in the beginning stage of plague. Although, in our experience, we had no indication that inoculation aggravates the condition of such a person, it is not likely, however, to effect any good either. Under these circumstances, and seeing that such cases are likely to create confusion in the public mind as to the effect of inoculation, it is important to avoid them as carefully as possible.

(2) If a person is suffering from any other fever, for instance, from an attack of malaria, the addition of the inoculation fever, coinciding with his own attack, may make him more than necessarily uncomfortable, and create analogous confusion as to the amount of reaction caused by inoculation.

In considering this question in general, one has to take into account the following circumstances: As I mentioned already, we inoculated in Bombay alone during the last cold season * close upon 8,200 persons. The age of these persons varied between 3 months and 83 years, no exception being made for persons of whatever constitutional disorders. Under these circumstances one may fairly admit that the inoculated, as regards their liability to general sickness, represented nearly the same average as the majority of the Bombay inhabitants. Now, under the best conditions, in an ordinary healthy year, without any abnormal influences of weather or other factors predisposing to sickness, the mortality in Bombay is close upon 35 per mille per annum. An average number of 8,200 people in Bombay should, therefore, have, in a year, not fewer than 246 deaths. For every person who actually dies in the course of a year there are probably not less than three who start some ailment, or contract for the first time some disease not actually fatal. So that, in a healthy year, in Bombay, 8,200

* *i.e.*, during the epidemic of 1896-97.

persons should have some 984 persons passing from a good state of health into an indifferent or bad one, or actually struck by death, without reference to any inoculation whatever.

The thousands of inoculated who do not happen to belong to this unfortunate group of 984, and who feel absolutely as fit after the inoculation as they felt before, do not say a word about it, and their existence does not attract attention. This is as it should be; but, as the same time, when one comes across a person who says he feels unwell in this year, consecutive to the time of his inoculation against Plague, it does not follow that his case is due to the inoculation.

In order to be absolutely sure in our reasoning, let us admit that, of the above number, 365 persons only, or as many as there are days in a year, instead of the 984 calculated above, should, in the ordinary course of events, pass from a good state of health into a bad one. This alone will show that we may have at least one person every day in the year who will begin to feel unwell from the day of inoculation, without this fact being due in the least to the fact of inoculation."

Correspondence regarding Rehmatbai, wife of Samji Hirji.

KHADAK, BOMBAY,
27th May 1898.

To

PROFESSOR W. M. HAFFKINE, C.I.E.

DEAR SIR,

In answer to your letters, dated 5th and 13th instant, I have the honour to inform you that I don't remember having treated Rehmatbai, wife of Samji Hirji, aged 20 years. But on careful enquiry I find that she died of Phthisis, and not of Plague.

Hoping to be excused for the delay,

Yours faithfully,

DOSABHAI K. PATEL.

Correspondence regarding Fatma, daughter of Ismail Assar.

9th May 1898.

To

PROFESSOR W. M. HAFFKINE, C.I.E.

DEAR SIR,

Fatma, daughter of Ismail Assar, died from Tubercular Consumption. This is all the information I can give you in reply to yours of the 4th instant, and can emphatically say that she did not die of Plague.

Yours truly,

A. G. VIEGAS.

Correspondence regarding Sakinabai, wife of Musa Jaffer Pardhan.

I.

CHINCH BANDAR, BOMBAY,
11th May 1898.

To

PROFESSOR W. M. HAFFKINE, C.I.E.

DEAR SIR,

I reply to your letter, No. 190 of 1898, I beg to say that Sakinabai, wife of Mr. Moosa Jaffer Pardhan, died of Tuberculosis of the stomach. She was in a fair state of health after inoculation in April 1897. Subsequently she had been in the

family way and delivered a son in November 1897. After delivery she suffered from intermittent fever, cough and irritability of the stomach. She did not die of Plague or its sequelæ.

Yours truly,
B. S. SHROFF.

II.

Khoja Molla,
9th May 1898.

To

Monsieur W. M. HAFFKINE.

Dear Sir,

I have to acknowledge the receipt of your letter, No. 194 of 1898, yesterday.

In reply I have to say that I treated Sakinabai, wife of Moosa Jaffer, in the months of November and December last, and saw her last on the day of her death, which took place on 19th March 1898. She was suffering from Stomatitis and extreme debility of the intestinal canal, accompanied by vomitting and chronic diarrhœa and fever, of which she died. There were not the slightest symptoms of Plague in the case.

I am, Sir,
Yours truly,
J. ACCACIO DA GAMA,
Physician to His Majesty the King of Portugal.

III.

Hormazd Villa, Cumballa Hill,
Bombay, 9th May 1898.

To

Professor W. M. HAFFKINE.

Dear Sir,

Your kind note, dated the 4th May, came to hand this morning, the envelope bearing the Post Office delivery mark of the 8th instant.

I well remember the patient Sakinabai residing at Dongri. She was ill with gastric ulcer and pain in the epigastrium due to that cause. She had had fever of a hectic character.

It was not at all possible to connect the cause of her death with any indications or symptoms which could be ascribed to Plague.

I remain,
Dear Sir,
Yours very faithfully,
R. N. KHORY.

APPENDIX No. IV.

Names and particulars of the *un-inoculated* Khojas who died between the 27th December 1897 and 20th April 1898.

Mazagaon.

Shakerbai, daughter of Ahmed Nandoo, 11 years, Nesbit Lane, Aga Hashamshah's house in His Highness Aga Khan's residence. Died of plague in the Khoja Hospital on 6th January 1898.

Parel Road, Lálwádi.

Noormahomed Tarmahomed Dharmsi, 22 years, Parel Road, near Richardson, Cruddas and Company, and near house No. 625. Died of plague at home on 15th February 1898.

Setbai, daughter of Tarmahomed Dharmsi, 12 years, Parel Road, near Richardson, Cruddas and Company, house No. 625. Died of plague in the Khoja Hospital on 17th February 1898.

Moti, wife of Alibhoy Mahomed, 18 years, Lálwádi, Parel, No. 104. Died on 27th February 1898.

Hussein, son of Karim, grandson of Poonja Ladtha, 6 months, Chinchpugli, Parel Road. Died on 1st March 1898.

Nanji Tejpal, 70 years, Kalichoki Road, No. 100. Died on 11th March 1898.

Byculla.

Aladin, son of Hirji Lovji Babool, 30 years, Haines Road, No. 102. Died of plague in the Khoja Hospital on 10th January 1898.

Ludtha Jaitha, 85 years, opposite Victoria Garden, near Tramway Company's stables. Died on 30th March 1898.

Mahomed Khimji Nanji, 30 years, Haine's Road, No. 212. Died on 7th April 1898.

Jacob's Circle, Sat Rasta.

Ali Munji, 34 years, Nágdevi Road. Died of plague in the Khoja Hospital on 14th January 1898.

Nágpáda.

Dhunji Megji, 50 years, Underia Street. Died of plague in the Khoja Hospital on 3rd March 1898.

Sekina, granddaughter of Gangji Haji, 6 months, Memonwáda Street, No. 506—508. Died on 1st April 1898.

Kámátipura.

Koowarbai, daughter of Manji, and wife of Purdhan Mitha, 26 years, Kámátipura Center Road, opposite the Church. Died of plague at home on 13th February 1898.

Noormahomed Damji, 56 years, Kámátipura Center Road, near house No. 122. Died on 12th April 1898.

Dunkey Dole.

Fijibai, daughter of Pirbai Khanbai, daughter-in-law of Ali Haji, 20 years, Upper Duncan Road, house No. 64. Died of plague at home on 30th December 1897.

Coorji Ruttansi, 65 years, Duncan Road, No. 502. Died on 19th January 1898.

Two Tanks.

Rehim Punchan, 35 years, English Road, near the Parsees' Aghiari (fire-temple). Died of plague in the Khoja Hospital on 23rd February 1898.

Kánda Wádi.

Serbanu, daughter of Alarakhia Karim, niece of Munji Karim, 1¼ years, Mugbat Lane, No. 10. Died on 17th January 1898.

Dosa Kasam, 70 years, Khoja Moholla, opposite the Bene Israil Synagogue, close to Khoja Hospital. Died of plague at home on 4th February 1898.

Minbai, mother of Munji Karim, 60 years, Mugbat Lane, No. 10, died on 10th February 1898.

Khetwádi.

Moloo Alarekhia, 46 years, Khetwádi, Falkland Road, died of plague in the Khoja Hospital on 7th January 1898.

Nul Bazár.

Sivji Jaffer Dhenidina, 25 years, Falkland Road, died of plague in the Khoja Hospital on 16th February 1898.

Khensabai, wife of Rejabali Rehim, 21 years, Khoja Street, No. 8, died on 28th February 1898.

Bhindi Bazár.

Prembai, wife of Bana Ismail, 60 years, Chibutgali, No. 124, died of plague at home on 1st February 1898.

Suntok, daughter of Jeto, mother of Hasam Jooma, 65 years, No. 126, Parel Road, Bhindi Bazar, died on 5th February 1898.

Walbai, wife of Ahmed Munji, 50 years, Park Modi Street, opposite Mussafar Khana, died on 6th March 1898.

Sarakhanu, daughter of Mahomed Varin, 9 months, Parel Road, No. 410, died on 17th April 1898.

Kándi Moholla.

Mahomed Nanji, 35 years, Kándi Moholla, died of plague in the Khoja Hospital on 29th December 1897.

Ramji, son of Gulamhusein, 6 months, Tandel Street, Chatriserang Moholla, died on 14th January 1898.

Khimji Kasam, 56 years, Kándi Moholla, died of plague in the Khoja Hospital on 3rd February 1898.

Nanbai Megji, daughter-in-law of Datoo Revji, 14 years, Kándi Moholla, died of plague at home on 3rd February 1898.

Janbai, daughter of Punja Jesraj, 4 years, Kándi Moholla, died on 3rd February 1898.

Nurmahomed Poonja, 30 years, Kándi Moholla, died of plague in the Khoja Hospital on 16th February 1898.

Soni, daughter of Juma and grand-daughter of Hasam Khimji, 1½ years, Kándi Moholla, Baba Street, died on 16th February 1898.

Miriumbi, daughter of Devraj Kilian, 16 years, Kándi Moholla, died on 2nd March 1898.

Jetha Alana's son, 15 days, Kándi Moholla, died on 7th March 1898.

Sonbai, wife of Sheriff Dosa, 25 years, H. H. the Aga's Chawl, died of plague in the Khoja Hospital on 17th March 1898.

Janbai, wife of Velsi Megji, 50 years, H. H. the Aga's Chawl, died on 10th April 1898.

Darga Moholla.

Fatmabai, daughter of Wali, Ahmed Hamir's wife, 14 years, Kasai Galli, 2nd Dotar Street, Khoja Moholla, died of plague in the Khoja Hospital on 2nd January 1898.

Monghi, daughter of Isa Nandoo, 1½ years, Nissampada Cross Street, died on 8th January 1898.

Gulamhusein Manek Haji, 32 years, Corner of Bengalpura, Nisandanpara Street, died on 11th January 1898.

Nanbai, wife of Jiva Moolji, 75 years, Bengalpura, Nisanpara Road, No. 241, died on 11th January 1898.

Janbai, wife of Gangji Sajoo, 56 years, Darga Moholla, died of plague at home on 12th January 1898.

Janmahomed, son of Pira Moolji, 12 years, Tandal Street, died of plague at home on 14th January 1898.

Teijbai, wife of Ravji Alarekhia, 25 years, Corner of Bengalpura, Nisandarpara Street, died of plague in the Khoja Hospital on 16th January 1898.

Fulbai, wife of Kanji Mahada, 54 years, Bengalpura, Nisandarpara Road, No. 241, died on 17th January 1898.

Sekinabai, daughter of Jaffer Remoo, 12 years, Shatrisarang Moholla, died of plague in the Khoja Hospital on 22nd January 1898.

Permabai, wife of Sumar Dama, 50 years, Palkhi Moholla, died of plague in the Khoja Hospital on 24th January 1898.

Hasam Kasam, 35 years, Bengalpura, Nisandarpara Road, house No. 241, died of plague in the Khoja Hospital on 26th January 1898.

Jenab, daughter-in-law of Remtoola Ladha, 17 years, Bengalpura Street, house No. 432, died on 28th January 1898.

Fatmabai, daughter of Lalji Molu Alarakhia, 24 years, Palkhi Moholla, near the Hindu temple, died on 28th January 1898.

Ratanbai, wife of Munji Asar, 52 years, Chatrisarang Moholla, died of plague in the Khoja Hospital on 30th January 1898.

Kulsambai, daughter of Rehemtula Ladha, 11 years, Bengalpura Street, house No. 432, died of plague at home on 30th January 1898.

Munji Asar, 60 years, Chatrisarang Moholla, died of plague in the Khoja Hospital on 31st January 1898.

Mahamed, son of Bhanji Visram, 20 years, Palkhi Moholla Lane, died of plague in the Khoja Hospital on 1st February 1898.

Sirinbai, daughter of Kerim Kasam, 6 months, Tandel Street, house No. 35, died on 1st February 1898.

Jinabai, daughter of Jivraj Vainya, 9 months, Chatrisarang Moholla, died on 1st February 1898.

Gangabai, wife of Asar Premji, 65 years, Bengalpura Nisandarpara Street, house No. 250—252, died on 5th February 1898.

Herji Dunger, 70 years, Nisanpara, died on 5th February 1898.

Lalji Parpia, 65 years, Tandel Street, died on 5th February 1898.

Siribai, daughter of Sumar Gulamhusein, 12 years, Bengalpura Nisanpada Road, house No. 241, died of plague in the Khoja Hospital on 10th February 1898.

Pirbhai Somji, 52 years, Nisanpara, house No. 127, died on 15th February 1898.

Juma Kasam, 40 years, Tandel Street, No. 81, died on 17th February 1898.

Nazarali, son of Revji Punja, 12 years, Mahomed Sajan's house at Durga Moholla, died of plague in the Khoja Hospital on 28th February 1898.

Alibhoy Jiva, 22 years, Bengalpura Nisandarpara, died of plague in the Khoja Hospital on 1st March 1898.

Dhunbai Walji Revji, 65 years, Tandel Street, No. 142, died on 5th March 1898.

Mahomed Ruttansi, 60 years, Old Bengalpura Street, No. 257, died of plague in the Khoja Hospital on 6th March 1898.

Rehimtula Aladin Munji, 16 years, Umarkhadi 2nd Road, No. 59, died of plague in the Khoja Hospital on 9th March 1898.

Ratanbai, mother of Giga Visram, 90 years, Bengalpura Nisandarpara, died on 11th March 1898.

Puribai, mother of Somji Mavji, 60 years, Bengali Street, died on 14th March 1898.

Khanubai, wife of Molu Kasam, 27 years, Bengalpura Street, No. 389, died on 15th March 1898.

Siribai, daughter of Fazul Alarakhia, 2½ years, Darga Moholla, died on 15th March 1898.

Manbai, wife of Nathu Abhu, 46 years, Nisanpada Street, house No. 98, died on 17th March 1898.

Khatija, daughter of Jan Herji, 7 months, Chatrisarang Moholla, died on 19th March 1898.

Ruttansi Mavji, 65 years, Nisanpada, died on 21st March 1898.

Bhanbai, wife of Mahomed Najak, 55 years, Nisanpada Street, died on 22nd March 1898.

Ibrahim, son of Giga Visram, 6 months, Nisanpada Street, died on 25th March 1898.

Miriumbai, daughter of Premji Ruttansi, 7 years, Nisanpada Street, house No. 185, died on 26th March 1898.

Jainabai, daughter of Jaffer Megji, 14 years, Nisanpada Cross Road, No. 39, died on 26th March 1898.

Siribai, daughter of Jairaj Pira Virji, 5 years, Nisanpada Street, died on 30th March 1898.

Bachu, son of Jivraj Pira. 4 months. Nisanpada, died on 5th April 1898.

Khatijabai, daughter of Navroz Lila Ibji, 8 months, Nisanpada Street, died on 5th April 1898.

Hurbai, wife of Mahomed Piru, 80 years, Tandel Street, died on 6th April 1898.

Sikinabai, daughter of Munji Bhanji, 11 years, Nisanpada Cross Road, house No. 39, died on 8th April 1898.

Ruttonbai, wife of Mitha Daya, 80 years, Darga Moholla, died of plague in the Khoja Hospital on 9th April 1898.

Teijbai, wife of Versi Devji, 65 years, Darga Moholla Nisanpada Road, Alarakhia Keshwarni's house, died on 18th April 1898.

Mirium, daughter of Dawud Juma, 1¼ years, Nisanpada Street, died on 19th April 1898.

Umarkhadi.

Alli Haji, Mahomed Sumar's brother's son, 18 years, Umarkhadi, died of plague at home on 15th January 1898.

Sunderji Kerim, 4 years, Jail Road, East House No. 50, died on 27th February 1898.

Kharak Road.

Hirabai Raoji, daughter-in-law of Dosa Mavji, 28 years, Kharak Road, died of plague in the Khoja Hospital on 29th December 1897.

Kara, Jaitha's wife, 75 years, Kharak Road, died on 5th January 1898.

Sekinabai, daughter of Mirali Premji and grand-daughter of Premji, Jeraj, 6 months, Kharak Road, died on 9th January 1898.

Fatmabai, daughter of Miralli Premji and grand-daughter of Premji, Jeraj, 1½ years, Kharak Road, died on 14th January 1898.

Rehemtula Khaki Pudemsi, 33 years, Kharak Road, died on 15th January 1898.

Abba, son of Premji Jivraj, 1 year, Kharak Road, died on 29th January 1898.

Sherbanoo, daughter of Amersi Sheriff, 1½ years, Kharak Road, died on 4th February 1898.

Jairaj Thaver's daughter, 3 years, Kharak Road, died on 12th February 1898.

Mahomed Pira Megji, 28 years, Kharak Road, died on 17th February 1898.

Ali Raja Suleman, son of Kasam Ali Ali Raja, 2 years, Kharak Road, died on 20th February 1898.

Ibrahim Hasam Munji, 35 years, Kharak Road, died on 24th February 1898.

Manbai, wife of Ibram Mitha of Chival—Revadanda, 41 years, Kharak Road, died on 10th March 1898.

Pala Gulli.

Fazul, son of Hasan Teja, 22 years, Munda Gulli, died on 10th January 1898.

Janbai, daughter of Virji and wife of Miralli Hamir, 32 years, Samuel Street, house No. 268—270, died on 12th January 1898.

Gulamhusein Lala, 55 years, Samuel Street, house No. 308—314, died of plague in the Khoja Hospital on 19th January 1898.

Siribai, daughter of Ladha and wife of Hamir Juma, 30 years, Samuel Street, house No. 308—314, died on 18th February 1898.

Remat, daughter of Sachu Alarakhia, 4 years, Munda Gulli, died on 24th March 1898.

Nurmahamed, brother of Dhunji Ragu, 58 years, Samuel Street, house No. 326, died on 25th March 1898.

Ismail, son of Alarakhia Munji, 25 years, Munda Gulli, died on 25th March 1898.

Sonbai, daughter of Haji Murji, 10 years, Munda Gulli, died on 2nd April 1898.

Bhalu Tharia, 62 years, Samuel Street, died on 4th April 1898.

Remtala Piru, 65 years, Munda Gulli, died on 12th April 1898.

Jainab, wife of Nazerali Karva, 16 years, Parel Road, died on 14th April 1898.

Sherbanu, wife of Muradali Purdhan, 16 years, Samuel Street, died on 16th April 1898.

Dungri Street.

Bendali Pudemsi, 43 years, Nágdevi Street, near Old Post Office, died on 29th December 1897.

Kerim Nathu Sivji, 28 years, 2nd Chinchbunder Road, died of plague at home on 4th January 1898.

Mavji Anand, 70 years, Chinchbunder, 2nd Road, house No. 572, died of plague in the Khoja Hospital on 7th January 1898.

Ranbai, wife of Rehim Nanji, 60 years, Máhim, near Máhim Bazár, died of plague in the Khoja Hospital on 10th January 1898.

Gulamhusein, son of Megji Mahamed, 8 years, Chinchbunder, 2nd Road, house No. 607, died of plague in the hospital on 11th January 1898.

Ali Mahomed Vali Casam, 24 years, Dungri Street, died of plague at home on 11th January 1898.

Jina Kara's daughter, 10 days, 2nd Chinchbunder Road, house No. 600, died of plague at home on 11th January 1898.

Jeraj Walji, 55 years, 2nd Chinchbunder Road, died on 12th January 1898.

Chagbai, wife of Mahomed Allu, 60 years, 2nd Chinchbunder Road, died on 15th January 1898.

Saley Khakey's son, 8 months, Dungri Street, died on 21st January 1898.

Rehimtula, son of Sacha Hasam, 8 years, Chinchbunder 2nd Road, died on 21st January 1898.

Dharsi Khaku, 62 years, Dungri Bazár, died on 25th January 1898.

Gangji Aladin, *alias* Gulamhusein, 43 years, 2nd Chinchbunder Road, died on 28th January 1898.

Abdulla, son of Molu Ravji, 2 months, Dungri Bazár, near Palla Gulli, died on 7th February 1898.

Katubai, daughter of Ahmed and grand-daughter of Mahomed Rehim, 8 months, Chinchbunder 2nd Road, died on 8th February 1898.

Bachu, son of Mulji Hasam and grandson of Hasam Gangji, 20 days, Dungri Bazár, Chinchbunder 2nd Road, died on 12th February 1898.

Khatijabai Wilshi, daughter-in-law of Hasam Mahomed, 15 years, 1st Navroji Hill Road, died on 16th February 1898.

Sacha Meluk, 75 years, Samuel Street, died on 6th March 1898.

Kajbai, wife of Ismail Sivji, 36 years, Dungri Street, opposite Jerajbhai water-cistern, died on 9th March 1898.

Bachu, son of Meralli Jeraj, 1¾ years, 2nd Chinchbunder Road, died about the 10th March 1898.

Ismail Meralli Alarakhia, 17 years, Dungri Street, died of plague in the Khoja Hospital on 17th March 1898.

Kasam Sivji, 54 years, Dungri Street, house No. 575, died on 20th March 1898.

Chandibai, wife of Gulamhusein Dhunji, 15 years, Navroji Hill, 1st Road, house No. 169, died on 27th March 1898.

Fatmabai, daughter of Fazul Miralli, 6 months, Dungri Street, house No. 564, died on 27th March 1898.

Sekinabai, daughter-in-law of Abdula Sivji, 28 years, Chinchbunder 3rd Road, house No. 595, died of plague in the Khoja Hospital on 7th April 1898.

Devan Ban, mother of Gulamhusein Remtala, 72 years, Dungri Street, house No. 581, died on 10th April 1898.

Kasam Jaitha, 58 years, corner of Dungri Street and Samuel Street, died on 10th April 1898.

Dost Mahomed Hasam's daughter, 1½ months, Dungri Street, 2nd Chinchbunder Road, house No. 583—585, died on 16th April 1898.

Rimtula, son of Dhunji Kasam, 30 years, Chinchbunder 1st Road, died on 18th April 1898.

Khoja Moholla.

Mirium, daughter of Bhanj Poonja, 9 years, Kasai Gulli, 2nd Dotar Street, died of plague in the Khoja Hospital on 27th December 1897.

Miriumbai, daughter of Vali Poonja, 10 years, Kasai Gulli, 2nd Dotar Street, died of plague in the Khoja Hospital on 1st January 1898.

Lalbai, wife of Kermali Haji, 35 years, Khoja Moholla, died of plague in the Khoja Hospital on 19th January 1898.

Abdul Kerim Abdull, 22 years, Khoja Moholla, died on 23rd February 1898.

Mahomed Rehemtula, 35 years, Mugbat Lane, house No. 10, died of plague at home on 23rd February 1898.

Hasam Nensi Kheraj, 23 years, Khoja Moholla, died of plague at home on 13th March 1898.

Abas Mahomed Dosa, 12 years, Kasai Gulli, 2nd Dotar Street, died of plague at home on 13th February 1898.

Chagbai, *alias* Ruttonbai, wife of Gulamhusein Munji, 42 years, Kumbhárwada Cross Lane, died of plague in the Khoja Hospital on 31st March 1898.

Furniture Bazár.

Meralli Dhunji, 54 years, Bandari Street, died of plague in the Khoja Hospital on 27th December 1897.

Kasam Munji, 45 years, Chakla Street (Old Kasai Street), house Nos. 7, 9, 11, died on 27th December 1897.

Nurmahomed, son of Virji, Herji, 12 years, Bhandari Street, Chakla Road, died of plague in the Khoja Hospital on 29th December 1897.

Nurmahomed Sekiladtha, 75 years, Gavli Moholla, died on 5th January 1898.

Alimahomed, son of Vali Datu, 8 months, Chakla Street, died on 15th January 1898.

Pudmabai, wife of Arad Merva, 67 years, 2nd Bundarwáda Street, died on 15th February 1898.

Janbai, wife of Pirbhai Bhimji, 66 years, Bandari Street, died on 23rd February 1898.

Janbai, wife of Ibrahim Kasam and daughter of Pirbhai, 62 years, Chakla Street, house No. 11, died of plague in the Khoja Hospital on 3rd March 1898.

Sekinabai, wife of Pirbhai Alarakhia, 20 years, Chakla Street, house Nos. 7, 9, 11, died on 6th March 1898.

Gangji Pissu, 72 years, Bhandari Street, died on 20th March 1898.

Fatma, daughter of Kasam Remtula, 8 years, Kalasi Chakla Street, died of plague in the Khoja Hospital on 5th April 1898.

Nurmahomed Wali, 40 years, Chakla Street, died on 5th April 1898.

Gulamhusein, son of Meralli Koorji, 9 months, Chakla Street, died on 18th April 1898.

Market.

Alibhai Nanji, 58 years, Nagdevi Road, Bhájipála Lane, died of plague in the Khoja Hospital on 22nd February 1898.

Sekina, daughter of Rehimtula Kerim and grand-daughter of Kerim Datu, 2 years, Sutár-Chawl, Abdul Rehman Street, died on 11th March 1898.

Saley Mahomed Gulamhusein Somji, 6 years, Khetwadi, 12th Lane, died of plague in the Khoja Hospital on 24th March 1898.

Nensi Pirbhai Mahomed, 52 years, Crawford Market, Kitchen Garden, died on 29th March 1898.

Kasam Somji Gangji, 35 years, Nagdevi Street, died on 20th April 1898.

Dhobi Talao.

Walbai, daughter of Walji Punja, 6 years, Dhobi Talao, died of plague in the Khoja Hospital on 28th March 1898.

People without fixed residence.

Rehimtula Nurmahomed, 28 years, died of plague in hospital on 14th January 1898.

Bhanji Nurmahomed, 22 years, Israel Street, brought from house No. 23—25, died of plague in the Khoja Hospital on 22nd February 1898.

ORDER—No. 687, P. dated 18th July 1898.

The report* will be published in English and in the vernaculars in the Fort St. George and all District Gazettes. The Translators to Government are requested to furnish the Superintendent, Government Press, with the necessary translations.

* ~~Pages 1—4 only.~~

(True Extract.)

for *Secretary to Government.*

To all Collectors (A, F and G).
" the Translators to Government.
" the Surgeon-General.
" the Sanitary Commissioner.
" the Superintendent, Government Press.
" the Political Department.

Gazette.

Exd. C. M. Thumbusawmy.

Local & Munl. (1898) Department.

CURRENT No. 1061 P.

108

From W. M. Haffkine Esqr. C.I.E. Bombay

Order No. 687P dt 18.7.98

The report will be published in English and in the Vernaculars in the Fort St George & all the Gazettes. The Translators to Government are requested to furnish the Supt Govt Press with the necessary translations. 19.7.1898

*Page 1-4 only

No. 342

Dated 11.7.1898

Received 16.7.1898

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Enclosures /

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Dupd 12/8/98
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- " Surgeon General 16
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- " Supt Govt Press. 4
- " Pol. Dept 6
- Gazette

Note The report has already appeared in the newspapers

Lang 18/7/98

Letter 15/8/98

SUBJECT.

Forwarding a report on the preventive inoculations against plague in the Khoja community of Bombay during the Epidemic of 1897-98. and requesting the favour of acknowledging its receipt.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

CHIEF SECRETARIAT
15 JUL 1898
GOVERNMENT OF MADRAS

REPORT

ON

THE PREVENTIVE INOCULATIONS AGAINST PLAGUE IN THE KHOJA COMMUNITY OF BOMBAY, DURING THE EPIDEMIC OF 1897-98.

BY

W. M. HAFFKINE.

B 224

C. No. 1061 P.

CHIEF SECRETARIAT
14 JUL 1898
GOVERNMENT OF MADRAS

No. 342 OF 1898. 1P

FROM W. M. HAFFKINE, ESQ., C.I.E.;

To The Chief Secretary to Government of Madras.

PLAGUE RESEARCH LABORATORY, MAZGAON:
Bombay, 11th July 1898.

SIR,

I have the honor to forward a Report on the preventive inoculations against plague in the Khoja Community of Bombay during the Epidemic of 1897 and to request the favor of your kindly acknowledging its receipt.

I have the honor to be
Sir,
Your most obedient Servant

W. M. Haffkine

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REPORT

ON

THE PREVENTIVE INOCULATIONS AGAINST PLAGUE IN THE KHOJA COMMUNITY OF BOMBAY, DURING THE EPIDEMIC OF 1897-98.

BY

W. M. HAFFKINE.

Total of Khojas inoculated during the epidemic of 1897-98, and their average daily strength.

His Highness the Aga Khan's Inoculation Station at Mazagaon was opened on the 27th December 1897. Up to the 20th April 1898, inclusive, 5,000 Khojas (exactly) were inoculated at that station, and 184 others were done in Municipal Stations in the rest of the town, giving a total of 5,184 inoculated during the epidemic of 1897-98.

This number includes Khojas who had been inoculated already last year, during the epidemic of 1896-97, and who presented themselves this year for re-inoculation. On the contrary, the Khojas inoculated last year, but not re-inoculated this year, are not included in the above number, and the analysis which follows does not refer to them.

The above number of Khojas was inoculated gradually. On the 27th December 1897, the opening day of the Station, 33 were operated upon; on the 28th the number increased up to 66; on the 29th it increased up to 119; on the 30th up to 226; on the 31st up to 301; and so on. During the first 9 weeks the number was increasing steadily, and on the last day of February it reached 4,719. During the other $7\frac{1}{2}$ weeks the total number increased only by 465. Taking the daily strength of the inoculated during the whole period of $16\frac{1}{2}$ weeks, the average appears as 3,814. In the following comparative analysis the mortality in the inoculated is considered as having occurred not in 5,184 individuals, which is the number reached at on the last days of the operations, but in a number of 3,814 individuals only, which is the *average* daily strength taking the above period as a whole.

The average daily strength of the Khojas who remained uninoculated.

A census of the Khojas of Bombay taken in the beginning of 1898, by the officers of the Khoja Jamat, under the orders of His Highness the Aga Khán, showed the total Community to be numbering 9,350 souls.

A certain number of families were, however, away when the census was being taken, on account of the epidemic, and their number could not be obtained accurately.

The following figures are, therefore, taken as giving a safe foundation for all the necessary considerations.

The annual Khoja mortality in years free from plague, as registered in the burial-ground books of the Jamát office, was—

in 1892,—385
1893,—301
1894,—335
1895,—349,

giving an average of 342 deaths in a year.

The mean mortality in the population of Bombay is close upon 35 per mille per annum.

Counting for the Khojas a mortality per mille per annum of 25 only, the average of 342 deaths a year gives a population of 13,680, which is likely to be higher than the actual number. During the epidemic of plague which preceded the 16½ weeks under consideration, the Khojas had 350 deaths in excess of their average mortality. The above number of persons in the community should therefore be reduced by 350, giving a population of 13,330.

This number, apparently exaggerated, which exceeds that found during the census by nearly 4,000 (by over ⅖) is adopted in the following calculations as representing the real Khoja population of Bombay, and the proportion of inoculated and uninoculated is accepted to be as follows :—

Average daily strength of inoculated	...	3,814 (accurate number).
„ „ of uninoculated	...	9,516 (approximate, probably exaggerated number, which includes also those inoculated last year and not re-inoculated during the epidemic of 1897-98).
Total	...	13,330

By thus calculating upon an exaggerated strength of the uninoculated, the risk of exaggerating their death-ratio during the epidemic under consideration is avoided.

Total number of deaths in Inoculated and Uninoculated, which took place during the period under consideration.

During the 16½ weeks, between the 27th December 1897 and the 20th April 1898, 184 deaths in all occurred in the Khoja Community. Of these, 6, including 2 of plague, took place in Khojas inoculated in the epidemic of 1896-97, and not re-inoculated since ; 7 deaths, including 3 of plague, occurred in the 5,184 Khojas inoculated or re-inoculated this year ; and 171 deaths occurred in the un-inoculated Khojas.

Number of deaths from plague in Khojas during the period under consideration.

In the years 1892 to 1896, while there was no plague in Bombay, the mortality in Khojás during the same part of the year, between the 27th December and 20th April, was 131, 96, 100, 106 and 96 respectively, or on the average 105, in a normal population of 13,680 individuals. In the reduced population of 13,330 as it stood at the beginning of the period under consideration, it should have been proportionately 102. The advent of the plague may have altered the course of the mortality, namely, the liability to deaths from other causes than plague may have been influenced by the fact that, during the plague year *preceding* the period under consideration, double the usual number of individuals had been carried away by death. The normal mortality must have been also reduced by a part of the community having left the City. Admitting, however, that, of the total number of 184, fully the usual proportion of 102 died of other causes than plague, there remain 82 deaths in excess of that number which are attributable to plague alone. 64 of this number were actually acknowledged as plague deaths by the relatives of the deceased, or certified as such by the Khoja Jamat books.

Of the 102 deaths attributable to other causes 4 occurred in inoculated this year, 4 in inoculated last year, and the rest, 94, in uninoculated.

Of the 82 deaths attributable to plague, 3 occurred in inoculated this year, 2 in inoculated last year, and 77 in uninoculated.

The names, sexes and ages, and full addresses of all these 184 persons are given in the Appendices Nos. II and IV. These data have been very carefully verified, in all their details, from the Jamát and the inoculation documents, and by means of a minute house-to-house investigation carried out by Mons. Haffkine personally.

The distribution of deaths among the inoculated and uninoculated is as follows :

9,516 uninoculated (probably exaggerated number) had 77 deaths from plague and 94 deaths from other causes.

3,814 inoculated this year (accurate number) had 3 deaths from plague and 4 deaths from other causes.

Admitting that among the uninoculated not more than the above proportion of deaths was due to plague, and supposing that the inoculated had remained, after inoculation, as susceptible to disease as were the uninoculated, they should have had, according to their relative strength, 31 deaths from plague and 38 deaths from other causes.

The actual result is the most striking of all that have been observed up to now.

Among the 77 uninoculated who died of plague, there was 1 babe below 3 years of age, and 4 people above 60, giving a total of 5 deaths. Among the 94 uninoculated who died of other causes than plague, there were 33 deaths in babies of 3 years and below, and 23 in people above 60, giving a total of 56 deaths.

The proportion of individuals of these two extremes of ages, who were inoculated, was very considerable, but smaller than their proportion among the uninoculated (see Appendix No. 1). In order to eliminate this source of possible error, the 5 deaths from plague and 56 deaths from other causes, which occurred in uninoculated outside the age of 3 to 60 years, may be excluded from the comparison altogether, and after that the figures are still as follows :—

9,516 uninoculated (probably exaggerated number) had 72 deaths from plague and 38 deaths from other causes.

3,814 inoculated (accurate number) had 3 deaths from plague and 4 deaths from other causes.

The difference in the mortality in the uninoculated and inoculated Khojas.

This represents a difference of 89·7 per cent. of deaths from plague in favour of the inoculated part of the community, and of 73·3 per cent. of deaths from what has been returned as "other causes," in favour of the same part of the community.

After making all allowances for inaccurate classification of deaths in the uninoculated group, with which the inoculated is being compared, and admitting that a part of the excess of deaths in the uninoculated may be due to a certain number of sickly people having abstained from inoculation, the result still contains an indication that, besides the protection against plague, this inoculation influences also favourably the resistance to certain other diseases than plague, a fact with regard to which exact material is since some time being accumulated in the Research Laboratory.

W. M. HAFFKINE.

The Plague Research Laboratory,
Bombay, 10th of May 1898.

Copies of this Report are forwarded to : —

The Secretary to the Government of India in the Home Department, Simla,
The Private Secretary to His Excellency the Governor of Bombay,
The Chief Secretary to the Government of Madras,
The Secretary to the Government of Bombay in the General Department (Plague),
The Director General, Indian Medical Service, Simla,
The Surgeon-General with the Government of Bombay,
His Highness Aga Khan, K.C.I.E.

APPENDIX No. I.

Table permitting of a Comparison between the Inoculated and Uninoculated groups of Khojas as regards their sexes and ages.

Ages.		Up to 3 years.	4 to 7 years.	8 to 15 years.	16 to 45 years	46 to 60 years.	61 years and upwards.
Number of uninoculated Khojas as found in Bombay during a house-to-house visitation in March 1898.	Males ...	190	232	455	1,270	222	93
	Females...	209	270	525	1,122	181	83
	Total ...	399	502	980	2,392	403	176
Number of inoculated Khojas registered at the Khoshroo Lodge Inoculation Station between 27th December 1897 and 25th April 1898.	Males ...	133	254	698	1,239	153	48
	Females...	133	281	644	1,166	239	25
	Total ...	266	535	1,342	2,405	392	73

APPENDIX No. II.

(To be compared with Appendix No. IV.)

NAMES AND PARTICULARS OF THE *INOCULATED* KHOJAS WHO DIED BETWEEN THE 27TH DECEMBER 1897 AND 20TH APRIL 1898.

Names and particulars of the 7 Khojas inoculated during the Epidemic of 1897-98 who died of Plague or other causes.

(*a*).—*Died of Plague.*

Mahamad Visram, male, 24, of Palla Galli.
Purbai, wife of Punja Ladha, 55, of Chinchpokli.
Mirium, grand-daughter of Hassam Somji, 3 years, of Kandi Moholla.†

(*b*).—*Died of other causes.*

Katija, daughter of Naoroji Jan Mahamad, 2½ years, of Darga Moholla.
Mithibai, wife of Hasan Ladha, 24 years, of Kharak.
Chagbai, wife of Jan Mahamad Virji, 50 years, of Kandi Moholla.
Gulam Husein Alladin, male, 20 years, of Kharak.

Names and particulars of the 6 deceased Khojas inoculated during the Epidemic of 1896-97, who died of Plague or other causes during the period between the 27th December 1897 and 20th April 1898.

(*a*).—*Died of Plague.*

Gulam Husein Merally, grandson of Hasam Shivji, 6 years, of Durga Moholla.
Sakinabai, wife of Dost Mahamad Hassan, 25 years, of Dungri.*

(*b*).—*Died of other causes.*

Sakina, daughter of Jivraj Asar, 11 years, of Two Tanks.
Rehmatbai, wife of Samji Hirji, 20 years, of Kandi Moholla.
Fatma, daughter of Ismail Asar, 12 years, Jamátkhána, Dungri.
Sakinabai, wife of Musa Jaffer Pardhan, 19 years, of Palla Galli.

† See Dr. M. B. Lam's letter, p. 6.
* With regard to this patient see Doctor Ismail Jan Mahomad and Doctor Bahadurji's letters, p. 8.

Correspondence regarding Gulam Hussein Aladin.

Khadak, 8th May 1898.

To

W. M. HAFFKINE, Esq.

DEAR SIR,

Gulam Hussain Aladin died of Phthisis; no signs of Plague about him. I am unable to give you any information about Sakina, daughter of Jivraj Asar. I believe Dr. Blaney treated her.†

I am, Sir,
Yours truly,
A. F. PEREIRA.

Correspondence regarding Sakinabai, wife of Dost Mahomed Hassan.

I.

22, Falkland Road, Bombay,
6th May 1898.

DEAR DR. HAFFKINE,

Many thanks for your letter of the 4th May. Sakinabai, wife of Dost Mahomed Hassam, Khoja, female, 25 years, was residing at 2nd Chinch Bunder Road, No. 583–585. She was under my treatment for fever after confinement; she had puerperal fever; she did not suffer from Plague.

I am,
Yours very truly,
ISMAIL JAN MAHOMED.

II.

Bombay, 19th May 1898.

FROM

DR. K. N. BAHADURJI.

To

W. M. HAFFKINE, ESQUIRE, C.I.E.

DEAR SIR,

It appears that the case of Sakinabai at Chinch Bunder you refer to was seen by me with Dr. Ismail J. Mahomed. My impression was that the case was one of plague. But Dr. J. Mahomed who watched the case before and after my seeing her assures me that she died of puerperal fever. I have had similar cases to treat in my hospital and they were taken as plague septicaemia.*

Yours sincerely,
K. N. BAHADURJI, M.D.

---

† See on next page another letter from Dr. A. F. Pereira, and the letters from Drs. Blaney and Hakim.

* The opinion that the case was due to plague was adopted (See Appendix No. II, p. 5), as in all contradictory statements the view adverse to the inoculation is given preference in these Reports.

5

Correspondence regarding Sakina, daughter of Jivraj Assar.

I.

To

W. M. HAFFKINE, Esq.

DEAR SIR,

I have inquired from the Khoja Jamat Khana and I am given to understand that Sakina daughter of Jivraj Assar, died of Consumption.

I am, Dear Sir,
Yours truly,
A. F. PEREIRA.

Khaduck, 19th May 1898.

II.

DEAR SIR,

I only saw the deceased girl Sakina at long intervals. She was suffering from advanced Phthisis. I heard nothing about inoculation during life, and only know of her death from her friends. I am unable to say whether she had Plague during any period of her illness.

Yours truly,
THOMAS BLANEY.

9th May 1898.

III.

ISMAIL, HOUSE,
Mahábleshwar, 8th May 1898.

To

DR. W. M. HAFFKINE.

DEAR SIR,

In reply to your letter of the 4th May 1898, about the cause of death of Bai Sakina Jairaj Asar, who was inoculated on the 1st April 1897, and who died on 5th March 1898 of Phthisis, I have some reason to believe, not by mere bare imagination, that in certain constitutions this serum has some tendency to weaken the body and develop or hasten to a state of consumption.

A Parsi girl of sound constitution and no hereditary predisposition was inoculated at Poona on the 25th March 1897 at Council Hall. Three months after she began to suffer from slight fever and now she shows some signs of Phthisis. The patient's name is Bai Merbaiji Rustomji Byramji Jijibhoy.

I remain,
Yours sincerely,
ERACHSHAW J. HAKIM.

P.S.—If you believe this possibility in some cases, and if you know or advise something which may do some good in such class of cases, kindly let me know about it.

IV.

Reply by Dr. W. M. Haffkine to Dr. E. J. Hakim's question.

PLAGUE RESEARCH LABORATORY, MAZAGAON,
Bombay, 9th May 1898.

DEAR DR. HAKIM,

I thank you for the information contained in your letter of 8th instant. I am forwarding to your address a pamphlet on the protective inoculation against Plague, where, on page 6, you will find the answer to a question similar to yours, which had been put to me by Dr. S. H. Mody.*

---

* The passage referred to is reproduced hereafter.

III.

HORMAZD VILLA, CUMBALLA HILL,
Bombay, 9th May 1898.

To

PROFESSOR W. M. HAFFKINE.

DEAR SIR,

Your kind note dated the 4th May came to hand this morning, the envelope bearing the Post Office delivery mark of the 8th instant.

I well remember the patient Sakinabai residing at Dongri. She was ill with gastric ulcer and pain in the epigastrium due to that cause. She had had fever of a hectic character.

It was not at all possible to connect the cause of her death with any indications or symptoms which could be ascribed to Plague.

I remain,
Dear Sir,
Yours very faithfully,
R. N. KHORY.

APPENDIX No. IV.

NAMES AND PARTICULARS OF THE *un-inoculated* KHOJAS WHO DIED BETWEEN THE 27TH DECEMBER 1897 AND 20TH APRIL 1898.

Mazagaon.

Shakerbai, daughter of Ahmed Nandoo, 11 years, Nesbit Lane, Aga Hashamshah's house in His Highness Aga Khan's residence. Died of plague in the Khoja Hospital on 6th January 1898.

Parel Road, Lálwádi.

Noormahomed Tarmahomed Dharmsi, 22 years, Parel Road, near Richardson, Cruddas and Company and near house No. 625. Died of plague at home on 15th February 1898.

Setbai, daughter of Tarmahomed Dharmsi, 12 years, Parel Road, near Richardson, Crudas and Company, house No. 625. Died of plague in the Khoja Hospital on 17th February 1898.

Moti, wife of Alibhoy Mahomed, 18 years, Lálwádi, Parel, No. 104. Died on 27th February 1898.

Hussein, son of Karim, grandson of Poonja Ladtha, 6 months, Chinchpugli, Parel Road. Died on 1st March 1898.

Nanji Tejpal, 70 years, Kalichoki Road, No. 160. Died on 11th March 1898.

Byculla.

Aladin, son of Hirji Lovji Babool, 30 years, Haines Road, No. 102. Died of plague in the Khoja Hospital on 10th January 1898.

Ludtha Jaitha, 85 years, opposite Victoria Garden, near Tramway Company's stables. Died on 30th March 1898.

Mahomed Khimji Nanji, 30 years, Haine's Road, No. 212. Died on 7th April 1898.

Jacob's Circle, Sat Rasta.

Ali Munji, 34 years, Nágdevi Road. Died of plague in the Khoja Hospital on 14th January 1898.

Nágpáda.

Dhunji Megji, 50 years, Underia Street. Died of plague in the Khoja Hospital on 3rd March 1898.

Sekina, granddaughter of Gangji Haji, 6 months, Memonwáda Street, No. 503—508. Died on 1st April 1898.

Kámátipura.

Koowarbai, daughter of Manji, and wife of Purdhan Mitha, 26 years, Kámátipura Center Road, opposite the Church. Died of plague at home on 13th February 1898.

Noormahomed Damji, 56 years, Kámátipura Center Road, near house No. 122. Died on 12th April 1898.

Dunkey Dole.

Fijibai, daughter of Pirbai Khanbai, daughter-in-law of Ali Haji, 20 years, Upper Duncan Road, house No. 64. Died of plague at home on 30th December 1897.

Coorji Ruttansi, 65 years, Duncan Road, No. 502. Died on 19th January 1898.

Two Tanks.

Rehim Punchan, 35 years, English Road, near the Parsees' Aghiari (fire-temple). Died of plague in the Khoja Hospital on 23rd February 1898.

Kánda Wádi.

Sherbanu, daughter of Alarakhia Karim, niece of Munji Karim, 1¼ years, Mugbat Lane, No. 10. Died on 17th January 1898.

Dosa Kasam, 70 years, Khoja Moholla, opposite the Bene Israil Synagogue, close to Khoja Hospital. Died of plague at home on 4th February 1898.

Minbai, mother of Munji Karim, 60 years, Mugbat Lane, No. 10. Died on 10th February 1898.

Khetwádi.

Moloo Alarekhia, 46 years, Khetwádi, Falkland Road, died of plague in the Khoja Hospital on 7th January 1898.

Nul Bazár.

Sivji Jaffer Dhenidina, 25 years, Falkland Road, died of plague in the Khoja Hospital on 16th February 1898.

Khensabai, wife of Rejabali Rehim, 21 years, Khoja Street, No. 8, died on 28th February 1898.

Bhindi Bazár.

Prembai, wife of Bana Ismail, 60 years, Chibútgali, No. 124, died of plague at home on 1st February 1898.

Suntok, daughter of Jeto, mother of Hasam Jooma, 65 years, No. 126, Parel Road, Bhindi Bazar, died on 5th February 1898.

Walbai, wife of Ahmed Munji, 50 years, Park Modi Street, opposite Mussafar Khana, died on 6th March 1898.

Sarakhanu, daughter of Mahomed Varin, 9 months, Parel Road, No. 410, died on 17th April 1898.

Kándi Moholla.

Mahomed Nanji, 35 years, Kándi Moholla, died of plague in the Khoja Hospital on 29th December 1897.

Ramji, son of Gulamhusein, 6 months, Tandel Street, Chatriserang Moholla, died on 14th January 1898.

Khimji Kasam, 56 years, Kándi Moholla, died of plague in the Khoja Hospital on 3rd February 1898.

Nanbai Megji, daughter-in-law of Datoo Revji, 14 years, Kándi Moholla, died of plague at home on 3rd February 1898.

Janbai, daughter of Punja Jesraj, 4 years, Kándi Moholla, died on 3rd February 1898.

Nurmahomed Poonja, 30 years, Kándi Moholla, died of plague in the Khoja Hospital on 16th February 1898.

Soni, daughter of Juma and grand-daughter of Hasam Khimji, 1½ years, Kandi Moholla, Baba Street, died on 16th February 1898.

Miriumbi, daughter of Devraj Kilian, 16 years, Kandi Moholla, died on 2nd March 1898.

Jetha Alana's son, 15 days, Kandi Moholla, died on 7th March 1898.

Sonbai, wife of Sheriff Dosa, 25 years, H. H. the Aga's Chawl, died of plague in the Khoja Hospital on 17th March 1898.

Janbai, wife of Velsi Megji, 50 years, H. H. the Aga's Chawl, died on 10th April 1898.

Darga Moholla.

Fatmabai, daughter of Wali, Ahmed Hamir's wife, 14 years, Kasai Galli, 2nd Dotar Street, Khoja Moholla, died of plague in the Khoja Hospital on 2nd January 1898.

Monghi, daughter of Isa Nandoo, 1½ years, Nissanpada Cross Street, died on 8th January 1898.

Gulamhusein Manek Haji, 32 years, Corner of Bengalpura, Nisandanpara Street, died on 11th January 1898.

Nanbai, wife of Jiva Moolji, 75 years, Bengalpura, Nisanpara Road, No. 241, died on 11th January 1898.

Janbai, wife of Gangji Sajoo, 56 years, Darga Moholla, died of plague at home on 12th January 1898.

Janmahomed, son of Pira Moolji, 12 years, Tandel Street, died of plague at home on 14th January 1898.

Teijbai, wife of Ravji Alarekhia, 25 years, Corner of Bengalpura, Nisandarpara Street, died of plague in the Khoja Hospital on 16th January 1898.

Fulbai, wife of Kanji Mahada, 54 years, Bengalpura, Nisandarpara Road, No. 241, died on 17th January 1898.

Sekinabai, daughter of Jaffer Remoo, 12 years, Shatrisarang Moholla, died of plague in the Khoja Hospital on 22nd January 1898.

Permabai, wife of Sumar Dama, 50 years, Palkhi Moholla, died of plague in the Khoja Hospital, on 24th January 1898.

Hasam Kasam, 35 years, Bengalpura, Nisandarpara Road, house No. 241, died of plague in the Khoja Hospital on 26th January 1898.

Jenab, daughter-in-law of Remtoola Ladha, 17 years, Bengalpura Street, house No. 432, died on 28th January 1898.

Fatmabai, daughter of Lalji Molu Alarakhia, 24 years, Palkhi Moholla, near the Hindu temple, died on 28th January 1898.

Ratanbai, wife of Munji Asar, 52 years, Chatrisarang Moholla, died of plague in the Khoja Hospital on 30th January 1898.

Kulsambai, daughter of Rehemtula Ladha, 11 years, Bengalpura Street, House No. 432, died of plague at home on 30th January 1898.

Munji Asar, 60 years, Chatrisarang Moholla, died of plague in the Khoja Hospital on 31st January 1898.

Mahamed, son of Bhanji Visram, 20 years, Palkhi Moholla Lane, died of plague in the Khoja Hospital on 1st February 1898.

Sirinbai, daughter of Kerim Kasam, 6 months, Tandel Street, House No. 35, died on 1st February 1898.

Jinabai, daughter of Jivraj Vainya, 9 months, Chatrisarang Moholla, died on 1st February 1898.

Gangabai, wife of Asar Premji, 65 years, Bengalpura Nisandarpara Street, House No. 250—252, died on 5th February 1898.

Herji Dunger, 70 years, Nisanpara, died on 5th February 1898.

Lalji Parpia, 65 years, Tandel Street, died on 5th February 1898.

Siribai, daughter of Sumar Gulamhusein, 12 years, Bengalpura Nisanpada Road, House No. 241, died of plague in the Khoja Hospital on 10th February 1898.

Pirbhai Somji, 52 years, Nisanpara, House No. 127, died on 15th February 1898.

Juma Kasam, 40 years, Tandel Street, No. 81, died on 17th February 1898.

Nazarali, son of Revji Punja, 12 years, Mahomed Sajan's house at Durga Moholla, died of plague in the Khoja Hospital on 28th February 1898.

Alibhoy Jiva, 22 years, Bengalpura Nisandarpara, died of plague in the Khoja Hospital on 1st March 1898.

Dhunbai Walji Revji, 65 years, Tandel Street, No. 142, died on 5th March 1898.

Mahomed Ruttansi, 60 years, Old Bengalpura Street, No. 257, died of plague in the Khoja Hospital on 6th March 1898.

Rehimtula Aladin Munji, 16 years, Umarkhadi 2nd Road, No. 59, died of plague in the Khoja Hospital on 9th March 1898.

Ratanbai, mother of Giga Visram, 90 years, Bengalpura Nisandarpara, died on 11th March 1898.

Puribai, mother of Somji Mavji, 60 years, Bengali Street, died on 14th March 1898.

Khanubai, wife of Molu Kasam, 27 years, Bengalpura Street, No. 389, died on 15th March 1898.

Siribai, daughter of Fazul Alarakhia, 2½ years, Darga Moholla, died on 15th March 1898.

Manbai, wife of Nathu Abhu, 46 years, Nisanpada Street, House No. 98, died on 17th March 1898.

Khatija, daughter of Jan Herji, 7 months, Chatrisarang Moholla, died on 19th March 1898.

R[illegible]nsi Mavji, 65 years, Nisanpada, died on 21st March 1898.

B[illegible]nbai, wife of Mahomed Najak, 55 years, Nisanpada Street, died on 22nd March 1898.

Ibrahim, son of Giga Visram, 6 months, Nisanpada Street, died on 25th March 1898.

Miriumbai, daughter of Premji Ruttansi, 7 years, Nisanpada Street, House No. 185, died on 26th March 1898.

Jainabai, daughter of Jaffer Megji, 14 years, Nisanpada Cross Road, No. 39, died on 26th March 1898.

Siribai, daughter of Jairaj Pira Virji, 5 years, Nisanpada Street, died on 30th March 1898.

Bachu, son of Jivraj Pira, 4 months, Nisanpada, died on 5th April 1898.

Khatijabai, daughter of Navroz Lila Ibji, 8 months, Nisanpada Street, died on 5th April 1898.

Hurbai, wife of Mahomed Piru, 80 years, Tandel Steeet, died on 6th April 1898.

Sikinabai, daughter of Munji Bhanji, 11 years, Nisanpada Cross Road, house No. 39, died on 8th April 1898.

Ruttonbai, wife of Mitha Daya, 80 years, Darga Moholla, died of plague in the Khoja Hospital on 9th April 1898.

Teijbai, wife of Versi Devji, 65 years, Darga Moholla Nisanpada Road, Alarakhia Keshwarni's house, died on 18th April 1898.

Mirium, daughter of Dawud Juma, 1¼ year, Nisanpada Street, died on 19th April 1898.

Umarkhadi.

Alli Haji, Mahomed Sumar's brother's son, 18 years, Umarkhadi, died of plague at home on 15th January 1898.

Sunderji Kerim, 4 years, Jail Road, East House No. 50, died on 27th February 1898.

Kharak Road.

Hirabai Raoji, daughter-in-law of Dosa Mavji, 28 years, Kharak Road, died of plague in the Khoja Hospital on 29th December 1897.

Kara, Jaitha's wife, 75 years, Kharak Road, died on 5th January 1898.

Sekinabai, daughter of Mirali Premji and grand-daughter of Premji Jeraj, 6 months, Kharak Road, died on 9th January 1898.

Fatmabai, daughter of Miralli Premji and grand-daughter of Premji, Jeraj, 1½ years, Kharak Road, died on 14th January 1898.

Rehemtula Khaki Pudemsi, 33 years, Kharak Road, died on 15th January 1898.

Abba, son of Premji Jivraj, 1 year, Kharak Road, died on 29th January 1898.

Sherbanoo, daughter of Amersi Sheriff, 1½ years, Kharak Road, died on 4th February 1898.

Jairaj Thaver's daughter, 3 years, Kharak Road, died on 12th February 1898.

Mahomed Pira Megji, 28 years, Kharak Road, died on 17th February 1898.

Ali Raja Suleman, son of Kasam Ali Ali Raja, 2 years, Kharak Road, died on 20th February 1898.

Ibrahim Hasam Munji, 35 years, Kharak Road, died on 24th February 1898.

Manbai, wife of Ibram Mitha of Chival—Revadanda, 41 years, Kharak Road, died on 10th March 1898.

Pala Gulli.

Fazul, son of Hasan Teja, 22 years, Munda Gulli, died on 10th January 1898.

Janbai, daughter of Virji and wife of Miralli Hamir, 32 years, Samuel Street, house No. 268—270, died on 12th January 1898.

Gulamhusein Lala, 55 years, Samuel Street, house No. 308—314, died of plague in the Khoja Hospital on 19th January 1898.

Siribai, daughter of Ladha and wife of Hamir Juma, 30 years, Samuel Street, house No. 308—314, died on 18th February 1898.

Remat, daughter of Sachu Alarakhia, 4 years, Munda Gulli, died on 24th March 1898.

Nurmahamed, brother of Dhunji Ragu, 58 years, Samuel Street, house No. 326, died on 25th March 1898.

Ismail, son of Alarakhia Munji, 25 years, Munda Gulli, died on 25th March 1898.

Sonbai, daughter of Haji Murji, 10 years, Munda Gulli, died on 2nd April 1898.

Bhalu Tharia, 62 years, Samuel Street, died on 4th April 1898.

Remtala Piru, 65 years, Munda gulli, died on 12th April 1898.

Jainab, wife of Nazerali Karva, 16 years, Parel Road, died on 14th April 1898.

Sherbanu, wife of Muradali Purdhan, 16 years, Samuel Street, died on 16th April 1898.

Dungri Street.

Bendali Pudemsi, 43 years, Nágdevi Street, near old Post Office, died on 29th December 1897.

Kerim Nathu Sivji, 28 years, 2nd Chinchbunder Road, died of plague at home on 4th January 1898.

Mavji Anand, 70 years, Chinchbunder, 2nd Road, house No. 572, died of plague in the Khoja Hospital on 7th January 1898.

Ranbai, wife of Rehim Nanji, 60 years, Máhim, near Máhim Bazár, died of plague in the Khoja Hospital on 10th January 1898.

Gulamhusein, son of Megji Mahamed, 8 years, Chinchbunder, 2nd Road, house No. 607, died of plague in the Hospital on 11th January 1898.

Ali Mahomed Vali Casam, 24 years, Dungri Street, died of plague at home on 11th January 1898.

Jina Kara's daughter, 10 days, 2nd Chinchbunder Road, house No. 600, died of plag at home on 11th January 1898.

Jeraj Walji, 55 years, 2nd Chinchbunder Road, died on 12th January 1898.

Chagbai, wife of Mahomed Allu, 60 years, 2nd Chinchbunder Road, died on 15th January 1898.

Saley Khakey's son, 8 months, Dungri Street, died on 21st January 1898.

Rehimtula, son of Sacha Hasam, 8 years, Chinchbunder 2nd Road, died on 21st January 1898.

Dharsi Khaku, 62 years, Dungri Bazár, died on 25th January 1898.

Gangji Aladin, alias Gulamhusein, 43 years, 2nd Chinchbunder Road, died on 28th January 1898.

Abdulla, son of Molu Ravji, 2 months, Dungri Bázár, near Palla Gulli, died on 7th February 1898.

Katubai, daughter of Ahmed and grand-daug... of ... Mahomed Rehim, 8 months, Chinchbunder 2nd Road, died on 8th February 1898.

Bachu, son of Mulji Hasam and grand-son of Hasam Gangji, 20 days, Dungri Bazár, Chinchbunder 2nd Road, died on 12th February 1898.

Khatijabai Wilshi, daughter-in-law of Hasam Mahomed, 15 years, 1st Navroji Hill Road, died on 16th February 1898.

Sacha Meluk, 75 years, Samuel Street, died on 6th March 1898.

Kajbai, wife of Ismail Sivji, 36 years, Dungri Street, opposite Jerajbhai Pirbhai water-cystern, died on 9th March 1898.

Bachu, son of Meralli Jeraj, 1¾ years, 2nd Chinchbunder Road, died about the 10th March 1898.

Ismail Meralli Alarakhia, 17 years, Dungri Street, died of plague in the Khoja Hospital on 17th March 1898.

Kasam Sivji, 54 years, Dungri Street, house No. 575, died on 20th March 1898.

Chandibai, wife of Gulamhusein Dhunji, 15 years, Navroji Hill, 1st Road, house No. 169, died on 27th March 1898.

Fatmabai, daughter of Fazul Miralli, 6 months, Dungri Street, house No. 564, died on 27th March 1898.

Sekinabai, daughter-in-law of Abdula Sivji, 23 years, Chinchbunder 3rd Road, house No. 595, died of plague in the Khoja Hospital on 7th April 1898.

Devan Ban, mother of Gulamhusein Remtala, 72 years, Dungri Street, house No. 581, died on 10th April 1898.

Kasam Jaitha, 58 years, corner of Dungri Street and Samuel Street, died on 10th April 1898.

Dost Mahomed Hasam's daughter, 1½ months, Dungri Street, 2nd Chinchbunder Road, house No. 583—585, died on 16th April 1898.

Rimtula, son of Dhunji Kasam, 30 years, Chinchbunder 1st Road, died on 18th April 1898.

Khoja Moholla.

Mirium, daughter of Bhanj Poonja, 9 years, Kasai Gulli, 2nd Dotar Street, died of plague in the Khoja Hospital on 27th December 1897.

Miriumbai, daughter of Vali Poonja, 10 years, Kasai Gulli, 2nd Dotar Street, died of plague in the Khoja Haspital on 1st January 1898.

Lalbai, wife of Kermali Haji, 35 years, Khoja Moholla, died of plague in the Khoja Hospital on 19th January 1898.

Abdul Kerim Abdull, 22 years, Khoja Moholla, died on 23rd February 1898.

Mahomed Rehemtula, 35 years, Mugbat Lane, house No. 10, died of plague at home on 23rd February 1898.

Hasam Nensi Kheraj, 23 years, Khoja Moholla, died of plague at home on 13th March 1898.

Abas Mahomed Dosa, 12 years, Kasai Gulli, 2nd Dotar Street, Died of plague at home on 13th February 1898.

Chagbai alias Ruttonbai, wife of Gulamhusen Munji, 42 years, Kumbhárwada Cross Lane, died of plague in the Khoja Hospital on 31st March 1898.

Furniture Bázár.

Meralli Dhunji, 54 years, Bandari Street, died of plague in the Khoja Hospital on 27th December 1897.

Kasam Munji, 45 years, Chakla Street (Old Kasai Street), House Nos. 7, 9, 11, died on 27th December 1897.

Nurmahomed, son of Virji Herji, 12 years, Bhandari Street, Chakla Road, died of plague in the Khoja Hospital on 29th December 1897.

Nurmahomed Sekiladtha, 75 years, Gavli Moholla, died on 5th January 1898.

Alimahomed, son of Vali Datu, 8 months, Chakla Street, died on 15th January 1898.

Pudmabai, wife of Arad Merav, 67 years, 2nd Bundarwála Street, died on 15th February 1898.

Janbai, wife of Pirbhai [illegible] years, Bandari Street, died on 23rd February 1898.

[illegible], wife of Ibrahim Kasam and daughter of Pirbhai, 62 years, Chakla Street, House No. 11, died of plague in the Khoja Hospital on 3rd March 1898.

Sekinabai, wife of Pirbhai Alarakhia, 20 years, Chakla Street, House Nos. 7, 9, 11, died on 6th March 1898.

Gangji Pissu, 72 years, Bhandari Street, died on 20th March 1898.

Fatma, daughter of Kasam Ramtula, 8 years, Kalasi Chakla Street, died of plague in the Khoja Hospital on 5th April 1898.

Nurmahomed Wali, 40 years, Chakla Street, died on 5th April 1898.

Gulamhusein, son of Meralli Koorji, 9 months, Chakla Street, died on 18th April 1898.

Market.

Alibhai Nanji, 58 years, Nagdevi Road, Bhájipála Lane, died of plague in the Khoja Hospital on 22nd February 1898.

Sekina, daughter of Rehimtula Kerim and grand-daughter of Kerim Datu, 2 years, Sutár-Chawl, Abdul Rehman Street, died on 11th March 1898.

Saley Mahomed Gulamhusein Somji, 6 years, Khetwadi, 12th Lane, died of plague in the Khoja Hospital on 24th March 1898.

Nensi Pirbhai Mahomed, 52 years, Crawford Market, Kitchen Garden, died on 29th March 1898.

Kasam Somji Gangji, 35 years, Nagdevi Street, died on 20th April 1898.

Dhobi Talao.

Walbai, daughter of Walji Punja, 6 years, Dhobi Talao, died of plague in the Khoja Hospital on 28th March 1898.

People without fixed residence.

Rehimtula Nurmahomed, 28 years, died of plague in Hospital on 14th January 1898.

Bhanji Nurmahomed, 22 years, Israel Street, brought from House No. 23—25, died of plague in the Khoja Hospital on 22nd February 1898.

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