Local & Munl. (1899) Department.

PRINTED.

G.O., No. 462P

DATED 24/3/99

Depts
Ir. Br
7-4-99

[Despatch Abstract.]

Capt. Leumann's report on inoculation at Hubli

ordering the distribution of the 60 Copies,

received from the Govt. of Bombay, 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 {1899} of Madras.

LOCAL AND MUNICIPAL.

Recd. } 1899. *Enclosures*

Regd. *Spare copies*

G.O., No. 462 P., 24th March 1899.

MARCH.

Captain Leumann's Report on Plague Inoculation at Hubli.

Ordering the distribution of the 60 copies of —, received from the Government of Bombay.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following papers:—

From the Government of Bombay, dated 4th February 1899, No. 823 P.

ABSTRACT.—Forwarding copy of the resolution of the Government of Bombay together with Captain Leumann's report on plague inoculations performed at Hubli.

From the Government of Bombay, dated 14th March 1899, No. 1846-P.

ABSTRACT.—Forwarding, with reference to letter, Mis. No. 339 P., dated 3rd March 1899, from this Government, 50 additional copies of Captain Leumann's report on plague inoculations at Hubli.

ORDER—No. 462 P., dated 24th March 1899.

The sixty copies of Captain Leumann's report on plague inoculation at Hubli, received with the letters read above, will be distributed as shown below:—

	Number of copies.
Plague Commissioner	2
Sanitary Commissioner	1
Surgeon-General	1
President, Municipal Commission, Madras	1
Collectors	22
District Medical and Sanitary Officers	22
Editors' Table	4
To be kept in stock	7
	60

(True Extract.)

H. TREMENHEERE,
Secretary to Government.

To the Plague Commissioner, with two copies of the report.
„ the Sanitary Commissioner, } with one copy of the report.
„ the Surgeon-General, }
„ the President, Municipal Commission, Madras,
with one copy of the report.
„ all Collectors, with two copies of the report—
one for the Collector and the other for
the District Medical and Sanitary Officer.

Exd. T. K. Narayana Aiyangar.

Government {1899} of Madras.

LOCAL AND MUNICIPAL.

Recd. } 1899. *Enclosures*

Regd. *Spare copies*

G.O., No. 462 P., 24th March 1899.

MARCH.

Captain Leumann's Report on Inoculation at Hubli.

Ordering the distribution of the 60 copies, ~~received from the Government of Bombay,~~ of —, received from the Government of Bombay.

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	7
	60

(True Extract.)

for *Secretary to Government.*

To the Plague Commissioner, with two copies of the report
" the Sanitary Commissioner, } with one copy of the report
" the Surgeon-General, }
" the President, Municipal Commission, Madras, do.
" all Collectors, with two copies of the report—one for himself and the other for the Dt. medical & Sanitary Officer.

How is it there are only 4 addresses?

Despd 24/3/99

Exd. T K. Narayana Aiyangar.

Omission supplied

Local and Municipal Department.

Again G.O., No. , dated 189 .
Current No. 258 of 189 , dated 4.2.99 from the Govt. of Bombay
Current No. 613 of 189 , dated 14.3.99 from the Do.

SUBJECT.

Captain Leumann's report on plague inoculation at Hubli

~~FOR~~ ORDER. No 462 P 24-3-99

The 60 Copies of Captain Leumann's report on plague inoculation at Hubli received with the letters read above will be distributed as shown below.

	no of copies
Plague Commr.	2
Sanitary Commr	1
Surgeon-General	1
President, M.C., Madras.	1
Collectors	22
Dt. medical & Sanitary officers	22
Editors' Table	4
To be kept in stock	7
	60

To,

The Plague Commr } with two copies of the report
" Sanitary Commr } with one copy of the report
" Surgeon-General }
" President, M.C., Madras— ~~with a copy of the report~~ (absentee)

All Collectors— with two copies of the report one for himself & the other for the Dt. M. & S. O.

V.P. 22/3/99

Note

One copy was already sent

H. 24.3.99

[L. & I. 209–17–4]

NOTE FOR THE Private Secretary.

A Copy of Captain Leamann's report on plague inoculation at Hubli, received from the Government of Bombay, is sent herewith for the perusal of His Excellency the Governor.

V.B
27/3/99

A. Trevenen
28 399

[L. & M. 20—8-11-98.]

NOTE FOR THE Hon'ble Member.

A copy of Capt^n Leumann's report on inoculations at Hubli, forwarded with the Resolution of the Govt of Bombay N^o 786 dy 2^d February 99, is submitted to H. M. for information

V.B
7/3/99

Seen
7.3.99

[L. & M.
50—8-11-98.]

PRIVATE SECRETARY TO THE GOVERNOR · MADRAS ·

GOVERNMENT HOUSE.

Ootacamund 17th May 1897

My dear Hammick,

His Excellency wishes me to return you the enclosed, with many thanks.

Yours sincerely
W. Lawrence
Lt

Seen
MH 17.3.

* Capt. Leamanni's Report on Plague Inoculation at Hubli

Local & Munl. (1899) Department.

CURRENT No. 2587

To await receipt of the report
11/99

W 8/2/99

1 abstract
Print abstract only

From The Govt of Bombay.

Note for the Secy
The report since received is
just up. Only 10 spare copies of it
have been received. If it be
considered necessary to Commte
it to Collrs & D. Surgs S.D.S, we
should get the required number
of copies from Bombay.
11/2/99

Eqs - ask for
them. meanwhile
send copies to
H.m, P.C, S.C, S.G,
& E.C.
W 2/399.

Order

No. 8237

Dated 4.
Received 6. } 7/2/99
Registered 6.

Enclosures 1

Spare copies. 10 of encl.
11 copies of report recd 24/2

Ended
9-3-99.
Dpr.
Distributed
copies as directed
by Secy
3/3

SUBJECT.

Forwarding copy of the Resolution of the Govt of Bombay together with Captain Leumann's report on plague inoculations performed by him at Hubli thereon referred to

T.P.
GO 339 Print 23 3 99.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

Plague.—
Reports.
Report on inoculations at Hubli by Captain B. H. F. Leumann, I.M.S.

Plague.—
Inoculation.
Report on inoculations at Hubli by Captain B. H. F. Leumann, I.M.S.

General Department (Plague).
No. 786-P.

Bombay Castle,
2nd February 1899.

Letter from W. M. Haffkine, Esq., C.I.E, No. 673, dated the 5th October 1898.

Telegram from the Government of India, Home Department, No. 4153, Sanitary, dated the 14th October 1898:—

"Government of India will be glad if Bombay Government will kindly send copy Leumann's report on plague at Hubli for their information."

Letter to the Surgeon General with the Government of Bombay, No. 5890-P., dated the 18th October 1898.

Letter from the Collector of Dhárwár, No. 7569,* dated the 19th October 1898—

Forwards report on preventive inoculation against plague at Hubli by Captain Leumann.

Letter to the Government of India, Home Department, No. 5933-P., dated the 20th October 1898.

Letter from the Collector of Dhárwár, No. 7599, dated the 21st October 1898.

Letter to the Government of India, Home Department, No. 6001-P., dated the 25th October 1898.

Memorandum to the Surgeon General with the Government of Bombay, No. 6379-P., dated the 16th November 1898.

Letter from the Surgeon General with the Government of Bombay, No. 15093,* dated the 26th November 1898—

Offers remarks on Captain Leumann's report.

Letter to W. M. Haffkine, Esq., C.I.E., No. 6673-P., dated the 1st December 1898.

Letter from W. M. Haffkine, Esq., C.I.E., No. 1002, dated the 3rd December 1898.

Letter to W. M. Haffkine, Esq., C.I.E., No. 7002-P., dated the 17th December 1898.

Telegram from the Government of India, Home Department, No. 4763, Sanitary, dated the 20th December 1898.

Telegram to the Government of India, Home Department, No. 7155-P., dated the 23rd December 1898.

Memorandum to W. M. Haffkine, Esq., C.I.E., No. 7156-P., dated the 23rd December 1898.

Letter from the Secretary, Indian Plague Commission, No. 194, dated the 3rd January 1899—

Requests to be supplied with copies of Captain Leumann's report for the use of the Commission.

Letter to W. M. Haffkine, Esq., C.I.E., No. 101-P., dated the 7th January 1899.

Letter to W. M. Haffkine, Esq., C.I.E., No. 532-P., dated the 24th January 1899.

Letters from W. M. Haffkine, Esq., C.I.E., Nos. 1283* and 1284,* dated the 26th January 1899—

Offering remarks on Captain Leumann's report.

---

* Printed as an accompaniment to Captain Leumann's Report.

RESOLUTION.—Captain Leumann's report should be printed as soon as possible at the Government Central Press and copies distributed by the Superintendent as follows:—

	Copies.
The Secretary, Indian Plague Commission	10
The Plague Commissioner	2
All Commissioners... ... ... (2 each)	8
All Collectors (including the Collectors and Deputy Commissioners in Sind) ... ... (10 each)	230
The Political Agents, Kolhápur, Káthiáwár, Cutch, Rewa Kántha and Mahi Kántha ... ... (5 each)	25
The Political Superintendents, Pálanpur and Sávantvádi ... (5 each)	10
The Commissioner of Customs, Salt, Opium and A'bkári	10
The Collector of Land Revenue, Customs and Opium, Bombay ...	5
The Collector of Salt Revenue, Bombay	5
The Sanitary Commissioner for the Government of Bombay	10
The Municipal Commissioner for the City of Bombay	10
The Health Officer of the Port of Bombay	5
The Inspector-General of Police	5
The Commissioner of Police, Bombay	5
The Supervising Medical Officer, Railway Medical Inspection... ...	15
All Departments of the Secretariat (except the Legislative, Ecclesiastical and Separate Departments) ... ... (1 each)	9
The Principal Medical Officer, Bombay Command	5
The Government of India	32
The Government of Madras	10
The Government of Bengal	10
The Government of Burma	10
The Government of the North-Western Provinces and Oudh	10
The Government of the Punjáb.....	10
The Government of Ceylon	10
The Chief Commissioner, Central Provinces	10
The Chief Commissioner, Assam	10
The Resident at Hyderabad	10
The Agent to the Governor General at Baroda	10
The Agent to the Governor General, Central India	10
The General Department of the Secretariat (Plague) (including M. Haffkine's requirements)	1,000
The Resident in Mysore	10
Captain B. H. F. Leumann, I.M.S.	20
The Editors' Table, Bombay	1
The Editors' Table, Poona...	1
The Editors' Table, Belgaum	1
The Editors' Table, Dhárwár	1
The Private Secretary to His Excellency the Governor	5
The Deputy Adjutant General, Bombay Command	5

2. The Surgeon General with the Government of Bombay should be requested to inform the Superintendent, Government Central Press, direct, how many copies of the report he requires for his own use and for distribution to medical charges, &c.

3. The thanks of Government should be conveyed to Captain Leumann, I.M.S., for his valuable report, and also to the other officers mentioned in the report of the Collector of Dhárwár.

A. WINGATE,
Acting Chief Secretary to Government.

To

The Secretary, Indian Plague Commission,
The Plague Commissioner,
The Surgeon General with the Government 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 the District Superintendents of Police.)
The Political Agents, Káthiáwár, Cutch, Kolhápur and Southern Marátha Country, Mahi Kántha and Rewa Kántha,
The Political Superintendents, Pálanpur and Sávantvádi,
The Deputy Adjutant General, Bombay Command,
The Commissioner of Customs, Salt, Opium and A'bkári,
The Collector of Land Revenue, Customs and Opium, Bombay,
The Collector of Salt Revenue,
The Health Officer of the Port of Bombay,
The Supervising Medical Officer, Railway Medical Inspection,
The Inspector General of Police,
The Commissioner of Police, Bombay,
The Sanitary Commissioner for the Government of Bombay,
The Municipal Commissioner for the City of Bombay,
All Departments of the Secretariat (except the Legislative, Ecclesiastical and Separate Departments),
The Principal Medical Officer, Bombay Command,
The Private Secretary to His Excellency the Governor,
The Superintendent, Government Central Press,
W. M. Haffkine, Esq., C.I.E.,
Captain B. H. F. Leumann, I.M.S.,
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 Government of Ceylon,
The Agent to the Governor General at Baroda,
The Chief Commissioner, Central Provinces,
The Resident at Hyderabad,
The Resident in Mysore,
The Chief Commissioner, Assam,
The Agent to the Governor General, Central India.

} By letter.

No. of 1899.

Copy forwarded for information and guidance to

1
C no 2587 of 99

C no 2587

No. 823/P. of 1899.

GENERAL DEPARTMENT (PLAGUE).

6-FEB.1899 PAL MUNI. EDU. & LEG. DEPT.

Bombay Castle, 4th February 1899.

FROM

THE HONOURABLE SIR A. WINGATE, K.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* copies of this Government Resolution No. 786, dated the 2nd February 1899, together with Captain Leumann's report therein referred to.

*will follow

I have the honour to be,

Sir,

Your most obedient Servant,

Ernest Lands

for Acting Chief Secretary to Government.

No. 7569 OF 1898.

FROM

E. L. CAPPEL, ESQUIRE,
Collector of Dhárwár;

To

THE PLAGUE COMMISSIONER,
Bombay Presidency,
Bombay.

Dhárwár, 19th October 1898.

SIR

I have the honour to forward Surgeon-Captain Leumann's report on plague inoculation at Hubli.

2. The results are shown in the tables under paragraphs XXIII to XXVII, and indicate a protection of 85 per cent. on the whole epidemic, with a figure of from 90 to nearly 100 per cent. for the greater part of the time. More than 24,000 persons were twice inoculated and nearly 10,000 once, of whom the majority have received a second inoculation since the report was written. At the present moment the plague has practically died out at Hubli, and there can be no question as to the causal relation between this fact and the inoculation measures. In his paragraph XXXI, Dr. Leumann has sufficiently disposed of such adverse inferences as might have been drawn from certain general factors in the case.

3. The system of double dosage, which has also been adopted at Dhárwár, exhibits a 10 per cent. advantage over single inoculation. The results so far at Dharwár have been still more significant: 4,926 single inoculations giving 45 cases and 15 deaths, while 3,387 double inoculations have given only 2 cases and 1 death. I concur with Dr. Leumann that the recorded advantage would appear considerably larger if it were possible to eliminate causes of error due to the inoculation of persons in the incubation stage of the disease or with plague on them. This is a risk, however, common in some degree to both first and second inoculations. It is very usual for persons to defer inoculation till plague has appeared in the house or has become virulent in their immediate neighbourhood; they are then "Contacts" and the disease has already laid its hand on a considerable proportion. It is no matter of surprise that the common people should be unable to distinguish between a preventive and a cure, and present experience at Dhárwár goes to show that inoculation is constantly sought by those who feel the approaches of the disease. On this point the Medical Officers are collecting a record (dates of inoculation and of attack) which will be of great interest. It seems impossible to prevent altogether the inoculation of infected persons.

4. In paragraph XXX of the report, Dr. Leumann institutes a rather unfortunate comparison. He contrasts the advantages of inoculation with those of sanitation and hygiene, as if these were rival or opposing systems. There is of course no such rivalry or opposition, and the whole argument seems to be beside the mark. I assume, in any case, that Dr. Leumann intends the tabular statement of the effect of the contrasted systems (page 47) to be a comparison of merely abstract and hypothetical measures; because it is not the case, as might be otherwise inferred, that at Hubli the adoption of inoculation involved the exclusion of measures to destroy the bacilli or to remove the sick from the healthy. Exactly the same work was done to attain these objects as would have been done, had no inoculation been carried out.

5. It is now, I believe, recognized that, under the conditions which obtain in India, sanitary and hygienic measures in the ordinary sense of the words have no *direct* effect upon the course of a plague epidemic. A more effective comparison might be drawn between Inoculation and Evacuation, but even

this would have no practical value, since the one measure or the other must be adopted according to circumstances of expediency and not with reference to any theoretical demonstrations.

6. In the present case the town of Hubli—a mercantile town of over 50,000 inhabitants—was attacked by plague in an epidemic form at the commencement of the monsoon rains. The average rainfall between April and October amounts to more than 28 inches. Under these circumstances, although a large and weather-proof health camp had been prepared for emergencies, complete evacuation of the infected town-site was impossible, and the attempt to effect it would have led to the severest hardships and to the immediate spread of the disease into surrounding villages and districts. It was for this reason that the determination was formed to make a bold and comprehensive experiment with the prophylactic, and not on any *à priori* grounds. If this experiment had failed, the results, judged by the actual mortality among the uninoculated, would have been appalling. All possible sanitary measures in the shape of disinfection, unroofing of houses, and segregation were applied concurrently with inoculation, as Government are already aware; but the rate of mortality among those who held back from inoculation rose at one time to a height which, I believe, has never been approached elsewhere—standing in the third week of September at the figure of 657 per thousand per week.

7. However, the experiment, in the hands of Dr. Leumann, did not fail, and it has afforded a demonstration of success which is of Imperial importance. Many thousands of lives have undoubtedly been saved, and at the present moment the plague mortality is merely sporadic, and Hubli is steadily regaining its normal population and trade, though surrounded by infected villages.

8. Evacuation, when circumstances permit it, is undoubtedly still more effective, but in monsoon weather it is impossible, and applied to towns it spells ruin to commercial interests at any season. Inoculation seems, therefore, to be pre-eminently adapted for large towns and industrial places at all times, and in the rains it is, so far as present experience shows, the only method of staying the disease which can be relied on. For rural areas practical considerations make it altogether inapplicable.

9. The Hubli experiment has as yet left undecided the duration of the prophylaxis and the question whether, without removal of the population, (though each individual may have been immunized) the infection can be extinguished from the inhabited area? These matters are being carefully watched. The re-inoculation of a large town at short intervals of time is a prospect which can hardly be admitted, though the fee system which is now firmly established both in Dhárwár and Hubli disposes of the not inconsiderable question of cost. Up to the present, it is satisfactory to note, there have been no indications of failing protection, though the process was begun on a large scale as long ago as May last. The possibility that the infection will not readily die out on a deeply infected local area which continues to be inhabited (supposing natural conditions to be favourable to it) also requires attention, as the value of the prophylactic method would be *pro tanto* diminished.

10. At each place in the Dhárwár District where inoculation has been introduced there has been at first a natural reluctance to accept it on the part of the people. This has been overcome partly by personal influence, but chiefly by the free relaxation of plague restrictions in favour of the inoculated,—at first a hazardous experiment, but now fully justified. Confidence in the prophylactic has now extended widely over the district, and villagers are coming in large numbers to Hubli and the other inoculation centres to receive protection. Applications have been received offering to pay the expenses of the inoculation staff if sent to rural centres, and the Plague Medical Officer of Gadag recently performed about 100 inoculations on the platform of a Railway Station between Hubli and that place. The successful introduction of a system of payment is itself conclusive as to difficulties arising from popular objections to the process.

11. Dr. Leumann's report constitutes a record of most arduous and admirable work, and his devotion and ability in carrying it through to a successful

termination merit the highest recognition. The statistical data and the inferences drawn from them will doubtless receive full attention from the Medical Department.

Dr. Leumann has mentioned the services of Dr. Winter, who gave valuable assistance in the operations, and of Assistant Surgeon Mascarenhas, who has done excellent work at Hubli throughout the epidemic. Dr. Chenai, the Principal Medical Officer of the Southern Mahratta Railway, has also co-operated usefully, as did the other Medical Officers entertained by the Southern Mahratta Railway towards the end of the operations.

Special mention is due to Dr. Cardoz, Vice-President of the Municipality and Assistant Surgeon, whose assistance in the operations was a powerful factor of their success; it appears that no less than 17,000 of the inoculations stand to this officer's credit. Dr. Cardoz threw the whole weight of his personal influence into the scale and contributed greatly to the overcoming of the difficulties inseparable, at least at the outset, from so large and novel an undertaking.

Among the Executive Plague Staff the greatest credit is due to Lieutenant H. P. Keelan, of the 7th Bombay Infantry, who, as Chief Superintendent, worked on parallel lines with the Medical Officers in impressing upon the people the advantages of inoculation and in the concurrent administrative measures involved. The energy, tact, and good temper of this officer were of conspicuous value, and that the mortality was not greater than it has been, is in no small degree due to the good work done by him in the way of the evacuation and disinfection of the affected quarters. Lieutenant Keelan kept the system of supervision well in hand, and the laborious task of issuing passes and of Railway Station disinfection and inspection were also executed by him with complete efficiency. In these duties he was ably seconded by Lieutenant H. E. Browne, 12th Bombay Infantry, who took his share of the work with great zeal and energy. The 69 typical cases of households in which the inoculated escaped while the uninoculated suffered, which Dr. Leumann forwards as an appendix to the report, are selected out of about 200 of the same kind investigated and reported by Lieutenant Keelan.

Mr. W. Coen, Chairman of the Municipal Managing Committee, gave much assistance throughout, and the town is indebted to him for the performance of much troublesome business done in a period of stress and anxiety. Acknowledgments are also due to the Reverend Mr. Lateward and the Reverend Mr. Warth, who by aid and example did a good deal to remove difficulties.

Ráo Saheb K. G. Kalghatgi, Mámlatdár of Hubli, has earned commendation from all concerned for his quiet but unremitting usefulness in many directions. Mr. Kalghatgi personally set an excellent example of obedience to plague regulations when the disease attacked the quarter in which he lived and his own family, and has been one of the most useful members of the District Staff.

12. Government are aware of the cordial co-operation with which the Agent of the Southern Mahratta Railway has assisted in all plague measures. Major Burn Murdoch's unvarying readiness to accept the necessary inconveniences of the situation and to further the general operations as well as those among the Railway employes, who constitute a large proportion of the population of Hubli, has greatly lightened the burden thrown upon both the lay and medical executive; and I trust that I may be allowed here to express my sincere acknowledgments to him for the invaluable assistance afforded. My best thanks are also due to the officers of the Railway Staff who, under Major Burn Murdoch's direction, superintended the operations carried out within the Railway lines with equal cordiality and helpfulness.

I have the honour to be,
Sir,
Your most obedient Servant,
E. L. CAPPEL,
Collector of Dharwar.

Report on Preventative Inoculation against Plague in Hubli, from 11th May to 27th September 1898.

I. In such diseases as typhoid fever and cholera, if the serum taken from the blood of a patient who has recently recovered from an attack, or from an immunized animal, be added to virulent bacilli of the disease, certain phenomena, characterized chiefly by the agglomeration and precipitation of these bacilli, and their consequent destruction, are capable of being demonstrated. The agglomeration can easily be seen on a slide under the microscope and, in honour of its discoverer, is known as Widal's test; while the precipitation reaction, first enunciated by Durham, can be demonstrated in either a capillary tube (Wright, of Netley) or small test tube (Pfeiffer); and both these tests are also readily obtained when the serum taken from a patient convalescing or recently recovered from plague is added to virulent test bacilli.

Widal's Test and Durham's Test in typhoid fever, &c.

Both these tests are capable of being shown in plague, and

Yersin's curative serum, obtained from horses after they have been inoculated with successively large doses of plague bacilli, also shows this result; and Wright's inoculation against typhoid fever will, after the febrile reaction caused by it has passed off, present in the serum taken from the blood of the person inoculated, a similar "bactericidal" reaction with typhoid bacilli—(*i.e.*, the bacilli of that disease are destroyed by such serum).

Can also be obtained with Yersin's serum.

II. Arguing by analogy, I endeavoured over a year and-a-half ago to prove that the serum of a person recently "Haffkinised"—*i.e.*, protected by Mr. Haffkine's method against plague—would also be bactericidal to test bacilli, and thus afford a practical demonstration of the actual protective value of such inoculation: but although I experimented with the serum from several persons inoculated by Haffkine's staff, I failed at first to obtain such reaction. Somewhat later, however, I did find in the serum taken from a "Haffkinized" monkey, and also in the serums from persons who had been twice-inoculated, similar bactericidal properties against virulent plague bacilli to those met with in the serum of persons who had recovered from the disease. I did not, indeed, obtain these reactions in every case, but in a goodly number (and these had been twice-inoculated with a full dose of the prophylactic each time within six weeks before I saw them); so I argued therefrom, rightly or wrongly remains to be proved, that it would be better, in inoculating Natives against plague, to inoculate them twice within a comparatively short space of time and thus give them the fullest protection possible for a certain period—*e.g.*, six months—which I considered such inoculation would be fully protective for.

The serum from a well "Haffkinized" person will also exhibit Widal's Test.

My reasons for inoculating people twice, based on Widal's Test.

III. Such, in short, is the method I have adopted in Hubli: and, in order to induce the inhabitants thereof to present themselves for inoculation, I drew up at the very outset certain rules (to be found below) which were freely circulated in printed form and proclaimed by beat of drum throughout the town.

My reason for inoculating made public in Hubli.

Notice.

It is hereby notified that inoculation with Anti-Plague fluid will be carried out twice a week, on Tuesdays and Fridays, at the Civil Hospital, at 8 A.M., punctually.

This inoculation process appears to have been most successful elsewhere in protecting people against the Plague.

Persons able to show certificates of having been inoculated twice within six months will be exempt from segregation and detention in Hubli, except for such short time as is necessary for the disinfection of their houses and property. By such means persons from an infected area will derive the following benefits :—

1. They will remain 2 or 3 days only instead of 15 days in the Health Camp.

2. If desirous of going eleswhere than to the Health Camp this will be allowed them after they and their kit have been disinfected.

3. They will more readily be able to obtain passes to leave Hubli for purposes of trade, &c.

4. They will be less liable to be detained in other districts.

HUBLI,
28th April 1898.

B. H. F. LEUMANN,
Surgeon-Captain.

ನೋಟೀಸು.

ಯಾವತ್ತು ಜನರಿಗೆ ತಿಳಿಯತಕ್ಕ ಹಗ್ಗೆ ಪ್ರಗಟ ಮಾಡುವದೇನಂದರೆ;—

೧. ಪ್ರತಿ ಮಂಗಳವಾರ ಮತ್ತು ಶುಕ್ರವಾರ ಈ ಪ್ರಕಾರ ಒಂದು ಆತನಡೆದಲ್ಲಿ ಎರಡು ದಿವಸ ಮುಂಜಾನೆ ಸರಿಯಾಗಿ ೮ ಘಂಟಿಕ್ಕೆ ಇಲ್ಲಿಯ ಸಿವಿಲ್ ಡಿಸ್‌ಪೇನಸರಿಯೆಲ್ಲಿ ಪ್ಲೇಗ ಪರಿಹಾರಕ ರಸದಿಂದ (ಇನ್ಯಾಕ್ಯೂಲೇಶನ್ನು) ಚುಚ್ಚುವ ಕೆಲಸವು ನಡೆಯುವದು.

೨. ಈ ಪ್ರಕಾರಾ ಚುಚ್ಚಿಸಿಕೊಂಬುವ ಕ್ರಮವು ನಡೆಬಿರುವ ಸ್ಥಳಗಳಲ್ಲಿಯು ಜನರಿಗೆ ಪ್ಲೇಗದಿಂದ ರಕ್ಷಣೆ ಮಾಡುವದರಲ್ಲಿ ಇದು ಬಹಳೇ ಗುಣವಹ ಆಗಿರುತ್ತದೆಂದು ಕಂಡು ಬರುತ್ತದೆ.

೩. ಈ ಪ್ರಕಾರ ಪ್ಲೇಗ ಪರಿಹಾರಕ ರಸದಿಂದ ಎರಡು ಸಾರೆ ಮೈಲಿ ತಗಿಸಿಕೊಂಡ ಸರ್ಟಿಫಿಕೇಟಗಳನ್ನು ಯಾವ ಜನರು ತೋರಿಸುವರು ಅವರಿಗೆ ಅವರ ಮನಿ ಮತ್ತು ಸಾಮಾನ ವಗೈರೆ ಸ್ವಚ್ಛ ಮಾಡಸಲಿಕ್ಕೆ ಬೇಕಾಗುವಷ್ಟು ವೇಳ್ಯ ದಕ್ಕಿಂತ ಹೆಚ್ಚಿಗೆ ವೇಳೆ ಹುಬ್ಬಳ್ಳಿಯಲ್ಲಿ ಸಿಗ್ರಿಗೇಶನ್ನದಲ್ಲಿಯೂ ಮತ್ತು ಯಾವ ಪ್ರತಿಬಂಧನೆಯಲ್ಲಿಯೂ ಇಡಲ್ಪಡಲಿಕ್ಕಿಲ್ಲ. ಈ ಪ್ರಕಾರ ಮಾಡುವದರಿಂದ ಪ್ಲೇಗಿನ ದೋಷಯುಕ್ತವಾದ ಭಾಗಗಳಲ್ಲಿ ಇದ್ದ ಜನರಿಗೆ ಕೆಳಗೆ ಬರದಂತೆ ಫಾಯಿದೆ ಗಳು ಆಗುವವು.

(೧) ಇವರಿಗೆ ಹೆಲ್ಥ ಕ್ಯಾಂಪಿನಲ್ಲಿ ೧೫ ದಿವಸ ಇರುವದರ ಬದಲಾಗಿ ೨–೩ ದಿವಸಗಳವರೆಗೆ ಅಂದರೆ ಮೇಲೆ ಬರದ ಪ್ರಕಾರ ಮನಿ ಮತ್ತು ಸಾಮಾನ ವಗೈರೆ ಸ್ವಚ್ಛ ಮಾಡಸಲಿಕ್ಕೆ ಅವಶ್ಯ ಇದ್ದ ವೇಳೆ ಮಾತ್ರ ಇರುವ ಪ್ರಸಂಗ ಬಿದ್ದೀತು.

(೨) ಸದರಿಯವರಿಗೆ ಹೆಲ್ಥ ಕ್ಯಾಂಪಿಗೆ ಹೋಗುವದರ ಬದಲಾಗಿ ಮತ್ತೆ ಯಾವದಾದರೂ ಎರಡನೇ ಸ್ಥಳಕ್ಕೆ ಹೋಗತಕ್ಕ ಅಪೇಕ್ಷೆಯುಂಟಾದರೆ ತಮ್ಮ ಸಾಮಾನ ವಗೈರೆ ಸ್ವಚ್ಛ ಮಾಡಲ್ಪಟ್ಟ ನಂತರ ಹೋಗಲಿಕ್ಕೆ ಪರವಾನೆ ಶಿಗ ಬಹುದು.

(೩) ಸದರಿ ಜನರಿಗೆ ವ್ಯಾಪಾರ ಮುಂತಾದ್ದಕ್ಕಾಗಿ ಹುಬ್ಬಳ್ಳಿ ಬಿಟ್ಟು ಎರಡನೇ ಠಿಕಾಣಿಗಳಿಗೆ ಹೋಗುವದರ ದಪಿಯಿಂದ ಪಾಸಗಳೂ ಲಾಗಲಚ್ಚ ದೊರೆಯುವವು.

(೪) ಮತ್ತು ಇವರಿಗೆ ಎರಡನೇ ಜಿಲ್ಲೆಗಳಲ್ಲಿ ಸಹ ಪ್ರತಿಬಂಧನೆಯಲ್ಲಿ ಇಡಲ್ಪಡುವ ಸಂಭವ ಕಮ್ಮಿ ಆಗಬಹುದು.

HUBLI,
28th April 1898.

B. H. F. LEUMANN,
Surgeon-Captain.

V. My intention was to inoculate a person, say, on the first of the month and re-inoculate him on some date between the 20th and 30th of that month, but owing to the people crowding up for inoculation in order to obtain certificates of having been inoculated twice and, thereby, exemption from being

Intention of method of inoculation.

turned out of their homes into the Health and Segregation Camps, I soon found it impossible to pursue my original plan, and many persons were thus re-inoculated far too quickly.

VI. Further, many persons who experienced only a slight reaction at the first inoculation have, while incubating the disease, presented themselves for and obtained their second inoculation, and have died within a few days afterwards of plague. This has been one of the factors whereby my comparative results between the once and twice-inoculated have been vitiated ; another, the extraordinary persistence with which persons already affected with plague have come of their own accord, or been brought up—in spite of all warning to the contrary—for a second inoculation and, by keeping well amongst the crowd of inoculation-seekers have, in some cases, actually managed to receive it. The more ignorant classes, moreover, have even been known to bathe their plague-stricken children in cold water outside my office compound or other place where I have been inoculating, in order to lower their temperatures and in the hope of inducing me to administer a second dose of the prophylactic. These various factors should be carefully considered in reading over this report which, conclusive as it is of the actual value of inoculation in protecting the individual, and even the community, would have shown even better results had the people co-operated with me in a more intelligent manner than they did.

And how it was partly vitiated by the stupidity of the people.

VII. At the outset of my inoculation work here, I adopted the ordinary dosage written or printed on the labels on the bottles of lymph supplied to us direct from Mr. Haffkine's Laboratory in Bombay : but I soon discovered that in many cases the reaction after such a dose was too slight and of too short a duration to be of any very great protection; and it is, indeed, largely amongst my earliest inoculated that many of the deaths, due to insufficient protection, have occurred, although many others—more recently inoculated with the weaker varieties of the "lymph"—have also succumbed to plague, some being attacked before the "inoculation fever" had passed off. The dosage of the prophylactic that I have employed has been rather greater than that stated on the bottles; and in those who have been twice-inoculated the full amount of this increased dosage has been given at each inoculation. Early in the epidemic I wrote to Mr. Haffkine saying that I did not consider the reaction, in many cases obtained by his dosage, was sufficient, and he very courteously replied that he would leave the matter in my hands entirely and allow me,—by observation of the reactions obtained,—to increase or decrease the dose of the different supplies forwarded me that I would give. Our method was to make control observations with certain bottles of the different supplies sent us on people in our segregation camp, whom we had under close surveillance, while the remaining bottles were used in the larger inoculation-meetings held in the town. Our conclusions are that, making full allowance for idiosyncracies and "personal equations" of the persons inoculated, "lymphs" of the same stated dosage, though of different brews, varied at times; and that this variance in the reactions obtained may possibly be due to alterations in the virulence of the cultures from which the different brews are prepared and possibly also to differences in the composition of the culture media used in their preparation. On the whole, I consider that the stronger the lymph the greater its protective power becomes; and, although weaker lymphs may sometimes produce greater evidences of local reaction than stronger ones, I attach far more importance to the general reaction, *e.g.*, fever, headache, malaise, &c., as affording the best indication of the protection obtained.

The dosage of Haffkine's prophylactic that I have adopted in Hubli.

The full amount given at each inoculation. No half-dosage ever employed in Hubli.

Variations in the reactions of lymph of the same stated dosage. Reasons suggested as possible causes for this result.

No half doses of the prophylactic have ever been given in Hubli : the dosage, with very few exceptions indeed, has always been increased, and a full dose given at each inoculation, allowance being duly made for age, sex, general physique, &c., where needed.

VIII. Inoculated persons holding certificates of double inoculation have, at my special wish and order, been left in their homes throughout this epidemic; only their clothes, house and property being disinfected on the occurrence of a plague case or death in their house. As the vast majority of plague cases have never been notified before death in Hubli (nor, in my experience of nearly two years, elsewhere if Native supervision be largely resorted to), it will readily be understood that the majority of the inoculated have actually been living in the same house, or even room, with a plague case (often of the pneumonic type, whose terrible power of spreading the disease was first shown by Professor Childe, I. M. S., of Bombay) during the whole of the time that case was living, probably attending on the patient, breathing the same stuffy air, and, perhaps, sharing the same blanket; and I attach at the end of this report a long series of cases where such conditions have occurred, the non-inoculated dying of plague and the inoculated escaping, almost to a man.

Method pursued with regard to inoculated persons living in infected areas.

Further, the inoculated have not been segregated as the uninoculated have been, but allowed to remain in their own quarter in the most infected areas, with what immunity as a result the figures quoted below will show.

IX. Various critics on my work, not knowing what the actual facts were and are, have at different times asserted that the inoculated inhabitants of Hubli left the town in larger numbers than the non-inoculated. This idea was not altogether unnatural since "passes by rail and road" were not granted to uninoculated persons, but is, nevertheless, wholly erroneous, for, as a census of Hubli was taken weekly, it was a comparatively easy matter to compare the number of inoculated and non-inoculated amongst its inhabitants at any stage of our operations, and by such a method alone we were able to show that exactly the reverse was the case. Further, the one great complaint all classes and castes of Natives raised against general measures was that, if not inoculated, they were turned out of their houses and sent to the different camps; hence the concessions granted to those who held inoculation certificates of having been twice inoculated induced large numbers to undergo the process in order to remain in their houses, and these—finding themselves practically immune and left alone, while their non-inoculated neighbours either died of plague or were segregated promptly on the occurrence of a plague death in their midst or a plague patient being found amongst them—had neither any wish to leave their homes, where they felt safe, nor, still more, to forsake their only means of livelihood by running away from the town. The British Officers on plague duty here and all the Divisional Superintendents invariably replied (officially and in writing when so required) that the non-inoculated had left Hubli in far greater numbers and proportion than the inoculated, and my own observations entirely bear out this statement. One Divisional Superintendent on the 22nd of August even affirmed in writing that, although a large number of the people in his area had been inoculated, not one of them had left Hubli!

The inoculated inhabitants of Hubli, in spite of the privileges allowed them to do so, did not leave the town in such large numbers as the non-inoculated.

X. As the most stringent orders have been issued by the Collector of Dhárwár, at various times, to prevent the inhabitants of Hubli, by their flight, infecting other towns and villages, the value of the fact that the inoculated who (being twice inoculated) are allowed to leave their homes, if they wish to, have not done so to any appreciable extent, but continue to live quietly in them, while most of the uninoculated have run away, panic-stricken, in utter disregard to all orders, cannot be overestimated.

The value of granting concessions to the inoculated, as compared with the flight of the non-inoculated.

XI. There is no doubt that the people of Hubli, who at first only came up for inoculation in order to escape segregation, &c., have now thoroughly learnt to appreciate its protective value, for they have presented themselves, by the hundred, at all times of the day before myself and others, for the purpose of being inoculated.

The people have thoroughly understood the actual protective value of inoculation.

XII. I attribute these results to the methods I have adopted in Hubli in order to gain the confidence of its inhabitants. When I began my inoculations, I operated first of all on some European or Native gentleman in front of a crowd of poor and low-caste people, whom I had gathered together in the worst-affected area, and they were thus soon induced to ask for inoculation themselves. As I handed each man his inoculation ticket, I impressed him with the idea that, being twice-inoculated, he was protected against plague for six months as far as it was possible for me to protect him, and further explained that he was exempted from certain plague rules which others, who were not inoculated, were obliged to undergo. Later on, when I collected a large crowd for inoculation, after inoculating about 90 per cent. of their number, I left the remainder to form a nucleus for a fresh start on the following day, and by this method I succeeded in always obtaining large numbers to work upon. Later, again, I caused notices to be printed in English and Kánarese and placarded all over the town, stating where and when I and my staff would inoculate, morning and evening: and since the earlier part of August such numbers have presented themselves at this office at inconvenient hours, that I have frequently been obliged to call upon the police to drive the people away.

The results obtained attributable to the methods pursued.

XIII. Since about the 10th of August people from the surrounding villages have come into Hubli for a few hours daily seeking inoculation. A separate record of inoculation has always been kept for persons who are not actual inhabitants of Hubli, so that neither these nor any other persons (*e.g.*, Sub-Assistant Surgeons from the Mysore or Madras side) have ever been included in our list of inoculations for Hubli itself.

The value of inoculation as a protective measure against plague influences villagers from far off to voluntarily seek it.

XIV. I have never experienced the slightest difficulty in inoculating Mussalmanis or any other purdáh women in Hubli. From the very start I did all I possibly could to induce the people to place confidence in my staff and myself and other inoculators here: and I would draw attention to the fact that the very men who, in March last, created a disturbance in Hubli were not only the first and the most willing to undergo inoculation, but also to bring their wives and families to my hospital or to invite me to their homes to inoculate them.

No difficulty in inoculating purdáh women in Hubli.

XV. I first started inoculation here on May 11th. Some 150 to 200 persons had been inoculated in the earlier part of this year by Surgeon-Major Collie, M.B., C.M., who was then Medical Officer on Plague Duty in Hubli. I have not included this number amongst our own inoculations, but have included the few of their number that have since died from plague in our "deaths amongst inoculated persons."

Date of my first inoculations in Hubli.

XVI. About one month and-a-half ago I found, on close investigation, that the number of deaths from plague, as recorded weekly amongst the once-inoculated previous to August 9th, was too low: nor had any proper account been taken of deaths other than plague in inoculated persons. This is a clerical error which has now been corrected, and I notified the fact in my report to Government, through the Collector of Dhárwár and the Surgeon-General, Bombay, for the week ending 30th August 1898.

An error in previous weekly reports corrected.

XVII. The system we have pursued in inoculation work in Hubli is this:—Before a person is inoculated his left arm is well swabbed over with 5 per cent. carbolic acid lotion; and our needles are carefully washed through and over with the same kind of lotion before and after each inoculation. The first injection is given into the loose subcutaneous tissue over the anterior part of the left upper arm just below the insertion of the Deltoid muscle: the second into the loose subcutaneous tissue over the Triceps muscle posteriorly, somwhat higher up than the former, in the same arm. By this means, only one

My system in inoculating and registering inoculees.

arm is temporarily placed *hors de combat*, a very great consideration, in my opinion, for those who have to work hard with their hands. At the first inoculation a ticket, bearing the number and private mark of the register-book, into which the name, age, sex, caste, birth-place, present residence, occupation, &c., of the person inoculated is entered, is handed to each individual. At the second inoculation this ticket is taken back from him and an inoculation certificate of "twice-inoculation," bearing our book and number marks, made out in its place which, after receiving my signature, is handed over to the applicant for it, provided that his description of himself as to name, age, sex, caste, occupation, &c., &c., tallies in every detail with that given at the first inoculation and entered in our register.

Method of granting inoculation certificates.

XVIII. For several months past, and before I came to Hubli,, a rule has been in force that every death, whether from plague or other causes, must be certified as to its actual cause by one of the two Government subordinates (Assistant Surgeon and Hospital Assistant), whose sole duty is the inspection of cases and corpses. In each instance they enquire and search for evidence of inoculation, and if no certificate or ticket be obtained, then they examine the left arm for traces (*e.g.*, nodes of thickened subcutaneous tissue) of previous inoculation. All statements concerning the case or corpse having been inoculated are at once carefully investigated. The names of all the inhabitants of Hubli were registered in a new census soon after my arrival ward by ward, street by street, and house by house, and any later change of residence has also been duly noted, so that there is and has been no real difficulty in at once identifying the vast majority (over 95 per cent.) of corpses. These registers have also been checked by Lieutenants Keelan and Thomas, on plague duty here, and the work of my own subordinate inspecting staff is thus counter-checked by these officers. If a certificate of twice-inoculation or a ticket of once-inoculation be obtained, it is at once taken possession of and filed in my office: besides this, all names are looked up in my inoculation registers. I consider this method to be as accurate as is possible, and no corpse can be burnt or buried without inspection by the subordinates I have appointed or—in the case of the Southern Marátha Railway Company's employés living within railway limits—by the two medical officers in the Southern Marátha Railway Company's service. The same method is pursued with regard to attacks from plague, and reference is at once made to our registers. We have been able to trace all cases and deaths from plague, amongst inoculated persons, that have come under our notice in this way, and I am strongly of the opinion that any which may not have been so noted do not number more than 5 per cent. of the whole.

Death registration and death-certificates. Method pursued in Hubli for finding out whether a person has been inoculated or not, before, when attacked by any disease or dying from any cause whatsoever.

XIX. The youngest person I have inoculated in Hubli was an infant aged 10 days only; and the oldest a woman whose age was stated as 96 and must have been, certainly, between 85 and 90. My experience is that children "stand" inoculation better than adults and can be given proportionately larger doses; women appear to exhibit severer local reactions than men—probably because their arms are more fatty,—but I have not observed much difference in the "general reaction" between the two sexes. I am inclined not to inoculate women if within their last three weeks of pregnancy—(although I have done so without ill effect)—in case the severity of the reaction after inoculation may be so great as to cause a miscarriage or premature birth; but I have inoculated several women who were quite seven months advanced in their pregnancy and, provided the woman's health be good, I see no reason why she should not receive a modified dosage.

Ages of youngest and oldest inoculees.

Children bear inoculation well.

Inoculation in pregnant women.

XX. An important question arises—"Should a person who may be incubating plague undergo inoculation?" My opinion, based on a large experience, is that although in the very early stages of a comparatively long incubation period

Inoculation in the incubation period of plague.

inoculation may benefit, yet in a short incubation period or in one which is well advanced it is far more likely to be harmful. Further, it must be remembered that it is impossible, before actual symptoms develop, to be in any way certain whether the incubation period will be long or short, even though a pretty accurate guess may be hazarded that a given person is actually in the incubation stage of plague. Much, moreover, depends on the virulence of the epidemic, the incubation period certainly appearing to be longer, for instance, when the strength of an epidemic is on the wane. Hence I consider it advisable never to inoculate a person if he be found suffering from "fever" of over 100° Fahr.,—more especially if he be an actual contact from a plague case or corpse—in case that "fever" might be indicative of incipient plague (*i.e.*, at the end of the incubation period of the disease or even slightly beyond this).

A rough rule for guidance when not to inoculate a person during a plague epidemic.

XXI. One peculiar fact which our inoculation results in Hubli exhibited was that not only were the inoculated protected from plague, but their general health was also better, as shown by their low death-rate "from other causes." I do not desire, however, to attach undue importance to this fact, for it is more than likely that while every inoculated person who died from plague was brought into immediate prominence by reason of the failure of the prophylactic to protect him, such searching enquiry was not, on the other hand, made when every non-inoculated person died from the same disease, and some deaths amongst this latter class—really due to plague, but exhibiting no external buboes or other signs and concerning whose illness no history was forthcoming—were wrongly attributed to "causes other than plague." Not only was everyone on the "qui vive" to point out any inoculated person who had subsequently died from plague (or any other cause), but also—in order to obtain the fullest truth and information in the matter—I encouraged everybody, high and low, European and Native, to bring all such cases to our notice at once. When once they have been induced to place reliance in a method Natives, in my experience, fly to extremes and imagine that method to be infallible: hence the fact that practically every case of non-protection against plague after inoculation was brought up by the friends and relations as if they had a grievance against the method for not being absolutely certain to protect each and every person inoculated.

Inoculation apparently protective against diseases other than plague.

People when they once believe in inoculation often imagine it to be infallible.

XXII. I have frequently noticed that Haffkine's inoculation benefits certain diseases or symptoms while it appears to aggravate others. For instance:—Eczema, especially of the pustular variety, frequently improves and sometimes disappears after inoculation. Lupus, on the other hand, in four cases that I noted, was greatly aggravated. I have also noticed that a troublesome cough, often lasting 4—5 weeks, has followed inoculation in persons of poor physique especially (who might be tubercular subjects?); and in a few cases of undoubted tubercle of the lungs I have noticed, besides an aggravation of the cough, an increase of hectic temperature and early morning sweats, occasionally lasting for weeks. All these people recovered completely, however: but I cannot help thinking that inoculation aggravated their condition temporarily. I have even been credited with having cured two cases of epilepsy in young men, who had been under treatment off and on for years, by inoculating them!

Inoculation seems to benefit pustular eczema,

but to aggravate lupus and tubercular diseases.

XXIII. I append below the weekly census of Hubli and the total number of persons (actual inhabitants of the town) inoculated up to the corresponding dates, together with the number of non-inoculated residents remaining. No census was taken between May 1st and June 14th, so that the census for May 1st is quoted as that for May 11th. This, though not strictly accurate, is undoubtedly in favour of the non-inoculated and against the inoculated:—

Statement showing the weekly census of Hubli and total number of its inhabitants inoculated up to corresponding dates.

Dates.	Census of Hubli.	Total number of inhabitants of Hubli inoculated up to dates corresponding with Census.
Five weeks. { From 11th May 1898... To 14th June 1898	Fell from 50,000 To 47,427	3,004
Week ending 21st June 1898	47,082	5,648
,, 28th June 1898	47,485	8,443
,, 5th July 1898	46,537	10,746
,, 12th July 1898	46,518	13,269
,, 19th July 1898	45,240	15,690
,, 26th July 1898	43,809	20,824
,, 2nd August 1898	43,707	22,727
,, 9th August 1898	42,768	27,837
,, 16th August 1898	40,441	31,273
,, 23rd August 1898	39,400	33,880
,, 30th August 1898	38,210	35,014
,, 6th September 1898	38,382	36,795
,, 13th September 1898 ...	38,408	37,392
,, 20th September 1898 ...	39,142	38,265
,, 27th September 1898 ...	39,315	38,806

XXIV. As a matter of fact the above figures are not quite representative, for no account has been taken of those inoculated persons who may have left the town. Allowing that the inoculated left Hubli week by week in the same proportion as the un-inoculated (see paragraph X) no favour in prejudice of the inoculated is made when the above correction is entered as follows :—

Corrected statement showing numbers of inoculated and non-inoculated present in Hubli on the dates corresponding with the census with plague deaths amongst them.

Dates.	Census of Hubli.	Number of non-inoculated inhabitants.	Number of inoculated inhabitants.	Plague deaths amongst the non-inoculated.	Plague deaths amongst the inoculated.
Five weeks. { From 11th May 1898. To 14th June 1898 .	Fell from 50,000 To 47,427.	44,573	2,854	47	1
Weeks ending 21st June 1898 ...	47,082	41,494	5,588	22	3
,, 28th June 1898 ...	47,485	39,042	8,443	29	1
,, 5th July 1898 ...	46,537	36,020	10,517	55	6
,, 12th July 1898 ...	46,518	33,255	13,263	34	6
,, 19th July 1898 ...	45,240	29,716	15,524	82	7

Dates.	Census of Hubli.	Number of non-inoculated inhabitants.	Number of inoculated inhabitants.	Plague deaths amongst the non-inoculated.	Plague deaths amongst the inoculated.
Week ending 26th July 1898 ...	43,809	24,112	19,697	100	15
,, 2nd August 1898...	43,707	21,031	22,676	140	16
,, 9th August 1898...	42,768	15,584	27,184	272	19
,, 16th August 1898 ...	40,441	10,685	29,756	386	61
,, 23rd August 1898...	39,400	6,367	33,033	371	41
,, 30th August 1898...	38,210	4,094	34,116	328	28
,, 6th September 1898	38,382	2,731	35,169	227	34
,, 13th September 1898	38,408	1,116	37,292	138	47
,, 20th September 1898	39,142	937	38,205	106	55
,, 27th September 1898	39,315	603	38,712	58	20

Plague death-rate per mille amongst non-inoculated and inoculated compared with a per cent. reduction table on total results calculated from the foregoing table.

25. Calculating the plague death-rate per mille on the above table, for the uninoculated and inoculated, we arrive at the following results, which become perhaps more striking and apparent when we regard them in the light of percentage reductions (Column a.)

Dates.	Plague death-rate—Comparison per mille between		a Percentage reduction of death-rate from Plague in favour of the inoculated.
	Non-inoculated.	Inoculated.	
Five weeks. { From 11th May 1898 ... ... To 14th June 1898	1·022	·350	Over 65 per cent.
Week ending 21st June 1898	·530	·527	About 1 ,,
,, 28th June 1898	·742	·118	Nearly 85 ,,
,, 5th July 1898	1·524	·570	About 63 ,,
,, 12th July 1898	1·022	·452	Nearly 56 ,,
,, 19th July 1898	2·793	·450	84 ,,
,, 26th July 1898	4·147	·761	82 ,,
,, 2nd August 1898	6·656	·705	89 ,,
,, 9th August 1898	17·325	·698	Over 96 ,,
,, 16th August 1898	33·694	2·083	94 ,,
,, 23rd August 1898	57·011	1·241	98 ,,
,, 30th August 1898	80·116	·820	98 ,,
,, 6th September 1898... ...	83·112	·958	99 ,,
,, 13th September 1898... ...	112·903	1·260	Over 99 ,,
,, 20th September 1898... ...	113·127	1·439	Over 99 ,,
,, 27th September 1898... ...	96·185	·517	Over 99 ,,

Similar comparison between the non-inoculated and those inoculated once only.

In the following two tables the comparison between the non-inoculated and once-inoculated and between the non-inoculated and twice-inoculated are considered separately, thus :—

Dates.	Number of non-inoculated in Hubli.	Number of once-inoculated in Hubli.	Deaths from Plague amongst		β Percentages in favour of	
			Non-inoculated.	Once-inoculated.	Non-inoculated.	Once-inoculated.
Five weeks { From 11th May 1898 ... To 14th June 1898 ...	44,573	2,323	47	*Nil.*	...	100 per cent.
Week ending 21st June 1898 ...	41,494	3,368	22	2	nearly 17 per cent.	.....
„ 28th June 1898 ...	39,042	4,487	29	1	...	70 per cent.
„ 5th July 1898 ...	36,020	5,057	55	3	...	64 „
„ 12th July 1898 ...	33,255	5,974	34	4	...	40 „
„ 19th June 1898 ...	29,716	6,565	82	1	...	96 „
„ 26th July 1898 ...	24,112	9,386	100	6	...	84 „
„ 2nd August 1898 ...	21,031	10,016	140	7	...	90 „
„ 9th August 1898 ...	15,584	11,339	272	5	...	95 „
„ 16th August 1898 ...	10,685	10,265	386	30	...	93 „
„ 23rd August 1898 ...	6,367	9,671	371	21	...	96 „
„ 30th August 1898 ...	4,094	7,569	328	8	...	86 „
„ 6th September 1898...	2,731	6,798	227	11	...	99 „
„ 13th September 1898.	1,116	6,381	143	7	...	99 „
„ 20th September 1898.	937	6,567	106	11	...	99 „
„ 7th September 1898.	603	6,820	58	4	...	90 „

Similar comparison between the non-inoculated and those inoculated twice.

In only one week, then, was there any percentage in favour of the un-inoculated, and so slight was it as to be practically ignored. A very similar result is also shown in the following table :—

Dates.	Number of non-inoculated in Hubli.	Number of twice-inoculated in Hubli.	Deaths from Plague amongst		γ Percentages in favour of	
			Non-inoculated.	Twice-inoculated.	Non-inoculated.	Twice-inoculated.
Five weeks { From 11th May 1898. To 14th June 1898 ...	44,573	531	47	1	44 per cent.	.....
Week ending 21st June 1898 ...	41,494	2,220	22	1	...	18 per cent.
„ 28th June 1898 ...	39,042	3,956	29	*Nil.*	...	100 „
„ 5th July 1898 ...	36,020	5,460	55	3	...	64 „
„ 12th July 1898 ...	33,255	7,289	34	2	...	72 „
„ 19th July 1898 ...	29,716	8,959	82	6	...	75 „

Dates.	Number of non-inoculated in Hubli.	Number of once-inoculated in Hubli.	Deaths from Plague amongst		Percentages in favour of	
			Non-inoculated.	Twice-inoculated.	Non-inoculated.	Twice-inoculated.
Week ending 26th July 1898 ...	24,112	10,311	100	9	...	80 per cent.
„ 2nd August 1898 ...	21,031	12,660	140	9	...	85 „
„ 9th August 1898 ...	15,584	15,845	272	14	...	95 „
„ 16th August 1898	10,685	19,491	386	31	...	96 „
„ 23rd August 1898 ...	6,367	23,362	371	20	...	Over 98 „
„ 30th August 1898 ...	4,094	26,547	328	20	...	96 „
„ 6th September 1898.	2,731	28,671	227	23	...	Over 99 „
„ 13th September 1898.	1,116	30,911	143	39	...	Over 99 „
„ 20th September 1898.	973	31,683	106	24	...	Over 99 „
„ 27th September 1898.	693	31,872	58	16	...	Over 99 „

If the three foregoing lists be compared, it will be found that the percentages given under the headings β and γ of the two latter list will, if added together, or subtracted from each other as occasion requires, give the percentages noted in column α.

Statement showing what the death-rate amongst the inoculated would have been had they died from plague in proportionate numbers to the uninoculated.

XXVI. From the foregoing tables the following is readily deduced :—

Dates.	The death-rate from Plague if the inoculated had died in proportionate numbers ought to have been.	Instead of as it actually was.
Five weeks from 11th May 1898 to 14th June 1898.	2	1
Week ending 21st June 1898	Remaining stationary at	3
„ „ 28th June 1898	5	1
„ „ 5th July 1898	15	6
„ „ 12th July 1898	13	6
„ „ 19th July 1898	42	8
„ „ 26th July 1898	79	15
„ „ 2nd August 1898	146	15
„ „ 9th August 1898	489	19
„ „ 16th August 1898	1,102	61
„ „ 23rd August 1898	2,040	41
„ „ 30th August 1898	2,624	28
„ „ 6th September 1898	3,151	34
„ „ 13th September 1898	4,968	47
„ „ 20th September 1898	4,122	55
„ „ 27th September 1898	3,703	20

We thus see, perhaps more conclusively than in any other way, what the protective value of inoculation has been throughout this epidemic.

Comparison between the once and twice-inoculated.

XXVII. I append below a table comparing the results between those inoculated once and twice, with a percentage list in favour of each :—

Dates.	Number of inhabitants of Hubli inoculated once.	Number of inhabitants of Hubli inoculated twice.	Plague deaths amongst the once-inoculated.	Plague deaths amongst the twice-inoculated.	Comparison of totals between once-inoculated and twice-inoculated.		Percentage in favour of those inoculated once, twice.	
Five weeks from 11th May 1898 to 14th June 1898...	2,323	531	Nil.	1	Nil.	·0018	100%	...
Week ending 21st June 1898	3,368	2,220	2	1	·0006	·0004	...	33%
,, 28th June 1898	4,487	3,956	1	Nil.	·0002	Nil.	...	100%
,, 5th July 1898	5,057	5,420	3	3	·0009	·0009	practically equal	
,, 12th July 1898	5,974	7,289	4	2	·0006	·0002	...	66%
,, 19th July 1898	6,565	8,959	1	6	·0001	·0006	80%	...
,, 26th July 1898	9,386	10,311	6	9	·0006	·0008	25%	...
,, 2nd August 1898	10,016	12,660	7	9	·0006	·0007	14%	...
,, 9th August 1898	11,339	15,845	5	14	·0004	·0008	50%	...
,, 16th August 1898	10,265	19,491	30	31	·0028	·0015	...	45
,, 23rd August 1898	9,671	23,362	21	20	·0021	·0008	...	61
,, 30th August 1898	7,569	26,547	8	20	·0010	·0007	...	30
,, 6th September 1898 ...	6,798	28,671	11	23	·0015	·0007	...	50
,, 13th September 1898 ...	6,381	30,911	7	19	·0011	·0006	...	45
,, 20th September 1898 ...	6,567	31,638	11	24	·0016	·0007	...	54
,, 27th September 1898 ...	6,820	31,872	4	16	·0006	·0005	...	16

The total result of twice-inoculation as compared with once-inoculation is 10 per cent. in favour of the former, from Hubli experiences, but ought to be greater.

Now, if we ignore those weeks in which there was "practically no comparison," because there were no actual figures to compare, and the week in which the percentages are "practically equal," we shall—if we add up the totals separately—arrive at 159 as the total for 4 weeks, as the total of the once-inoculated, and 400 as the total for 9 weeks, of the twice-inoculated. Dividing each total by its respective number of weeks, we get nearly 40 and over 44 as representative ratio numbers, for the once-inoculated and twice-inoculated, respectively, or, as calculated by percentages, of 90 to 100. That is to say, the twice-inoculated show a record just over 10 per cent. better than the once-inoculated. This appears rather low, but I have already explained in paragraph VI how it has been brought about by the stupidity of the people themselves. I consider that it ought to have been 18—20 per cent. instead of 10 per cent. as it stands.

Protection by inoculation amongst the employés of the Southern Mahrátta Spinning Company.

XXVIII. In the Southern Mahrátta Spinning Company's Mill a series of experiments in inoculation were carried out at the express wish of the Manager, Mr. Narayenrao, who has kept careful records of all the inoculations done, and carefully checked out results. On the 21st of June there were 1,173 mill hands on the muster-roll. Of these, 1,040 have since been twice-inoculated, with a death-rate from plague of 22 altogether, or 2·11 per cent.; 58 have been inoculated once only and show a plague death-rate of 13·79 per cent. (8 altogether): while the remaining 75 who refused inoculation have lost 20 out of their number from plague, or a percentage of 26·6. If the twice-inoculated had died in the same proportion as the uninoculated from plague, their total number of deaths would have been 286 instead of 22; and, similarly, the once-inoculated would have had a plague death roll of 16 instead

of 8. Every inducement was, however, held out by this public-spirited gentleman to induce his employés to avail themselves of the full benefits of inoculation, which accounts for the numbers of those inoculated once only being so low.

Short sketch of the work done in Hubli.

XXIX.—From the above records it will be seen that, between May 11th and August 23rd, 33,880 inhabitants of Hubli were inoculated. Of this number, 24,138 were inoculated twice and 9,742 once, giving a total number of inoculations performed = 58,018 in fifteen weeks, or an average of over 550 inoculations per day! [I have purposely chosen this date in August to close my list, because since then there has been some falling off in the number of inoculations done amongst the actual inhabitants of Hubli, for the simple reason that there were fewer and fewer, as time passed on, to inoculate. On the other hand, the number of people from outside villages who have come into Hubli, seeking inoculation, has very largely increased since the middle of August, some 1,200 having come in for that purpose even previous to that time. None of these "outsiders" have ever been counted amongst our "Hubli inoculations." Their total represents some 5,000 odd, of whom quite half have been inoculated twice; that is to say, an extra total of 7,500 inoculations has been performed in Hubli but cannot be counted in our returns as these inoculations were not amongst actual inhabitants of this town.] Of these 58,000 odd inoculations, the staff on plague duty have done over 37,000, my own numbering 22,000, my Assistant Surgeon's (Mr. Mascarenhas, L.M. & S., Bombay,) nearly 12,000; and those of Dr. Winter, who joined us at the beginning of July, some 3,000 odd. Of the remainder Assistant Surgeon Cardoz, in charge Hubli Dispensary, performed over 17,000; and the three Medical Officers on plague duty for the Southern Mahrátta Railway Company, and Dr. Braganza, a practitioner in the town, some 4,000 amongst them.*

This amount of inoculation work in addition to one large hospital (and since August 10th, two) to look after, with an average of over 100 patients, an observation camp of 200 odd persons; a segregation camp of 250; and a Health Camp often containing 700 to 1,000; the enormous amount of clerical work that inoculation entails, and also plague operations generally; the supervision of disinfection and railway inspection; the inspection of cases and granting of all certificates of death in the town; the registers and accounts of all the hospitals and camps (general or private, *i.e.*, caste); the never-ending disputes and complaints that have to be enquired into and settled,—all this will, I trust, afford the impartial observer of the amount of work Dr. Winter and myself, assisted by two Assistant Surgeons (since the end of August, three) and six Hospital Assistants supplied by Government, with two clerks (of little value) and a compounder supplied by the Hubli Municipality, have had to cope with and actually done.

Short discussion on and comparison between Inoculation and Sanitation with regard to plague in India.

XXX. From an experience of nearly two years on plague duty it may, perhaps, not be out of place if I here state my opinion on the value and position of Mr. Haffkine's preventative inoculation.

At the outset I would remark that had I been able in Hubli to adopt those sanitary and hygienic measures I wished to adopt, although I certainly should have undertaken inoculation work in addition, I do not think I should have had to do so much of it. But with so few police (and those none too good) to help one, an inadequate British Staff, with so much reliance placed in Native Superintendents and Supervisors, and a Municipality so bankrupt that it could not apparently afford to buy enough blankets out of its own funds for the patients in the Plague Hospitals, the work of segregation, house-to-house inspection, &c., became, from a medical point of view, absurdly insufficient; and despite the fact that strenuous efforts were always made to adopt such sanitary measures as will, I fancy, be regarded as distinctly efficacious, if properly carried out, yet, for want of staff and money (that greatest of all considerations), I was not only willing but actually compelled, by my duty and desire to save life, to undertake preventive measures at first on the scale of the individual, since I

* The total number of inoculations performed in Hubli, both on actual inhabitants and on people from outside, *e.g.*, villages, between May 11th and September 27th, amounts to some 78,000 altogether.

was not able to fully adopt them on the larger scale, namely, of the community; and although our inoculation record shows that we have now applied this measure to the community at large by inoculating a whole townful of people (the majority of them twice), yet it must be owned that we have been somewhat fortunate in our experiences here, and that preventative inoculation applied to other places, *e.g.*, other infected towns and districts *may* possibly prove to be a somewhat different matter.

While paying the highest tribute to the value of Mr. Haffkine's inoculation method which I claim, here in Hubli, to have put to, perhaps, the severest test to which it has yet been subjected, I am of the opinion that individual protection is, on however great a scale conducted, of less importance to that of general protection by sanitation and hygiene (considering each method separately, that is to say), for it seems to me more radical, if not more rational, to eradicate a disease than to leave it to pursue its course and only protect people against its ravages. But I see no reason whatever why the two methods should not be utilized together; and, as there appear to be various difficulties regarding the proper application of sanitary measures, to allow inoculation its fullest scope. I have endeavoured to compare these two methods by contrasting them in tubular form below, and my opinion is that, while neither can, apparently, be carried to perfection, *per se*, in India, both may with the greatest utility be judiciously combined.

CONTRAST AND COMPARISON BETWEEN

Inoculation.	*Sanitary and Hygienic measures.*
(i). Protection of the individual inoculated and later, as inoculation proceeds, of the community. Indirect protection of the un-inoculated.	(i). Protection of the community generally (presuming them to be un-inoculated) throughout.
(ii). No measures to destroy the bacilli in infected houses, fomites, &c., and in this way check the spread of the disease.	(ii). The bacilli destroyed in infected houses by heat, chemical disinfection, ventilation, &c.
(iii). No measure to remove the sick from the healthy and thus prevent contagion or infection of healthy non-inoculated.	(iii). Removal of the sick and, thus, prevention of areas and persons becoming infected by actual contagion or otherwise.
(iv). No separation of the healthy un-inoculated from the sick.	(iv). Separation of the healthy from the sick.
(v). Protection against one particular disease, and possibly against certain others, (contagious and infective).	(v). Protection against infective diseases generally.
(vi). Liability of re-infection of house or area, &c., comparatively unimportant (for some months) to the inoculated.	(vi). Liability of re-infection of house, &c., most important (by reason of its danger) to the un-inoculated; but capable (though difficult) of prevention.

It is with no attempt—far less still a wish—to under-value such brilliant work and so useful to mankind as Haffkine's preventative inoculation against plague undoubtedly is, that I compare the measure with sanitation and general hygiene. Just as Nature's own "disinfectors," sun-light and air (wind), alone appear to prevent outbreaks of various diseases, borne and spread through mal-ventilation, squalor and overcrowding, from occurring in every town or village one visits in India, so it may be suggested that "natural" methods, *e.g.*, ventilation, cleanliness, and freedom of space, combined with such hygienic measures as isolation of the sick and segregation of the healthy, and disinfection (by heat and chemicals)—should be resorted to as a first line of defence and attack with regard to plague, individual protection by inoculation forming a most useful second line. Such, indeed, appears to me an ideal plan of campaign with regard to a disease like plague; but owing to the apparent dislike of the native to real cleanliness and ventilation, and difficulties in getting staff and funds to obtain and maintain efficient segregation and isolation, inoculation must, of necessity, come more prominently to the front.

From a very large experience I am convinced that early notification of cases is the first and most essential factor in dealing with epidemic disease; and I consider it equally important to remove a case of plague early from an overcrowded house (there appear to be few native houses that are not) in order that the other inmates may not acquire contagion should the case assume some grave



was not able to fully adopt them on the larger scale, namely, of the communit



aspect by which it may spread the disease; as, for instance, when from the lungs of a Primary Plague Pneumonia, myriads of pest bacilli are coughed up by the patient (who invariably dies) and deposited broadcast on the floor and walls of his room, the bedding he lies on, and very largely into the palms of sympathetic friends or relations held out to the sufferer like so many spittoons, whence they are often directly transferred to their clothes and in this way handed round the area, village, or town in which they live; or when the bacilli are passed in greater or lesser hæmorrhages from the alimentary, respiratory, or genito-urinary tracts, in certain fatal forms of plague.

Unfortunately, the average Native, educated or not, appears to have the very greatest aversion to notifying any case of sickness—plague or other—and hence, in my opinion, it becomes more necessary than ever to protect the people by inoculation since they will not help to protect themselves by the foremost and simplest of sanitary and hygienic measures.

Short review of criticisms and objections.

XXXI. At various times during my inoculation work in Hubli, different objections against the methods pursued have been raised by friends—and critics generally—, and even in my own mind. I have always investigated the questions as soon as they were offered, and although I have never found one solid objection—after full and minute enquiry—to remain, yet it may be of some advantage to consider their main points here. Before doing so, however, I would again state that given proper notification of disease, sufficient money and staff, competent work-people (*e.g.*, disinfection coolies, &c.), and a population which shows antipathy neither to revelation of cases nor to general sanitary measures, *then* inoculation occupies a very limited position in the prevention of plague. But I have never met with such conditions in India, or conditions approximating thereto; and hence it appears to me that inoculation arranges itself by the protection it affords in the foremost rank of methods for dealing with this disease.

(α) It has been urged that those who received inoculation were of a class or classes better protected than others against plague by reason of their habits, the food they eat, the houses they live in, &c. In reply, I unhesitatingly state that if there be but one town in India, where that line of argument will not hold good, it certainly is Hubli; for not only were the poorer, dirtier, lower caste people the first to be persuaded to receive inoculation, but I made it my personal and special duty to work amongst them. Besides, Hubli is, I believe, the only town not only with such a large number of inoculations done, but also with by far the greatest proportionate number of inoculated to un-inoculated in its population; and again (I speak guardedly but believe I am correct) it is so far the only town in which inoculation has been largely resorted to at the *beginning* of an epidemic of plague. The Brahmins are, perhaps, of all castes, supposed to be the most cleanly in their houses, habits, &c., yet the Brahmins of Hubli (who at first, imagining themselves immune, were the foremost and greatest perverters of the truth concerning its efficacy and the last to apply for the protection inoculation affords) simply inundated the various inoculation "centres" as soon as plague began to spread in their midst, clamouring for the very method of which they had only lately tried to prevent others from availing themselves.

My first few thousand inoculations were almost entirely amongst the lowest and poorest of the people as I have already stated: but even letting that, most important, affirmation pass unheeded, the fact that by now practically the whole town (over 95 per cent.) has been inoculated refutes all argument concerning class or caste protection, since the disease attacked all classes and castes and all castes and classes have been inoculated.

(β) Another objection raised, and one which presented itself to my mind also, was this:—"Had I, by granting certain concessions allowing inoculated persons to remain in their houses, indirectly caused them to be the means of spreading plague?" Before answering this question I must draw attention to the fact that not more than about 20 per cent. of plague cases in Hubli have ever been reported as such before death. This, in my opinion, is only what is to be expected when practically the whole work of finding such cases is entrusted

to the inhabitants of a native town themselves; but whatever be the cause for this non-report of attacks before death, it must be remembered that the actual plague deaths in Hubli between the inoculated and non-inoculated have averaged 85 per cent. in favour of the former. Supposing, then, that 100 persons die of plague in this town—unreported as cases before death—we find that 85 of them have not, while 15 have been inoculated; or, in other words, there have been nearly six non-inoculated to one inoculated household capable of spreading plague during the times these persons have been sick of the disease. Even allowing that the un-inoculated have been segregated, and the inoculated allowed, after disinfection of their kit, person and houses, to remain in their homes, if the un-inoculated contacts of such cases be not discovered before these cases die, they are not only quite as liable and capable to spread plague as the inoculated contacts are, but far more likely to do so since their number is nearly six times as great and equally more likely to contract the disease. Further, the removal of the un-inoculated to the segregation and other camps, after a *death* from plague has occurred in their midst, is of no greater protection to the rest of the community than leaving inoculated, protected persons, after disinfection of their persons and kit, in a disinfected house or area.

A corollary to the above objection was found in the fact that certain non-inoculated, neither actual contacts of plague cases, nor living in contact houses but in the infected area of such cases or deaths, have been sent to the Health Camp; and it was affirmed that these people could not convey infection, though inoculated people might. Now, as a matter of fact, our health camp people were allowed to go into the town, to their homes to work, during the day, and there was absolutely nothing to prevent them visiting friends and relations sick with plague if they wished to. Even supposing that the inoculated might be more likely to become conveyers of plague by remaining in infected areas during the night, it would seem that the houses themselves appear to be the actually infected spots, and, to any one entering them, it will at once become evident that little or no difference can exist between the day and night in such places. Fomites certainly do, in my opinion, play a part in the spread of plague, but to nothing like the extent of contamination or infection of a locality or contagion from person to person (in such insanitary places); so that I do not agree with the supposition just mentioned, more especially as all possible care was taken, equally with the inoculated as with the un-inoculated, over the disinfection of their clothes and kit. Waving aside other minor and almost absurd considerations which have been suggested by all sorts of people, I feel sure that the inoculated could not (even had they tried) have been the means of spreading the disease to anything like the extent the un-inoculated actually did, since the number of attacks and deaths from plague amongst them were 85 per cent. fewer.

(γ) It has been alleged that the inoculees may have given false names to those registering them at their first inoculation, in order to eventually obtain a certificate to give or sell to others not inoculated: but I hardly think it likely that anyone would undergo the pain and inconvenience of inoculation for such a purpose; or having done so once (for himself) would care to repeat the experiment in order to obtain a certificate (for some one else): further, as by so doing he personally would not benefit by his act (for the certificate—if he gave a false name would be made out for and given to the person answering to that name and description—see paragraph XVIII), it is difficult to understand why he should do such a thing at all. Nor, for the same reasons, would any one be at all likely to exchange the ticket of first inoculation or sell it. Still, granting all these objections, and supposing them to be accurate, such non-inoculated persons on suffering or dying from plague would be counted on our registers as inoculated people who had been attacked by or had died from plague. This would really mean that our results are better than we have recorded them to be, and we know they have averaged—on the whole epidemic—about 85 per cent. in favour of inoculation already.

(δ) Some critics of our work have even suggested that certificates of inoculation may have been obtained by non-inoculated persons through collusion with the inoculators. Having myself inoculated more people in Hubli than anyone

else, I hardly consider such criticisim courteous; and as I extend my remarks to refer to my staff and the other medical men who had kindly lent their aid, this objection may, I trust, be dismissed without further comment.

(ε) I have frequently been asked how we were able to tell—in the case of unclaimed dead bodies—whether they had been inoculated or not. I have already explained our method of procedure in such instances in paragraph XIX; but would here add that, failing to find any trace or record of inoculation on the corpse, we cannot decide, and would ourselves become enquirers as to how a decision can be arrived at. It must be noted, however, that, taking everything into consideration, not more than 5 per cent. of the total plague deaths have come under this category, and in some of these cases information regarding their having been inoculated has been accepted and recorded by us as actual fact, although we ourselves could arrive at no definite opinion on the subject.

Throughout this epidemic encouragement have been given to everyone to do all he could to show that any person, who had previously been inoculated, had since died of plague; and it is more than probable that very few, if any, such instances escaped the notice of the many persons who disbelieved in inoculation, as the greatest interest and comment is at once excited when any inoculated person contracts plague or dies from it, and the attention of everybody is at once drawn to each such case as if it were (as it really is, though from a different point of view) of the highest importance; for people are very apt to imagine that because inoculation is stated to be protective that, therefore, it must invariably and infallibly be so, and triumphantly publish each case of failure as it occurs. Now, nothing could be more favourable from the inoculator's point of view, for it becomes an easier matter than ever to balance the few failures against the enormous number of successes inoculation is naturally expected as bound to achieve and actually does obtain.

XXXII. I append a list in which the results of protection by inoculation of certain members of a household—the non-inoculated members dying from plague—are shown side by side, for comparison. Each and every instance has been verified within the past three weeks.

XXXIII. I further append three charts—which will also form part of my general report "On Plague Operations in Hubli"—to follow later.

Chart I shows the total death-rate from all causes, the plague attack-rate, and plague death-rate.

Chart II shows, in form of columns, the plague attack and death-rate, amongst the inoculated and un-inoculated, the total plague death-rate, and the total admission-rate into the different Plague Hospitals.

Chart III shows, in column form, the attack-rate from plague and the admission-rate into the Plague Hospital.

Chart I is on a daily scale: Charts II and III on a weekly scale.

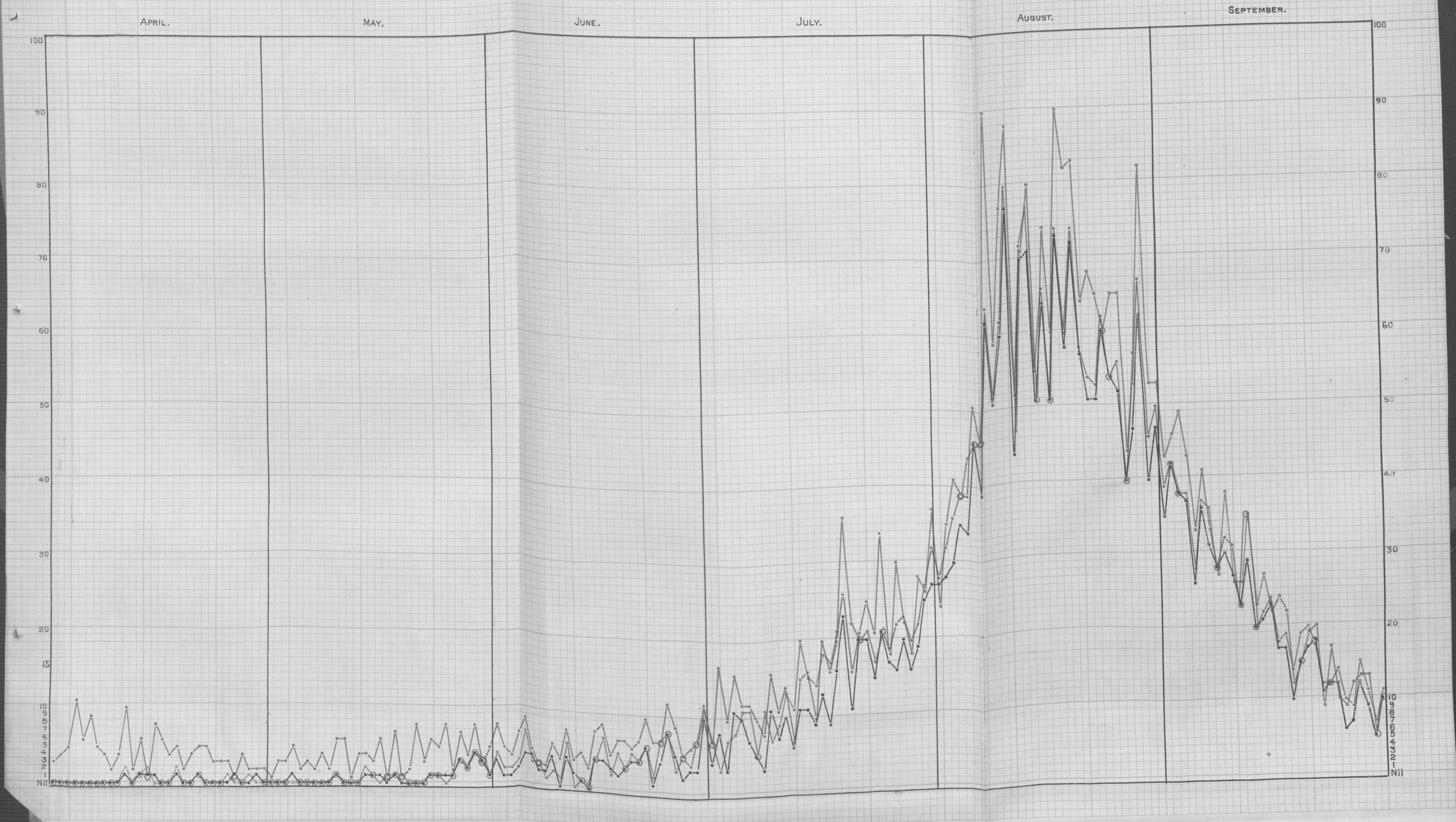
The asterisk (at the upper part of the page) on Chart II marks the date on which our former restrictions and rules as to the burial of plague corpses were largely cancelled, and I consider that the spread of plague amongst the un-inoculated largely followed this event—(our staff being too few to deal with the work in the city at a pace equal with the disease),—but was chiefly due to the non-report of plague cases before death. The total admissions into the hospital (Chart III) were always far below the actual attack-rate; and of these admissions about 15 per cent. were voluntary (towards the end of the epidemic especially), over 50 per cent. were sent up by the two British Officers and four British Inspectors, while ten Native Superintendents and 120 Supervisors managed to send up the remainder.

H. F. LEUMANN, M.B., D.PH.,
Surgeon-Captain, I. M. S.,
in charge Plague Operations, Hubli.

Plague Hospital, Hubli, 1st October 1898.

B 1555—6

Chart No. I.



Black = Plague Death-rate.
Red = Plague Attack-rate.
Blue = Total Mortality.

B.H.F. LEUMANN, Surg. Capt. I.M.S.
Hubli, 1-10-98

Drawn & Litho: Govt Photozinco: Office, Poona 1899.

Chart № II.

30-3-98 to 5-4-98	Week ending 12-4-98	Ditto 19-4-98	Ditto 26-4-98	Ditto 3-5-98	Ditto 10-5-98	Ditto 17-5-98	Ditto 24-5-98	Ditto 31-5-98	Ditto 7-6-98	Ditto 14-6-98	Ditto 21-6-98	Ditto 28-6-98	Ditto 5-7-98	Ditto 12-7-98	Ditto 19-7-98	D 26-

52000 — 520
48000 — 480
44000 — 440
40000 — 400
36000 — 360
32000 — 320
28000 — 280
24000 — 240
20000 — 200
16000 — 160
12000 — 120
8000 — 80
4000 — 40
36
32
28
24
20
16
12
8
4
Nil

The black dotted line shews the census of Hubli (Read by the outer row of figures, 52000 etc).
The red dotted line shews the actual numbers of inoculated persons in Hubli on the same given dates (Read similarly).

The green columns represent the attack-rate of Plagu
as the census etc, and is shewn solid, the proportio
The violet columns represent the same, in the same m
The black columns in their solid shaded parts = tot

Drawn & Litho: Gov^t Photozinco: Office, Poona 1899.



...amongst the uninoculated inhabitants of Hubli on the same given weekly dates
...death-rate being indicated by the vertical striped part.
...er, amongst the inoculated
...ttack-rate from Plague: while the horizontal stripes = total weekly admissions into Hospital.

B. H. F. LEUMANN, Surg. Capt. I. M. S.
Hubli, 1-10-98.

WEEK ENDING

5-4-98 | 12-4-98 | 19-4-98 | 26-4-98 | 3-5-98 | 10-5-98 | 17-5-98 | 24-5-98 | 31-5-98 | 7-6-98 | 14-6-98 | 21-6-98 | 28-6-98 | 5-7-98 | 12-7-98 | 19-7-98 | 26-7-98 | 2-8-98 | 9-8-98 | 16-8-98 | 23-8-98 | 30-8-98 | 6-9-98 | 13-9-98 | 20-9-98 | 27-9-98

500 480 460 440 420 400 380 360 340 320 300 280 260 240 220 200 180 160 140 120 100 80 60 40 20

100 96 92 88 84 80 76 72 68 64 60 56 52 48 44 40 36 32 28 24 20 16 12 8 4 NIL

Drawn & Litho. Govt. Photozinco. Office, Poona 1899.

The Red columns = weekly Plague attack rate.
The Violet columns = weekly admissions into all the Plague Hospitals

June

APPENDIX TO REPORT ON INOCULATION AGAINST PLAGUE IN HUBLI, 1898.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset of disease, symptoms, issue.
House No. 744. Ward No. 3. Division No. I.	(1) Madarsab Husseinsab, M., 25, 17th May 1898. (2) Imambu Madarsab, F., 26, 21st and 25th June 1898. (3) Sikander Madarsab, 4, 21st and 24th June 1898. (4) Fatima Madarsab, F., 1, 21st and 24th June 1898. (5) Ashabi Mahomedsab, 25, 21st and 24th June 1898.	(1) Mahomedsab Husseinsab, M., 27.
.....	(1) Madarsab Husseinsab, M., 25, died of Plague, 22nd June 1898.	(1) Mahomedsab Husseinsab, died of Plague on 22nd June 1898.
House No. 717. Ward No. 3. Division No. I.	(1) W. Netto, M., 20, 14th and 17th June 1898. (2) B. Netto, M. 18, 14th and 17th June 1898. (3) Miss K. Netto, 14, F., 14th and 17th June 1898. (4) J. C. Netto, M., 25, 16th and 21st June 1898.	(1) Escolastica Netto, F., 46.
.....	.....	(1) Died of Plague on 24th June 1898.
House No. 745. Division I.	(1) Hallimbo Abdulsab, F., 25, 17th and 23rd June 1898. (2) Kulsuma Allisab, F., 25, 17th and 23rd June 1898. (3) Gorima Badesab, F., 15, 17th and 23rd June 1898. (4) Budansab Imamsab, M., 18, 17th and 20th June 1898. (5) Jainabi Kassimsab, F., 4, 17th and 23rd June 1898.	(1) Imamsab Hassansab, M., 21. (2) Shobuma Hassinsab, F., 10.
.....	.....	(1) Died of Plague on 25th June 1898.
.....	.....	(2) Died of Plague on 26th June 1898.
House No. 498. Ward No. 2. Division No. I.	(1) Mohdinsab Pirmahomed, M., 65, 5th and 19th June 1898. (2) Ajibu Mohdinsab, F., 22, 5th and 19th June 1898. (3) Kassimsab Mohdinsab, M., 8, 5th and 10th June 1898. (4) Abraham Mohdinsab, M., 35, 17th and 20th May 1898. (5) Husenbu Hyasab, F., 30, 5th and 19th June 1898.	(1) Ibram Husseinsab, M., 22. (2) Umarsab, M., 15. (3) Fatmabi, F., 32. (4) Khadirsab, M., 40. (5) Taj Mahomed, M., 10.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	Names, sexes and ages of the *uninoculated* persons who were living in the same house on the date of attack. Name, sex, age of the attacked, if he is amongst the *uninoculated*; date of onset of disease, symptoms, issue.
House No. 498. Ward No. 2. Division No. I.	(6) Khatijabu Kassankhan, F., 40, 5th and 19th June 1898. (7) Ismaelsab Mahomedsab, M., 45, 5th and 10th June 1898. (8) Mahabub Kassim, F., 7, 5th and 19th June 1898. (9) Mahomedji Hyatsab M. 8, 5th and 10th June 1898. (10) Asuma Mohdin Chowdry, F., 10, 5th and 10th June 1898. (11) Husensab Umarji, M., 50, 5th and 10th June 1898. (12) Hazratsab Husensab, M., 9, 5th and 19th June 1898. (13) Pir Ahmed Mohdin, M., 28, 4th and 28th June 1898. (14) Mahomed Mohdinsab, M., 25, 5th and 10th June 1898. (15) Hasnama Pirahmed, F., 10, 5th and 19th June 1898. (16) Imambu Hyasab, F., 14, 5th and 19th June 1898. (17) Nanima Husensab, F., 18, 5th and 19th June 1898. (18) Gangawa Mahomedsab, F., 16, 5th and 19th June 1898. (19) Gansusab Ibrahimsab, M., 6, 5th and 10th June 1898. (20) Jorama Ibrahimsab, F., 25, 5th and 19th June 1898.	(1) Died of Plague on 27th June 1898.
House No. 6745. Ward No. 27. Division VI.	(1) Rago Fakirapa, M., 30, 21st and 28th June 1898.	(1) Yemnabai Rajba, F., 27.
.....	.....	(1) Died of Plague on 2nd July 1898.
House No. 1488. Ward No. Division II.	(1) Shetewa Fakira, F., 30, 13th and 16th June 1898. (2) Pareshya Fakirapa, M., 25, 13th and 16th June 1898. (3) Fakira Ningapa, M., 50, 13th and 16th June 1898.	(1) Hanimi Shetawa, F. 25.
.....	.....	(1) Died of Plgue on 4th July 1898.
	(3) Fakira Ningapa, died of Plague on 21st July 1898.	
House No. 1369. Ward No. 5. Division I.	(1) Savatriwa Gursidapa, F., 40, 4th and 29th June 1898. (2) Tipanna Gursidapa, M., 27, 18th May 1898 and 2nd June 1898. (3) Gursidapa Tipana, M., 2, 8th and 12th July 1898.	(1) Nagawa Tipanna, F., 30.
.....	.....	(1) Died of Plague on 5th July 1898.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	Names, sexes sand 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 *un-inoculated*; date of onset of disease, symptoms, issue.
House No. 6495. Ward No. 27. Division VI.	(1) Fakirapa Irbadrapa, M., 36, 27th and 30th June 1898. (2) Gangawa Fakirapa, F., 6, 27th and 30th June 1898. (3) Fakirapa Bassapa, M., 28, 27th and 30th June 1898. (4) Fakirawa Fakirapa, F., 26, 27th June 1898 and 2nd July 1898. (5) Kirtawa Bassapa, F., 45, 27th June 1898 and 2nd July 1898. (6) Shankapa Bassapa, M., 30, 6th and 9th July 1898.	(1) Irawa Fakirapa, F., 31.
.....	.....	(1) Died of Plague on 5th July 1898.
House No. 1240. Ward No. 5. Division I.	(1) Ningapa Balapa, M., 10, no pass ... (2) Kenchawa Yellapa, F., 50, 20th and 22nd July 1898.	(1) Nagawa Ballapa, F., 35.
.....	.....	(1) Died of Plague on 6th July 1898.
House No. 924. Division I.	(1) Parwati Daji, M., 5th and 13th June 1898. (2) Gungu , F., 7, 5th and 13th June 1898. (3) Sukia , F., 3, 5th and 13th June 1898. (4) Arjun , M., 9, 5th and 13th June 1898. (5) Daji Govind, M., 40, 10th and 13th June 1898. (6) Byabi Gangaram, F., 25, 5th and 10th June 1898. (7) Krishna Gopal, M., 15, 10th and 13th June 1898. (8) Sukoma Govind, F., 25, 5th and 13th June 1898. (9) Govind Sivaji, M., 38, 10th and 13th June 1898. (10) Mahadev Arjun, M., 30, 10th and 13th June 1898. (11) Mahadev Gunput, M., 25, 7th and 13th June 1898. (12) Kasibai Gunputrao, F., 40, 5th and 10th June 1898. (13) Waman Gunput, M., 20, 5th and 10th June 1898. (14) Kallapa Krishnapa, M., 20, 5th and 10th June 1898. (15) Hari Gopal, M., 18, 6th and 13th June 1898. (16) Bhoma Krishnaji, M., 4, 5th and 13th June 1898. (17) Gowrama Krishnaya, F., 3, 5th and 13th June 1898. (18) Krishnaya Narsaya, M., 28, 17th and 20th July 1898. (19) Pandurang Narsaya, M., 30, 14th June 1898 and 10th July 1898. (20) Junabai Krishnaya, F., 20, 17th and 20th July 1898. (21) Gangaram Balloo, M., 25, 8th and 10th July 1898.	(1) Tanubai, died of Plague on 10th July 1898.

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. Name, sex, age of the attacked, if he is amongst the *inoculated* ; date of onset of disease, symptoms, issue.	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 *un-inoculated* ; date of onset of disease, symptoms, issue.
House No. 924. Division I.	(22) Dhunduma Gangaram, F., 2, 11th and 14th July 1898. (23) Rauji Govindapa, M., 25, 8th and 11th July 1898.	
Miss Omond's. Out-houses.	(1) Laximi Mumapa, F., 42, 28 July 1898 and 3rd August 1898. (2) Murjiez Marika, M., 25, 13th and 20th June 1898.	(1) Rangama Murjiez, F., 24.
.....	.....	(1) Died of Plague on 10th July 1898.
House No. 9256. Division VIII. Cowlpet.	(1) Gansusab Nanesab, M., 23, 7th and 26th July 1898.	(1) Fatteshabi Nanesab, F., 60.
.....	.....	(1) Died of Plague on 12th July 1898.
Railway Porters' Chawls.	(1) Muniasuamy Narayensuamy, M., 30, 18th June 1898 and 4th July 1898. (2) Munian Narsaya, M., 26, 11th and 15th June 1898. (3) Narayensuamy Narsay, M., 22, 17th and 30th June 1898.	(1) Nagama Narayensuamy, F., 1½.
.....	.....	(1) Died of Plague on 13th July 1898.
House No. 7825. Ward No. 32. Division VII.	(1) Timothy Davali, M., 66, 1st and 11th June 1898. (2) Israel Davali, M., 21, 11th June 1898. (3) Ratna Davali, M., 17, 1st and 11th June 1898. (4) John Ballapa, M., 24, 1st and 11th June 1898. (5) Monesa Dyapa, M., 27, 1st and 11th June 1898. (6) Laximan Timothi, M., 11, 1st and 11th June 1898. (7) Rayava Timothi, F., 15, 1st and 15th June 1898. (8) Mana Davali, F., 49, 1st and 11th June 1898.	(1) Bhaktawa Girepa, 18
.....	.....	(1) Ill with Plague on 16th July 1898 and died on 17th July 1898.
House No. 6499. Ward No. 27. Division VI.	(1) Vithoba Manapa, M., 40, 7th and 11th July 1898. (2) Sathibai Balkrishna, F., 10, 7th and 11th July 1898.	(1) Padaibai Molloji, F., 21.
.....	.....	(2) Rama Vithoba, M., 3, 17th July 1898 and 4th August 1898.
.....	.....	(3) Thakubai Vithoba, F., 34, 17th and 24th July 1898.
.....	.....	(4) Bhimabai Vithoba, F., 2, 8th and 17th July 1898.
.....	.....	(1) Died of Plague on 17th July 1898.

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. Name, sex, age of the attacked, if he is amongst the *inoculated* ; date of onset of disease, symptoms, issue.	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 *un-inoculated* ; date of onset of disease, symptoms, issue.
House No. 7844. Ward No. 32. Division VII.	(1) Manjinath Vithal, M., 80, 12th and 16th July 1898. (2) Ningawa Manjinath, F., 65, 11th and 16th July 1898. (3) Mangeshrao Manjnath, M., 42, 14th and 28th June 1898. (5) Krisrao Manjinath, M., 30, 9th and 13th July 1898. (6) Anandrao Mangesh, M., 14, 14th and 28th June 1898. (7) Ganpat Mangesh, M., 12, 28th June 1898 and 9th July 1898. (8) Kalindabai Ramrao, F., 11, 1st and 9th July 1898. (9) Pandurang Ramrao, M., 31, 9th and 16th July 1898. (10) Janti Ramrao, F., 31, 9th and 16th July 1898. (11) Sanju Ramrao, F., 2, 12th and 16th July 1898.	(1) Shivram Manjinath, M., 22.
.....	.....	(1) Ill with Plague on 16th July 1898 and died on 18th July 1898.
House No. 5776. Ward No. 23. Division V.	(1) Sobanji Krishnaji, M., 50, 26th June 1898 and 3rd July 1898. (2) Jotiba Sobanji, M., 25, 28th June 1898 and 2nd July 1898. (3) Gopal Sobanji, M., 18, 15th and 24th June 1898.	(1) Savubi Sobanji, F., 44.
.....	.....	(1) Died of Plague on 19th July 1898.
House No. 2009. Ward No. 8. Division II.	(1) Parwatiwa Mudkapa, F., 40, 12th and 21 July 1898. (2) Fakirawa Fakirapa, F., 55, 12th and 21st July 1898. (3) Marudrapa Mudkapa, M., 40, 12th and 21st July 1898.	(1) Sowaka Gursidapa, F., 68.
.....	.....	(1) Died of Plague on 20th July 1898.
House No. 6290. Ward No. 26. Division VI.	(1) Sobana Unkarsa, M., 50, 16th and 23rd June 1898. (2) Kasibai Subana, F., 30, 16th and 21st June 1898. (3) Devrarsa Churumansa, M., 6, 9th and 16th July 1898.	(1) Yellubai Churamansa, F., 28. (2) Churamana Subana, M., 35. (3) Ambabai Churamansa, F., 7., 24th and 27th July 1898
.....	.....	(4) Imnasa Churamansa, M., 5, 24th and 27th July 1898.
.....	.....	(5) Tuljapa Churamansa, M., 3, 24th and 27th July 1898.
.....	.....	(1) Died of Plague on 21st July 1898.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset of disease, symptoms, issue.
House No. 5021. Ward No. 21. Division V.	(1) Gurapa Irbasapa, M., 10, 24th June 1898 and 4th July 1898. (2) Gangapa Irbasapa, M., 12, 24th June 1898 and 4th July 1898. (3) Baswaneva Irbasapa, F., 16, 24th June 1898 and 4th July 1898. (4) Nilawn Mahnidrapa, F., 16, 4th and 11th July 1898. (5) Mahindrapa Gursidapa, M., 34, 21st June 1898 and 8th July 1898.	(1) Advieja Irbassapa, F., 40. (2) Hachapa Irbassa, M., 22, 25th July 1898 and 4th August 1898.
.....	.....	
House No. 7180. Ward No. 28. Division VI.	(1) Bhimasa Dongarsa, M., 25, 27th June 1898 and 3rd July 1898. (2) Ishwarsa Dongarsa, M., 40, 22nd and 30th June 1898. (3) Morarsa Dangarsa, M., 24, 23rd June 1898 and 2nd July 1898. (4) Inkosa Dongarsa, M., 16, 23rd June 1898 and 2nd July 1898. (5) Yunnasa Ishwarsa, M., 13, 22nd and 27th June 1898. (6) Subasa Ishwarsa, M., 12, 20th and 27th June 1898. (7) Tikosa Ishwarsa, M., 10, 23rd and 27th June 1898. (8) Santikosa Ishwarsa, M., 69, 17th and 22nd July 1898. (9) Dongarsa Ishwarsa, M., 4, 10th and 21st July 1898. (10) C. Rundabai Ishwarsa, F., 35, 10th and 21st July 1898.	(1) Died of Plague on 21st July 1898. (1) Chandusa Ishwarsa, M., 2, 21st and 24th July 1898. (2) Yellapa Morarsa, M., 2, 21st and 27th July 1898. (3) Gantubai Dongarsa, F., 45, 22nd and 24th July 1898. (4) Ambabai Moraisa, F., 18, 21st and 23rd July 1898. (5) Ithubai Kristapa, F., 25. (6) Kristapa Bhimasa, M., 32.
.....	.....	
House No. 6184. Ward No. 25 (*C.*) Division V.	(1) Radhabai Irapa, F., 40, 23rd and 27th July 1898. (2) Manava Bhimapa F., 8, 17th and 31st July 1898. (3) Manapa Bhimapa, M., 5, 17th and 31st June 1898.	(6) Died of Plague on 21st July 1898. (1) Laximawa Bhimapa, F., 30.
.....	.....	
House No. 5499. Ward No. 22. Division V.	(1) Suami Gopalrao, M., 30, 6th and 27th June 1898. (2) Ramchandra Gopal, M., 25, 5th and 17th July 1898. (3) Dhondu Gopal, M., 18, 4th and 13th July 1898. (4) Savitri Suamirao F., 25, 4th and 17th July 1898. (5) Krishnabai Gopalrao, F., 14, 4th and 17th July 1898. (6) Ramchandra Bhagwant, M., 20, 5th and 17th July 1898.	(1) Died of Plague on 21st July 1898. (1) Laximi Suamirao, F., 18. (2) Sitabai Ramchandra, F., 12.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset of disease, symptoms, issue.
.....	.....	(2) Died of Plague on 23rd July 1898.
House No. 7193. Ward No. 28. Division VI.	(1) Onawa Parsapa, F., 40, 25th June 1898 and 6th July 1898. (2) Kalawa Khemapa, F., 42, 25th June 1898 and 6th July 1898.	(1) Jinapa Khemapa, M., 13.
.....	.....	(1) Died of Plague on 23rd July 1898.
House No. 5260. Ward No. 22. Division V.	(1) Binda Balanaik, M., 14, 10th and 16th July 1898. (2) Chitamber Balanaik, M., 22, 10th and 16th July 1898. (3) Balaji Balanaik, M., 42, 10th and 16th July 1898.	(1) Chandrubai Balanaik, F., 35.
.....	.....	(1) Died of Plague on 24th July 1898.
House No. 6103. Ward No. 25 (*b*). Division V.	(1) Bhimabai Narhar, F., 39, 30th July 1898 and 4th August 1898. (2) Krishnaji Narhar, M., 14, 16th July 1898 and 1st August 1898. (3) Narhar Waman, M., 40, 30th July 1898 and 19th July 1898. (4) Datu Waman, M., 30, 10th and 19th July 1898.	(1) Yeswant Narhar, M., 5.
.....	.....	(1) Died of Plague on 25th July 1898.
House No. 1163. Ward No. 5. Division I.	(1) Ishwarsa Tanosa, M., 5, 5th and 16th July 1898. (2) Mahadusa Tanosa, M., 10, 16th and 29th June 1898. (3) Sawatribai Tanosa, F., 30, 9th and 15th June 1898. (4) Yellapa Tanosa, M., 20, 23rd May 1898 and 16th June 1898.	
.....	(4) Died of Plague on 25th July 1898.	
House No. 9004. Ward No. 39. Division VIII.	(1) Adviepa Sangapa, M., 60, 6th and 19th July 1898. (2) Irawa Mallapa, F., 5th August 1898.	(1) Mallapa Adviepa, M., 30.
.....	.....	(1) Died of Plague on 26th July 1898.
House No. 1177. Ward No. 5. Division I.	(1) Ibrahim Rustum, M., 40, 4th and 22nd June 1898. (2) Imamsab Ibramsab, M. 25, 4th and 22nd June 1898. (3) Abdul Kadir Ibramsab, M., 12, 26th June and 4th July 1898. (4) Miambi Ibramsab, F., 50, 11th and 21st July 1898. (5) Ashabi Ibramsab, F., 15, 28th June 1898 and 3rd July 1898.	

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset of disease, symptoms, issue.
	(6) Hafizbi Husseinsab, F., 14, 28th June 1898 and 3rd July 1898. (7) Badibi Abdulsab, F. 22, 11th and 22nd June 1898. (8) Sarambi Abdul Kadar, F., 6, 11th and 22nd June 1898. (9) Rustamsab Ibramsab, M., 6, 4th and 22nd June 1898.	
.....	(9) Died of Plague on 26th July 1898.	
House No. 2175 Ward No. 9. Division II.	(1) Imambi Davalsab, F., 18, 3rd and 22nd July 1898. (2) Davalsab Gudusab, M., 20, 4th and 26th June 1898.	(1) Manabu Husensab, F., 43.
.....	.....	
House No. 6523. Ward No. 27. Division VI.	(1) Gursidawa Chennapa, F., 70, 22nd and 27th June 1898.	(1) Died of Plague on 26th July 1898. (1) Chennapa Parvatapa.
.....	(1) Ill with Plague on 27th July 1898 and discharged cured on 22nd August 1898.	(1) Died of Plague on 27th July 1878.
House No. 6630. Ward No. 27. Division VI.	(1) Adviepa Murtenapa, M., 40, 7th and 13th July 1898. (2) Gadgiepa Huchapa, M., 12, 7th and 13th July 1898. (3) Gursidawa Huchapa, F., 40, 7th and 13th July 1898. (4) Sidawa Huchapa, F., 8, 7th and 13th July 1898. (5) Adiviewa Rudrapa, F., 14, 7th and 13th July 1898. (6) Gangawa Adviepa, F., 16, 7th and 13th July 1898. (7) Rudrapa Satapa, M., 25, 7th and 13th July 1898. (8) Huchya Malaya, M., 38, 10th and 19th August 1898. (9) Mallaya Huchya, M., 18, 3rd and 15th August 1898.	(1) Satapa Chenbasapa, M., 60.
.....	.....	
House No. 5347. Ward No. 22 (B.) Division V.	(1) Bassapa Ningapa, M., 25, 8th and 19th July 1898. (2) Bassapa Gursidapa, M., 32, 19th and 28th July 1898.	(1) Died of Plague on 27th July 1898. (1) Fakirapa Ningapa, M., 31.
.....	.....	
House No. 6522. Ward No. 27. Division VI.	(1) Sukerawa Mallapa, F., 50, 19th and 26th July 1898.	(1) Died of Plague on 27th July 1898. (1) Ningapa Mallapa, M.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset of disease, symptoms, issue.
.....	.....	(1) Ill with Plague on 27th July 1898 and discharged cured on 9th August 1898.
House No. 5347. Ward No. 22. Division V.	(1) Bassapa Gursidapa, M., 35, 19th and 28th July 1898. (2) Bassapa Ningapa, M., 25, 8th and 19th July 1898.	(1) Ningapa Shivapa, M., 64. (2) Fakirapa Ningapa, M., 30.
.....	.....	(1) Died of Plague on 13th August 1898.
.....	.....	(2) Died of Plague on 27th July 1898.
House No. 2784. Ward No. 12. Division III.	(1) Maktumsab Janglisab, M., 35, 17th May 1898. (2) Abdulrahim Muktumsab, M., 6, 17th May 1898.	(1) Ratma Janglisab, F., 65.
.....	.....	(1) Died of Plague on 28th July 1898.
House No. 1589. Ward No. 6. Division II.	(1) Renasa Subramansa, M., 30, 23rd May 1898 and 26th June 1898. (2) Subramansa Renasa, M., 12, 23rd May 1898 and 26th June 1898. (3) Ganpatsa Renasa, M., 8, 23rd May 1898 and 26th June 1898.	(1) Rakmabai Renasa, F., 28.
.....	.....	(1) Died of Plague on 28th July 1898.
House No. 1723. Ward No. 7. Division II.	(1) Karbasapa Chenbasapa, M., 55, 3rd and 16th August 1898. (2) Baslingawa Karbasapa, F., 4, 16th and 20th July 1898. (3) Gursidapa Karbasapa, M., 23, 16th and 19th July 1898. (4) Baslingapa Karbasapa, M., 17, 13th and 30th June 1898. (5) Nagawa Gursaidapa, F., 22, 16th and 21st July 1898. (6) Nilawa Karbasapa, F., 30, 16th and 19th July 1898.	(1) Chenbasapa Karbasapa, M., 24.
.....	.....	(1) Died of Plague on 29th July 1898.
House No. 5434. Division V.	(1) Irawa Malleshapa, F., 20, 4th and 27th July 1898. (2) Bhagawa Virpakshapa, F., 45, 19th June 1898 and 4th July 1898. (3) Irapa Virpakshapa, M., 41, 27th and 30th July 1898. (4) Kristawa Ramapa, F., 20, 27th July 1898 and 4th August 1898.	(1) Ramapa Virpakshapa, M., 25.
.....	.....	(1) Died of Plague on 30th July 1898.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	Names, sexes and ages of the *uninoculated* persons who were living in the same house on the date of attack. Name, sex, age of the attacked, if he is amongst the *uninoculated*; date of onset of disease, symptoms, issue.
House No. 5473. Ward No. 22. Division V.	(1) Ramapa Manaji, M., 6, 26th June 1898 and 3rd July 1898. (2) Nagendra Manaji, M., 9, 26th June 1898 and 3rd July 1898. (3) Chandrabai Manaji, F., 20, 16th and 24th July 1898. (4) Yellubai Manaji, F., 6, 16th and 19th July 1898. (5) Manaji Yellapa, M., 30, 26th June 1898 and 23rd July 1898. (6) Girjabai Parasram, F., 35, 6th and 16th July 1898. (7) Sawubai Rajba, F., 18, not present, but inoculated twice.	(1) Parasram Yellapa, M., 35.
.....	.....	
House No. 7770. Ward No. 31. Division VII.	(1) Rachawa Krishnasa, F., 40, 22nd June 1898 and 1st July 1898. (2) Dekubai Yellapa, F., 20, 22nd June 1898 and 1st July 1898. (3) Dongrubai Dhondasa, F., 22, 8th and 16th July 1898. (4) Santubai Parasram, F., 40, 22nd June 1898 and 1st July 1898. (5) Vithoba Bankapa, M., 24, 22nd June 1898 and 1st July 1898. (6) Ishwarbai Vithoba, F., 14, 22nd June 1898 and 1st July 1898. (7) Laxmibai Malkapa, F., 20, 22nd June 1898 and 1st July 1898. (8) Dhondusa Ambasa, M., 28, 22nd June 1898 and 1st July 1898.	(1) Died of Plague on 30th July 1898. (1) Ambubai Malkapa, F., 1½, (20th and 24th August 1898.)* (2) Ambabai Dhondusa, F., 3. (2) Yellubai Ambasa F., 40, (12th and 15th August 1898.)* (4) Malkapa Bankapa, M., 22, (11th and 20th August 1898.)* (5) Malkapa Ambasa, M., 34. (6) Yellapa Tuljapa, M., 30.
.....	.....	
.....	(5) Ill with Plague on 3rd August 1898 and discharged cured on 11th August 1898.	(2) Died of Plague on 31st July 1898. (5) Ill with Plague on 8th August 1898 and died on 11th August 1898.
.....	(6) Ill with Plague on 3rd August 1898 and discharged cured on 13th August 1898.	(6) Ill with Plague on 3rd August 1898 and discharged cured on 13th August 1898.
House No. 2774 and 75. Ward No. 12. Division III.	(1) Nanima Dostgirsab, F., 10, 17th May 1898 and 5th June 1898. (2) Dostgirsab Hajratsab, M., 40, 17th May 1898 and 5th June 1898. (3) Abdulkadir Hazratsab, M., 35, 17th May 1898 and 5th June 1898. (4) Hapuna Hajratsab, F., 60, 17th May 1898 and 5th June 1898.	(1) Dostgirsab Barasab, M., 75.
.....	.....	(1) Died of Plague on 31st July 1898.

* These received inoculation after the death of the first Plague case amongst them, uninoculated at that time.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	Names, sexes and ages of the *uninoculated* persons who were living in the same house on the date of attack. Name, sex, age of the attacked, if he is amongst the *uninoculated*; date of onset of disease, symptoms, issue.
House No. 4439 and 40. Ward No. 19. Division.	(1) Yellapa Jattapa, M., 60, 5th and 8th June 1898. (2) Baiawa Yellapa, F., 40, 5th and 8th June 1898.	(1) Hallawa, Yellapa, F., 11. (2) Bhomawa Yellapa, F., 14.
.....	.....	(1) Died of Plague on 31st July 1898.
.....	.....	(2) Ill with Plague on 31st July 1898 and died on 6th August 1898.
House No. . Ward No. . Division. Now living in House No. 6458. Ward No. 27. Division VI.	(1) Parvatibai Ganpatsa, F., 14, 25th July 1898 and 17th August 1898. (2) Govindsa Sabasa, M., 16, 23rd and 25th July 1898. (3) Krishtapa Nagosa, 3 months, 13th and 20th August 1898. (4) Dikara Tuljapa, M., 8, 23rd and 27th July 1898. (5) Nemasa Narsingsa, M., 26, 2nd and 10th August 1898. (6) Kushapa Tuljapa, M., 10, 23rd and 27th July 1898. (7) Ramchandra Narsingsa, M., 10, 23rd and 27th July 1898. (8) Deorarsa Tuljapa, M., 6, 23rd and 27th July 1898. (9) Krishnasa Tuljapa, M., 16, 23rd and 27th July 1898. (10) Laxmibai Nagosa, F., 18, 13th and 20th August 1898. (11) Bhagubai Vegosa, F., 2, 25th July 1898 and 17th August 1898. (12) Ganpatsa Subasa, M., 18, 23rd and 27th July 1898. (13) Nagosa Subasa, M., 22, 23rd and 27th July 1898. (14) Yegusa Narsingsa, M., 25, 23rd and 27th July 1898.	(1) Mahdusa Nemasa, M., 2. (2) Nagubai Tuljapa, F., 2. (3) Parasram Narsapa, M., 30. (4) Yellubai Nemasa, F., 24. (5) Tukaram Narsapa, M., 18. (6) Godavari Nemasa, M., 2. (7) Yedusa, M., 5.
.....	.....	(1) Died of Plague on 1st August 1898.
.....	.....	(2) Died of Plague on 1st August 1898.
.....	.....	(3) Ill with Plague on 5th August 1898 and died on 8th August 1898.
.....	.....	(4) Ill with Plague on 5th August 1898 and died on 10th August 1898.
.....	.....	(6) Died of Plague on 3rd August 1898.
House No. 5863. Ward No. 24. Division V.	(1) Rajesab Imamsab, M., 7th and 13th June 1898. (2) Nanesab Alisab, M., 35, 27th June 1898 and 2nd July 1898.	(1) Ashabi Nanesab, F., 30. (2) Mohdinbi Nanesab, F., 5.

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. Name, sex, age of the attacked, if he is amongst the *inoculaetd* ; date of onset of disease, symptoms, issue.	Nomes, 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 *un-inoculated* ; date of onset of disease, symptoms, issue.
House No. 5863. Ward No. 24. Division V.	.....	(1) Died of Plague on 2nd August 1898.
	.....	(2) Died of Plague on 10th August 1898.
House No. 2005. Ward No. 8A. Division II.	(1) Fakirawa Mallapa, F., 13, 12th and 26th July 1898. (2) Mallapa Gursidapa, M., 46, 12th July 1898 and 4th August 1898 (3) Rachapa Mallapa, M., 12, 12th July 1898 and 4th August 1898. (4) Jrawapa Mallapa, F., 7, 12th July 1898 and 26th July 1898.	(1) Gursidapa Parapa, M., 35.
.....	.....	(1) Died of Plague on 3rd August 1898.
House No. 5280. Ward No. 22A. Division V.	(1) Fakirsa Khandusa, M., 40, 16th and 23rd July 1898. (2) Fikarsa Fakirsa, M., 22, 8th and 23rd July 1898. (3) Khandusa Fakirsa, M., 16, 16th and 19th July 1898.	(1) Yellubai Parasram, F., 20.
.....	.....	(1) Died of Plague on 3rd August 1898.
House No. 5856. Ward No. 24B. Division V.	(1) Ragesab Rajesab, M., 21. (2) Kassimsab Rajaksab, M., 3, 4th and 20th August 1898. (3) Hajratsab Rajaksab, M., 15, 26th June 1898 and 1st July 1898.	(1) Pirsab Rajesab, M., 12. (2) Kassimsab Rajesab, M., 8. (3) Pirnia Rajaksab, F., 1.
.....	.....	(4) Imambu Rajaksab, F., 40.
.....	.....	(5) Kulsumbi Rajaksab, F., 22.
.....	.....	(1) Died of Plague on 5th August 1898.
.....	.....	(2) Died of Plague on 17th August 1898.
.....	.....	(3) Died of Plague on 16th August 1898.
House No. 5846. Ward No. 24. Division V.	(1) Kassimsab Mahomed, M., 25, 28th June 1898 and 2nd July 1898. (2) Mahomed Alisab, M., 53, not present, but inoculated twice.	(1) Mohdinbi Alisab, F., 48.
.....	.....	(1) Died of Plague on 6th August 1898.
House No. 5822. Ward No. 24 A. Division V.	(1) Abdulkadir Fakrudin, M., 23, 28th June 1898 and 1st July 1898. (2) Muktum Hussein Fakrudin, M., 14, 26th June 1898 and 1st July 1898. (3) Dorabi Muktum, F., 11, 19th and 24th July 1898. (4) Jamalbi Abdul Fakrudin, F., 5 not present but inoculated twice.	(1) Abdulrahiman Fakrudin, M., 35.

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. Name, sex, age of the attacked, if he is amongst the *inoculated* ; date of onset of disease, symptoms, issue.	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 amogst the *un-inoculated* ; date of onset of disease, symptoms, issue.
.....	.....	(1) Died of Plague on 7th August 1898.
House No. 7764. Ward No. 31. Division VII.	(1) Ishwarsa Gangasa, M., 16, 22nd June 1898 and 16th July 1898. (1) Jambubai Gangasa, F., 10, 22nd June 1898 and 1st July 1898. (3) Gangasa Ranuasa, M., 48, 22nd June 1898 and 16th July 1898.	(1) Laxmibai Rajansa, F., 25. (2) Rajansa Gangusa, M., 26. (3) Tuljubai Gangasa, F., 1½.
.....	.....	(1) Ill with Plague on 5th August 1898 and discharged cured on 15th August 1898.
.....	.....	(2) Ill with Plague on 9th August 1898 and died on 9th August 1898.
.....	.....	(3) Died of Plague on 7th August 1898.
.....	.....	(1) Ranawa Ballapa, F., 25.
House No. 5445. Ward No. 22 (*C.*) Division V.	(1) Vittoba Ramapa, M., 22, 18th and 24th July 1898. (2) Balkrishna Venkapa, M., 30, 7th and 10th July 1898. (3) Ramapa Nagoji, M., 55, not present, but inoculated twice.	(2) Shriniwas Ballapa, M., 6 month.
.....	.....	(1) Died of Plague on 8th August 1898.
.....	.....	(2) Died of Bronchitis on 4th August 1898.
House No. 5882. Ward No. 24 (*B.*) Division V.	(1) Rajabu Abasab, F., 11, 2nd and 8th July 1898. (2) Pirsal Abasab, M., 9, 1st and 8th July 1898.	(1) Maktumbi Abasab, F., 2. (2) Imambu Abasab, F. 35. (3) Malangsab Kasimsab, M., 70.
.....	.....	(4) Perma Mohdinsab, F., 14.
.....	.....	(5) Abasab Mallangsab, M., 48.
.....	.....	(5) Died of Plague on 10th August 1898.
House No. 5844. Ward No. 24 (*A.*) Division. V.	(1) Hazratsab Hassansab, M., 50, 25th June 1898 and 1st July 1898. (2) Allabakshah Hazratsab, M., 1, 2nd and 9th July 1898. (3) Khatijabi Hazratsab, F., 30, 2nd and 9th July 1898.	(1) Khajama Hazratsab, F., 4.
.....	.....	(2) Died of Plague on 10th August 1898.
House No. 1657. Ward No. 6 (*B.*) Division II.	(1) Sidlingapa Gurapa, M., 26, 7th and 14th July 1898. (2) Satawa Shidlingapa, F,. 4, 28th July 1898 and 3rd August 1898.	(1) Gurpadapa Gurapa, M., 54. (2) Mursavirapa Gurpadapa, M., 25.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset of disease, symptoms, issue.
.....	.....	(1) Died of Plague on 10th August 1898.
House No. 5308. Ward 22. Division V.	(1) Somana Santapa, M., 25, 7th and 11th June 1898.	(1) Hanmantapa Santapa, M., 40.
.....	.....	(1) Died of Plague on 10th August 1898.
House No. 5861. Ward No. 24 (B.) Division V.	(1) Rajesab Imamsab, M., 50, 7th and 13th June 1898.	(1) Mohdinbi Nanesab, F., 5. (2) Jansabi Rajesab, F., 38.
.....	.....	(1) Died of Plague on 10th August 1898.
.....	.....	(2) Died of Plague on 25th August 1898.
House No. 4876 & 79 Ward No. 21. Division V.	(1) Nagapa Shivapa, M., 28, 19th July 1898 and 7th August 1898. (2) Virapa Shivapa, M., 14, 31st July 1898 and 13th August 1898. (3) Gangawa Murigepa, F., 12, 31st July 1898 and 13th August 1898. (4) Savantrewa Murigepa, F., 6, 31st July 1898 and 13th August 1898.	(1) Murigepa Shivapa, M., 34. (2) Shivapa Nagapa, M., 72. (3) Salaiva Murigepa, F., 4. (4) Rachawa Murigepa, F., 30. (5) Gurlingawa Shivapa, F., 50. (6) Nagawa Murigepa, F., 10 (31st August and 7th September 1898).*
.....	.....	
.....	.....	
.....	.....	(2) Died of Plague on 13th August 1898.
.....	(4) Ill with Plague on 18th August 1898 and discharged cured on 15th September 1898.	(3) Died of Plague on 11th August 1898.
House No. 375. Ward No. 215. Division I.	(1) Virapa Chenapa, M., 25, 26th July 1898 and 1st August 1898. (2) Bassapa Yellapa, M., 14, 31st January 1898 and 14th February 1898. (3) Chinawa Sidlingapa, F., 33, 31st January 1898 and 14th February 1898. (4) Kasibai Sidlingapa, F., 25, 10th and 15th June 1898 (5) Basawa Kalapa, F., 15, 21st and 28th July 1898. (6) Sanmukhapa Sidapa, M., 22, 31st January 1898 and 14th February 1898. (7) Laxmawa Sidapa, F., 36, 31st January 1898 and 14th February 1898. (8) Siddapa Hullgapa, M., 40, 14th February 1898.	(1) Irapa Chenbasa, M., 13.
.....	.....	(1) Died of Plague on 12th August 1898.

* Inoculated after (2) and (3) had died of Plague; un-inoculated at time of their deaths.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset of disease, symptoms, issue.
House No. 5105. Ward No. 21. Division V.	(1) Parvatiwa Sangapa, F., 8, 26th and 30th September 1898. (2) Shirsawa Bassapa, F., 30, 4th and 29th August 1898. (3) Parvatewa Sangapa, F., 8, 26th and 30th September 1898. (4) Hanmant Mahrudrapa, M., 26, 27th July 1898 and 3rd August 1898. (5) Parawa Ramchandra, F., 25, 11th and 23rd July 1898. (6) Kalapa Mahrudrapa, M., 20, 24th and 30th July 1898. (7) Savantrewa Sangapa, F., 6, 26th and 30th July 1898. (8) Tangawa Mahrudrapa, F., 50, 16th and 29th August 1898. (9) Venkawa Kalapa, F., 18, 3rd and 23rd August 1898. (10) Basawant Bassapa, M., 7, 4th and 23rd August 1898. (11) Bassapa Ballappa, M., 50, 4th and 23rd August 1898.	(1) Advicpa Ramapa, M., 45. (2) Manawa Advicpa, F., 25. (3) Somana Hanmant, M., 1½ month. (4) Bhagawa Shirsapa, F., 50, (13th and 28th August 1898).* (5) Jevubai Advicpa, F., 8, (13th and 28th August 1898).* (6) Bhimawa Advicpa, F., 6, (13th and 28th June 1898).* (7) Sundrawa Advicpa, F., 4. (8) Kallapa Bassapa, M., 65. (9) Bassapa Kallapa, M., 35. (10) Sangapa Kalapa, M., 30. (11) Somapa Bassapa, M., 13. (12) Shivapa Bassapa, M., 6. (13) Virupanapa Bassapa, M., 1. (14) Naisawa Subanna, F., 40. (15) Rachawa Kalapa, F., 25. (15) Gangawa Sangapa, F., 10. (17) Sitawa Kallapa, F., 6. (18) Jaikalawa Sangapa, F., 18. (19) Virapa Kalapa, M., 50. (20) Virbada Virapa, M., 8. (21) Kalawa Hanmant.
		(1) Ill with Plague on 20th August 1898 and died on 24th August 1898. (2) Died of Plague on 15th August 1898. (3) Died of Plague on 13th August 1898.
House No. 5276. Ward No. 22 (A). Division V.	(1) Fakirsa Yellappa, M., 42, 19th and 27th September 1898. (2) Nemasa Yellapa, M., 6, 24th July 1898 and 2nd August 1898. (3) Sanmuksa Fakirsa, M., 8, 22nd and 27th September 1898. (4) Tuljabai Fakirsa, F., 35, 24th July 1898 and 2nd August 1898.	(1) Dasim Fakirsa, M., 20. (2) Ningubai Fakirsa, F., 3, (25th and 29th August 1898).†
.....	.....	(1) Died of Plague on 14th August 1898.

* Inoculated after (3) had died of Plague, un-inoculated at that time.
† Inoculated after the death, from Plague, of (i).

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset o disease, symptoms, issue.
House No. 5057. Ward 21 No. (*B.*) Division V.	(1) Gangawa, Shivlingapa, F., 60, 6th and 19th June 1898. (2) Fakirawa Genapa, F., 12, 6th and 19th June 1898. (3) Irawa Sangapa, F., 10, 6th and 19th June 1898. (4) Bassawa Sangapa, F., 20, 19th June 1898 and 4th July 1898. (5) Huchawa Virupax, F., 7, 6th and 19th June 1898. (6) Sangapa Shivapa, M., 25, 19th June 1898.	(1) Fakirapa Gurshidapa, M., 6. (2) Irapa Shivapa, M.,40. (3) Gurshidawa Chenvirapa, F., 30. (4) Shidlingapa Chenvirappa, M., 2.
Health Camp.	(1) Ill with Plague on 14th August 1898 and discharged cured on 28th August 1898. (2) Ill with Plague on 14th August 1898 and discharged cured on 30th August 1898. (1) Ramchandra Govind, M., 30, 5th August 1898. (2) Krishna Ramchandra, M., 3, 5th and 16th August 1898. (3) Chandri Ramchandra, F., 5, 5th and 16th August 1898. (4) Laximan Govind, M., 25, 29th June 1898 and 16th August 1898. (5) Vithu Ramchandra, M., 8, 5th and 16th August 1898. (1) Ill with Plague on 20th August 1898 and discharged cured on 31st August 1898.	(3) and (4) died of Plague on 14th August 1898.
House No. 416. Ward No. 2. Division I.	(1) Adviepa Nurandapa, F., 35, 2nd and 10th June 1898. (2) Rachawa Nurandapa, F., 3, 2nd and 10th June 1898. (3) Ulnapa Nurandapa, M., 9, 2nd and 10th June 1898. (4) Mallawa Bassapa, F., 12, 4th and 18th August 1898. (5) Gangawa Chanbasapa, F., 60, 4th and 18th August 1898. (6) Gangapa Bhimapa, M., 7th June 1898 and 17th July 1898. (7) Rajawa Bhimapa, F., 26th June 1898 and 17th July 1898.	(1) Bhimapa Gangapa, M., 40.
.....	.....	
House No. 9651. Ward No. 42. Division IX.	(1) Biama Somaji, F., 40, 15th and 26th August 1898. (2) Imambu Badimia, F., 4, 15th and 26th August 1898.	(1) Died of Plague on 4th September 1898. (1) Burasab Badesab, M., 34.
.....	.....	
House No. 10776. Ward No. 47. Division X.	(1) Rachapa Madvialapa, M., 36, 22nd July 1898 and 7th August 1898. (2) Baswanewa Rachapa, F., 8, 30th July 1898 and 24th August 1898. (3) Shadavari Bassapa, M., 11, 5th and 18th July 1898. (4) Rachawa Bassapa, F., 50, not present.	(1) Died of Plague on 16th September 1898. (1) Bassapa Shivapa, M., 45. (2) Sangowa Kombassapa, F., 30.
.....	.....	
		(1) Ill with Plague on 10th September 1898. (2) Died of Plague on 10th September 1898.

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. Name, sex, age of the attacked, if he is amongst the *inoculated*; date of onset of disease, symptoms, issue.	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 *un-inoculated*; date of onset of disease, symptoms, issue.
House No. 10960. Ward No. 47. Division X.	(1) Bassapa Shivapa, M., 25, 24th August 1898 and 2nd September 1898. (2) Mallapa Baslingapa, M., 12, 24th August 1898 and 2nd September 1898. (3) Adviawa Baslingapa, F., 8, 15th August 1898 and 5th September 1898. (4) Basawa Shivapa, F., 50, 15th August 1898 and 6th September 1898. (5) Baslingawa Baslingapa, F., 40, 15th August 1898 and 5th September 1898.	(1) Baslingapa Shivapa, M., 40.
	.....	(1) Died of Plague on 15th September 1898.
House No. 4543. Ward No. 20. Division IV.	(1) Baswanapa Shidapa, M., 28, 27th July 1898 and 4th August 1898. (2) Gangawa Shidapa, F., 50, 5th and 12th August 1898. (3) Shankerawa Virbadrapa, F., 22, 24th July 1898 and 3rd August 1898. (4) Parwatewa Virbasapa, F., 30, 27th July 1898 and 7th August 1898. (5) Shivlingapa Shidapa, M., 22, 27th July 1898 and 7th August 1898. (6) Virapa Virbasapa, M., 10, 23rd July 1898 and 3rd August 1898. (7) Virbasawa Virbudrapa, F., 5, 21st July 1898 and 3rd August 1898. (8) Rachawa Virbasapa, F., 5, 23rd July 1898 and 3rd August 1898.	(1) Siddapa Virbadrapa, M., 6 months.
.....	.....	(1) Died of Plague on 16th September 1898.
House No. 9409. Ward No. 41. Division IX.	(1) Fakira Tipanna, M., 14, 22nd July 1898 and 17th August 1898. (2) Tukapa Takapa, M., 22, 22nd July 1898 and 16th August 1898. (3) Yeshwant Tipanna, M., 11, 22nd July 1898 and 17th August 1898. (4) Dawalapa Hanmantapa, M., 22, 22nd July 1898 and 17th August 1898. (5) Mohdia Gangapa, M., 4, 22nd July 1898 and 17th August 1898. (6) Chimnibai Gangapa, F., 24, 17th and 27th June 1898. (7) Umiga Krishnajapa, M., 12, 22nd July 1898 and 21st August 1898. (8) Chandrawa Krishnajapa, F., 40, 22nd July 1898 and 16th August 1898. (9) Owawa Dharmapa, F., 14 not present.	(1) Laxmiawa Tipanna, F., 8.
	.....	(1) Died of Plague on 16th September 1898.
House No. 11480. Ward No. 49. Division X.	(1) Isamohdin Mordansab, M., 25, 3rd and 13th August 1898. (2) Kalsumbi Hassansab, F., 60, 29th August 1898 and 9th September 1898. (3) Ashubi Mardansab, F., 50, 29th August 1898 and 9th September 1898. (4) Hajratbi Isamohdinsab, F., 20, 29th August 1898 and 9th September 1898. (5) Vahabsab Hassansab, M., 40, not present. (6) Hassansab Hussensab, M., 60, not present. (7) Abdulkarim Mardansab, M., 12, not present.	(1) Mahomed Hussein, M., 2. (2) Jorabi Vahabsab, F., 36.
		(2) Died of Plague on 17th September 1898.

No. 15093 OF 1898.

FROM

THE SURGEON-GENERAL WITH THE
GOVERNMENT OF BOMBAY;

TO

THE SECRETARY TO GOVERNMENT,
General Department (Plague), Bombay.

Office of the Surgeon-General with the
Government of Bombay, Town Hall:
Bombay, 26th November 1898.

SIR,

In reply to your letter No. 5890, dated 18th October 1898, I have the honour to return herewith Captain Leumann's report on inoculation against plague as carried out in Hubli.

2. The report contains figures which seem to be good evidence in favour of Monsieur Haffkine's prophylactic; and, in all essential points, I agree entirely with Dr. Leumann's lucidly expressed opinion of its value as a protective measure against plague.

3. Probably my estimate of its general applicability is somewhat lower than his; for although, as I have already informed Government, I recognize the usefulness of the method within certain limits, it seems unlikely that before an invasion of plague, or in its early period, people will freely employ inoculation, even supposing that it were conveniently available, and though the populace may be ready to use the preventive, and the supply be much larger than it now is, the number of inoculators and their speed of work have their limits.

4. Whilst acknowledging that a large degree of immunity against plague is conferred by inoculation with Haffkine's prophylactic, we must not forget that it leaves the cause of the disease untouched, or allow it to beget a false sense of security in regard to the conveyance of infection, or any neglect of sanitary measures for which it is not a substitute. Otherwise the uninoculated section of the population may be placed in greater danger than if other measures of sanitation were alone relied on.

5. In the rules regarding the privileges of inoculated persons, dated 4th April 1898, which are attached to the report, disinfection of their clothing and bedding secures freedom to go anywhere after a detention of two or three days subsequent to inoculation. Such a concession seems to overlook the danger that such persons, often relatives of the plague-stricken, will, in their knowledge of personal security, be less likely to avoid visits to infected persons or dwellings, or close contact with infected persons or articles.

It is possible therefore that, under such a rule, those inoculated may be more dangerous as carriers of plague germs than those who are not immunised. May not inoculation have thus helped to cause a more severe and rapid spread of plague in Hubli than would otherwise have happened?

Dr. Leumann in some degree defends inoculation against this objection, but it cannot, I think, be wholly denied.

6. Dr. Leumann's comparison between the respective merits of inoculation and other sanitary measures is made on the supposition that the latter might be entirely discarded; but it seems very improbable that Government, or their responsible officers, would ever rely on the prophylactic alone.

I would observe that the indirect protection of the uninoculated referred to by Dr. Leumann would not operate appreciably until a large number had been inoculated.

I have the honour to be,
Sir,
Your most obedient Servant,
G. BAINBRIDGE, M.D., Surgeon-General,
Surgeon-General with the Government of Bombay.

B 1555—11

No. 1283 of 1899.

From

W. M. HAFFKINE, Esquire, C.I.E.;

To

The PLAGUE COMMISSIONER,
Bombay Presidency, Bombay.

Plague Research Laboratory, Mazgaon,
Bombay, 26th January 1899.

Sir,

The following are the remarks which the report on the epidemic at Hubli seems to me to call forth.

Paragraphs I to III of the report.—The considerations which Captain Leumann relates as having guided him in forming his preliminary ideas on the effect of inoculation are a useful illustration as to how risky it is, in this instance as in any other, to rely on indirect data, on what may be called "circumstantial evidence," for concluding to what is actual truth. One of the great difficulties we have to contend with is that a large number of persons, when thinking on the question of inoculation, base their conclusions upon what happens to be at the time their general conception on immunity. Dr. Leumann tells us how (following Professor Wright's observations, which refer to different conditions) his idea was that, if the inoculated persons had exhibited the "*Widal-Durham reaction*," he would have felt justified in believing in the anti-plague inoculation. Unfortunately, they did not show such. Later on he came across some persons inoculated twice, and these showed the reaction. He, therefore, expected that the twice-inoculated will be immune, and from that time he began to carry out inoculation. He inoculated 34,680 persons in Hubli, —24,938 twice and 9,742 once only (para. XXIX); and the result was that both, the once-inoculated and the twice-inoculated, exhibited a high degree of immunity, and that Dr. Leumann estimates the difference he has observed between the two at some 10 per cent. It is presumable that he relies now much less on the "reaction"; and seeing the enormous, as to the result, and the most excellent work he has performed in Hubli, he must regret that that reaction, or any preconceived idea, was ever permitted to obscure for him the teaching of the facts so many times demonstrated on the working of the anti-plague inoculation method, during the last two years of plague in India.

The explanation of all the difficulties which may be met with by an attempt of guessing truth is an endless and an ungrateful task; and it need only be remarked passingly with regard to the present instance, that, although a second inoculation, after which Dr. Leumann observed a "Widal-Durham reaction," has been always recommended as an advantageous proceeding, the existence or otherwise of that reaction need not go necessarily parallel with immunity. The two can be separated artificially without losing their respective properties; and a fluid which shows reaction may possess no immunising properties whatever; and a person whose products do not show that reaction may be highly immune, as Captain Leumann saw it in studying his Hubli patients. Dr. Leumann's narrative will have served, however, a good purpose if, in connection with the inoculation against the plague, it will have in any degree lessened the reliance on conclusions formed *à priori*, which are justifiable only until knowledge on a subject is gained, and if it brings home a conviction that it is the study of the results of the treatment in human communities, as obtained in the Byculla House of Correction, at Damaon, at Kirkee, at Lanowli, in the Umarkhadi Common Jail, in Undhera, in the Khoja community of Bombay, in the Punjáb, or as Captain Leumann has seen them now in Hubli, that alone contain unmistakable teaching.

XV.—It is desirable to draw attention to this paragraph of the officers in charge of plague operations, and to request them to invariably extend their inquiry

to the *total* mortality in the inoculated and non-inoculated, which, obviously, is a *datum* quite otherwise reliable than any so-called plague mortality can be.

XVIII.—It is desirable also to point out that since the time when the inoculation certificate has obtained some monetary and practical value (in the Dhárwár District it costs now the holder annas 2; it affords certain facilities of travelling, etc., and on account of that may perhaps be sold and bought), it is theoretically admissible that relatives or friends may appropriate certificates on the deaths of the holders, and omit to report that the patient had a certificate and had been inoculated, in order to keep the certificate to themselves. The fallacy which might ensue from this in the information as to the deaths in inoculated and uninoculated is obvious. Every time, therefore, as the officers concerned intend to submit their personal experience as bearing on the question of the efficacy or otherwise of inoculation, details may be furnished as to the precautions they have taken to avoid the errors here referred to. On my enquiry in Hubli as to this source of mistake, I have been informed that a transfer of certificates was impossible on a scale large enough to affect conclusions when the whole population was inoculated; and that under any conditions the detailed description of the holder given on the certificate reduces very greatly the limits of such a transfer.

In the same paragraph we read: "all statements concerning the case or corpse having been inoculated are at once carefully investigated". It is, of course, to be hoped that this does not mean that statements as to non-inoculation were not as carefully investigated. It is evident that erroneous results may be obtained if investigation is in any way centred on one of the two groups (the inoculated only, or the uninoculated). In Captain Leumann's case there is a re-assuring statement to be found in the same paragraph: "besides this, *all* names (of deceased persons) are looked up in my registers".

Paragraph XX contains the following:—

"Hence I consider it advisable never to inoculate a person if he be found suffering from fever over 100 F., more especially if he be an actual contact from a plague case or corpse."

To make things clearer, the rule which Dr. Leumann quotes in these terms should be formulated as follows:—

(*a*) All persons suffering from fever at the time when they present themselves for inoculation, quite irrespective of their being contacts or not, should be refused the operation till a couple of days have elapsed after the fever will have left them (*vide* "The protective inoculation against Plague", Poona, 3rd January 1898); and

(*b*) contacts, that is persons in whose family cases of plague have occurred, or who are or were recently attending on plague patients, or were otherwise exposed to plague infection, and who may, therefore, have infection in them, but do not show yet any symptoms of the disease in the shape of a severe headache, or a beginning of tenderness in glandular regions, or of fever; *i.e.*, all persons who may be in the incubation stage of plague without yet showing an actual beginning of the same, should be inoculated without hesitation, as early as possible, and exactly in the same way as ordinary persons.

This is because the information as far available shows that, if there be still an interval of some 24 hours before actual symptoms of plague were to appear, the inoculation is likely either entirely to arrest the disease, or to mitigate its severity.

With regard to this rule, those who judge of the question from a theoretical stand-point distrust the "adding of 'inoculation toxine' to the virus the man may already have in his system." The actual facts, however, do not justify any apprehension on this point.

In vaccination against small-pox the following is the result of a long accumulated experience.

The incubation period of the disease is 12 to 14 days; that is, a person who gets to-day contaminated with small-pox virus has 12 to 14 days free in front of him, before any symptoms of the disease may appear.

For accomplishing the protective effect of vaccination 8 days are sufficient; *i.e.*, a person to-day vaccinated requires 4 to 5 days to develop the vaccination vesicle, and another 3 to 4 days to have his system modified so as to effectively oppose an attack of the disease.

If, therefore, an individual contaminated to-day gets himself vaccinated on the same day, or on the next day, or within the next 4 or 5 days of difference in the incubation of the two processes just mentioned, not only does the vaccine "toxine" super-added to the small-pox virus not aggravate his condition, but the vaccination process overtakes the breaking out of the disease, and either averts it, or mitigates its symptoms.

Again, in the case of persons bitten by rabid dogs in India, they have several weeks before them during which they can take the P. and O. liner, reach Paris, and safely get the "attenuated virus" added to the canine one, incubating in them since the dog's bite, with results greatly opposite to their condition being by that aggravated.

With regard to the plague, the following is a summary of the occurrences observed in the Byculla House of Correction, in February 1897, on the very first occasion when accurate knowledge on the effect of the plague prophylactic was gathered.

The inoculations were applied on the 30th of January, after 9 cases, 5 fatal, had occurred in the Jail. In the forenoon of that day, before the inoculation was done, 6 further cases occurred. After the inoculation, it was found that *one* of the inoculated had already a bubo on him when inoculated; while *two* others developed buboes in the same evening, after the hour of inoculation. These three inoculated, as well as three of the six uninoculated attacked on that day, died; and these three were the only inoculated who did not show any benefit by the inoculation. The fate of the others was as follows:—

Date of occurrences.	Number of uninoculated.	Cases.	Fatal.	Number of inoculated.	Cases.	Fatal.
1897.						
23rd to 29th January, previous to the day of inoculation ...	.....	9	5	.....	...	...
30th January 1897, the day of inoculation. Forenoon, before inoculation ...	.....	6	3	.....	...	...
30th January 1897, the day of inoculation. Afternoon, after inoculation ...	.....	...	...	.....	3	3
1st day after inoculation, 31st January 1897	177	2	1	151	1	...
2nd day after inoculation, 1st February 1897	172	1	1	150	...	...
3rd day after inoculation, 2nd February 1897	173	1	1	146	...	...
5th day after inoculation, 4th February 1897	171	1	1	146	...	...
6th day after inoculation, 5th February 1897	169	2	1	146	...	...
7th day after inoculation, 6th February 1897	169	5	1	146	1	...
Total, after the day of inoculation ...	Uninoculated 172 Average daily strength.	12 cases.	6 deths.	Inoculated 147 Average daily strength.	2 cases.	...

This is the analysis of the occurrences:

As the incubation period in plague is a long one,—some 2 to 10 days,—a large proportion, if not all, of the 12 *uninoculated* prisoners, who produced plague on the very next and the six immediately following days after the 30th January, must have been in the incubation stage at the time when inoculation was being performed in the Jail; and a similar group of people incubating the disease must have been present in the *inoculated* lot also, who formed a half of the same crowd, and were subject to absolutely identical chances of infection, before and after the inoculation, as those left uninoculated. The difference in the fate of the two groups was, however, *in favour* of the one whose condition, abstractly thinking, should have been aggravated by the addition of the "attenuated toxines." In no instance of the observations collected since that first lesson was this conclusion shaken or contradicted. Whenever, therefore, there is reason to believe that a person is incubating plague, the inoculation is to be resorted to immediately, with every likelihood of that person benefiting by it; provided as

was the case with the three inoculated prisoners attacked on the day of inoculation, he has no actual plague symptoms on him as yet, or does not develop such within the next 12 or 24 hours, or, let us say, as a practical rule, within the time the inoculation fever lasts.

At the same time there is no reason either to fear that, if that person *does* develop plague within the above time, his case will be made worse as compared with the attack in an uninoculated; as there is also no indication that any beneficial effect from the inoculation will in that case be obtained.

XXII.—The facts mentioned by Captain Leumann should be recorded, and further data accumulated, in order to see whether such effects are produced constantly on patients he mentions. In considering this subject in general, it is of course to be remembered that in the inhabitants of a town comprising individuals of all ages, sexes, constitutions, taken at any given hour of the day or night, there is:

(*a*) a given number of healthy and of sickly persons who, from that hour, begin to improve in their condition;

(*b*) a given number who, again, at that very hour, contract a new ailment, or get worse in the ailment they happen to be suffering from; and

(*c*) a given number who remain in a stationary condition.

If the number of inhabitants be at all considerable, the existence of these three groups is absolutely unavoidable and certain, whether there be such a thing as the carrying out of inoculation, or not.

The question as to the real consequences of the treatment cannot therefore be solved by the fact that, after the date or hour of inoculation, it happened, as it happens after any other hour, that *some* people, healthy or sick, have been observed to get worse; others to get better; and that there was nothing to say about the remainder.

The question is whether by the act of inoculation the usual numerical proportion in these three groups has been in any way modified?—to which question there is only one alluding statement in Captain Leumann's report, in paragraph XXI, where we read that: "the general health as shown by death rate *from other causes* was better in the inoculated."

There was only one answer, and also to the same effect, in the investigation carried out in the Khoja community of Bombay, as referred to in this office report to Government of the 10th May 1898.

XXVI.—This paragraph seems to call forth the following reflections:

During the period under consideration 360 deaths have occurred in the inoculated in Hubli. If, however, they had died in the same proportion as the uninoculated, the number of deaths among them would have been 22,144. Adding the number of deaths which actually occurred in those who remained uninoculated, *viz.*, 2,395 (paragraph XXIV), it appears that, if the 47,427 inhabitants of Hubli had remained, as they did, in their town, without running away by rail or otherwise, or without camping out in a mass; and if no inoculation had been resorted to, they would have lost 24,899 souls, or a little over a half of their number. The official records show that this has actually occurred, during the present terrible outbreak, in a number of large villages, of 2,000 inhabitants and over, in the Hubli taluka and elsewhere in the Dhárwa'r District, where no inoculation was done, and no camping out was possible on account of the wet weather. Such a proportion of deaths was common during plague epidemics in former times, when the dangers that awaited a population venturing outside the walls of their town, and the absence of railways and practicable roads, made the idea of abandoning a city, or the thought of getting away from disease by temporary desertion, less easily suggested and resorted to. At present, flight and camping out thin, as a rule, the population of an attacked city far more rapidly than death is permitted to do. The inoculation has therefore served as a substitute for depopulation, as, indeed, the reduction, by flight, from some 50,000 to 47,427 inhabitants, which took place at Hubli, may be considered as absolutely insignificant when compared with what happened in other towns far less severely attacked; and it is only a pity that, owing to the very limited number of operators, the inoculation could not be carried out in a shorter time, so as to prevent a still larger proportion of deaths from occurring.

XXX.—The subject discussed in this paragraph has been considered elsewhere.

The Tables.—An excellent feature are the house-to-house investigation sheets appended in the shape of tables to Dr. Leumann's report, and which represent the result of a minute house-to-house inquiry carried out by Lieutenant H. P. Keelan of the 7th Bo. I. These sheets refer to the plague history of 69 households and to the Health Camp. It is only regrettable that Dr. Leumann has neglected to append all the 200 tables mentioned by Mr. Cappel, so as to remove any possible suggestion that there may have been in Hubli houses less effectively demonstrative. The striking information contained in these tables is the more welcome that it removes the apprehension of mistakes having possibly been admitted by any reliance on inoculation certificates alone; and that in one instance of a limited group of people, where very accurate observations could be collected, *viz.*, the employés of the South Mahratta Spinning and Weaving Company (*vide* paragraph XXVIII of Captain Leumann's Report), the percentage of attacks in once inoculated was 50 per cent. lower than in not inoculated: that is a difference markedly smaller than in the Hubli population taken as a whole. (The percentage of attacks in *twice* inoculated among the Spinning and Weaving Company's employés showed a reduction of 92·3 per cent. of death, which is much more approaching the Hubli general figures).

An investigation carried out in each house separately, with an enquiry about each member of the household, giving the names and particulars of every one inoculated and uninoculated, and the fate they have experienced during the epidemic, has an extremely convincing character, and tends to effectively remove any suggestion of possible errors. A similar effect is produced by the very minute and remarkably accurate observations on a limited group of people (under 2,000 souls) made by the authorities of the Southern Marátha Railway Company in Hubli, and summarised in Dr. Chenai's special report on the subject. (*Vide* below).

As mentioned already, it is desirable, whenever the conditions permit of it, that the whole of the facts referring to the occurrences of plague in a mixed, inoculated and uninoculated population, be first put in the shape of those house-to-house investigation sheets, which refer to each family separately. The totals showing the number of inoculated in the whole village or town, the number of uninoculated, and the cases in each of these two groups, are then calculated from these family history sheets, as has been done, for instance, in the Undhera investigation, near Baroda, by Surgeon-General Harvey and a Committee of British and Baroda officials. But when the tables are to be used for that purpose, a precaution is to be taken, which, in the present case, the tables not being intended for calculating totals, has been in a number of instances omitted. This is that members of the family inoculated *after* the occurrence of plague in their house should *not* be put in the column of inoculated, but in that of the uninoculated, the heading of the former bearing "names, sexes, and ages of the inoculated persons who were living in the house *on the date of attack*."

All the observations made above are intended to advance and further the details of the inoculation system, a problem which, I hope, will continue as long as the inoculation itself continues.

The remainder of my remarks belong to the estimate of the work gone through in Hubli during those months of plague. Captain Leumann, in paragraph XXIX of his report, gives in figures an abridged sketch of the task performed there. I believe, a real estimate of that task can be got at by a comparison with another outbreak, which I had an occasion of observing personally, and where the officers in charge had put before themselves the problem, and accomplished it successfully, of grappling with the epidemic in as thorough and complete a way as the Hubli workers succeded to do.

In September 1897 the plague broke out in Khankal of the Hardwar Municipal Union in the North-West Provinces of India. The population of that place comprises, in ordinary times, some 5,000 souls. Before any plague

measures were begun more than a quarter fled, and the initial number of people to be dealt with was below 3,500. This number, however, was continually and gradually reduced further, down to a few hundreds, as all those who completed the requisite period of detention, and underwent the disinfection process, were permitted to leave the locality, but not to return to Khankal (until a month had elapsed after the complete cessation of the epidemic). The authorities were determined that the general measures prescribed for combatting plague be punctually carried out; that is, if the specialists say that, for preventing transmission of plague, infected clothing must be disinfected, they wanted all infected clothing to be actually disinfected; and if it is believed that a man who had come in contact with plague may have latent germs in him without showing disease for 10 days, they wanted that such a man be really kept apart and observed for 10 days before allowed to mix with healthy people; and so on. For doing this accurately, a staff was found necessary consisting of—

3 Officers of the Indian Civil Service;
4 Commissioned Medical Officers, of the Indian Medical Service;
6 Native District Officers;
24 Subordinate Medical Officers;
1 Female Medical Assistant;
280 Disinfectors;
150 Police, including 40 Mounted; and
36 Chowkidárs.

Total: 7 European Commissioned Officers;
31 Native Civil and Medical Officers;
and 466 rank and file, of whom three-fifths Disinfectors.

The operations have cost, without counting the pay of the Government servants 40,000 Rs. (*vide* Captain J. Chaytor White, I. M. S., Deputy Sanitary Commissioner North-West Provinces and Oudh's account of the "Bubonic Plague at Hardwar." Allahabad, 1898).

The population with which Mr. Cappel and Captain Leumann and their fellow-workers had to deal with in Hubli was some 20 times larger than that of Khankal; and the difficulties in dealing with an epidemic, as every one engaged in plague work now knows, increase in a proportion far greater than that of the population. In any case, one is safe to estimate that Mr. Cappel and Dr. Leumann and their few co-workers enumerated in Mr. Cappel's note, who decided to add inoculation on their programme as a means of combatting the plague, were working upon, and carried out successfully, a task for which, in another part of India, for applying thoroughly a plague programme without inoculation, 60 Civil Officers, 80 Commissioned Medical Officers, 120 Native District Officers, 480 Subordinate Medical Officers, 20 Female Medical Assistants, 5,600 Disinfecting Coolies and 3,720 Police were found to be necessary; while Mr. Cappel should have had at his disposal, for the necessary operations, and in addition to the pay of all the Government servants, proportionately eight lákhs of rupees, instead of the few thousands which he has actually spent.

I hope the reflections suggested by these figures will not only present in a true light to Government and to the public the amount of effort made at Hubli, but will also remove from the mind of the Hubli workers themselves the feeling of surprise which they must have experienced when they found themselves confronted with an unexpected and overwhelming amount of labour.

But while the task itself and the amount of work entailed by it permit of some approximate estimation, it is certain that the effect which the Hubli operations produced in India, and the assistance they have rendered to the problem of combatting disease by new, easier, more humane methods, are perfectly inestimable. . . .

I have the honour to be,
Sir,
Your most obedient Servant,
W. M. HAFFKINE

No. 1284 OF 1899.

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

TO
THE PLAGUE COMMISSIONER,
Bombay.

Plague Research Laboratory, Mazgaon,
Bombay, 26th January 1899.

SIR,

In continuation of my No. 1283 of to-day, accompanying Captain Leumann's Report on the inoculations at Hubli, I have the honour to forward a Report, with supplements, received from Dr. Chenai, Medical Officer of the Southern Marátha Railway, who was doing inoculations at Hubli on behalf of that Company (*vide* Mr. Cappel's reference in his notes on the inoculations in Hubli).

2. The report refers to the observations on the incidence of plague among the inoculated and uninoculated employés of the Company who were living in the Railway area, Hubli, and as far as their domicile and general conditions of life went, were equally exposed to the danger of plague infection.

3. I have ascertained from Mr. Cappel, then Collector of Dhárwár, that the occupants of the Railway chawls and yard were under close daily inspection throughout, and that the accuracy of the record is beyond dispute, as the chawls and other Railway premises are well apart from the town, and the occupants are all under the immediate control of the Railway authorities. They were inspected daily by English officers of the Railway, working as a Committee, with Dr. Chenai as Medical Officer, and subject to the general control of the Chief Superintendent (who represented the Collector) of the plague operations in the town.

4. On account of these circumstances, and of the fact that the incidence of plague, as well as the data about inoculation or non-inoculation, could thus be ascertained with a perfect degree of accuracy, the results observed on this group of people have a peculiar importance. It will be seen that they correspond closely to the observations made on the Southern Marátha Spinning and Weaving Company's employés, and on the Hubli population in general.

5. As stated in Dr. Chenai's No. 2633, dated 21st—22nd November 1898, during the time under observation a few outsiders were admitted to the Railway yard; and of the number of plague attacks which took place, two were among these outsiders (Nos. 45 and 48). As the persons concerned (both uninoculated) may have contracted the disease outside the Railway yard, their cases are to be excluded from the comparison of attacks in inoculated and uninoculated.

6. The following is the analysis of the *data* embodied in Dr. Chenai's Report:—

After the introduction of inoculation plague occurred in the Railway yard on 28 different dates, between the 11th June and 6th October 1898, *viz.*, on the 11th and 29th June, 5th, 9th, 11th, 13th, 14th, 19th, 20th, 21st, 22nd and 23rd July, 4th, 5th, 6th, 9th, 10th, 12th, 21st, 22nd, 23rd, 24th, 25th, 26th and 30th August, 21st September and 1st and 6th October.

On the first of these dates, the 11th June, there were in the yard:
1,794 uninoculated,—41 inoculated once,—and no inoculated twice.
On the second date, the 29th June, there were:
1,243 uninoculated,—235 inoculated once,—439 inoculated twice.
On the third date, the 5th July, there were:
1,063 uninoculated,—385 inoculated once,—471 inoculated twice; and so on.

The number of inoculated twice was gradually increasing, as the people were coming forward for inoculation, and the number of uninoculated was correspondingly decreasing.

6. *The inoculated once* were therefore present during 28 dates when plague occurred. Their number was the lowest on the first date (the 11th June 1898) (41), and reached the highest on the third (5th July 1898) (385). Their average daily strength throughout the 28 dates of plague was 271.

The daily strength of the uninoculated decreased from 1,794 (on the first date) to 31 (on the last, the 6th October 1898), and was on the average, throughout the 28 dates, 785.

The incidence of plague in these two groups was as follows :—

The 785 uninoculated had 35 cases and 21 deaths.

The 271 inoculated once had 5 cases and 1 death.

The percentage of protection in the once inoculated is obtained from the following considerations :—

If the inoculated had suffered in the same proportion as the uninoculated, they should have had 12 cases and 7 deaths, instead of which they had 5 and 1 respectively.

The number of cases appeared, thus, reduced in the once inoculated by 58·33 per cent., and the number of deaths by 85·71 per cent.

7. *The inoculated twice* were present only on 27 dates (there having been no inoculated twice on the first date, the 11th June), and their daily strength gradually increased from 439 (on the second date of plague, the 29th June 1898) to 1,713 (the last), and, was, on the average, throughout the 27 dates, 972.

The daily strength of the uninoculated present on those 27 dates decreased from 1,243 (on the second date of plague) to 31 (on the last), and was on the average 748.

These 748 uninoculated had during the period in question, 33 cases and 19 deaths, while the 972 inoculated twice had 6 cases and 1 death.

The percentage of protection in the twice inoculated was, therefore, as follows :—

If the inoculated had suffered in the same proportion as the uninoculated, they should have had 43 cases and 25 deaths ; instead of which they had 6 and 1 respectively. The number of cases and deaths appeared, therefore, reduced in the twice-inoculated by 86·05 and 96 per cent. respectively.

8. As regards the proportion of deaths to attacks, this was :

In the uninoculated—60 per cent. ;

In the inoculated once—20 per cent. ; and

In the inoculated twice—16·67 per cent.

9. This result observed in a group of people where, as mentioned above, the information about every individual could be obtained with perfect exactitude ; together with the observations made under similar conditions among the employés of the Southern Mahrátta Spinning and Weaving Company, and with the testimony of the house-to-house enquiry embodied in Lieutenant Keelan's investigation sheets, as appended to Captain Leumann's General Report, come as a weighty and extremely important corroboration of the *data* collected with regard to the Hubli population as a whole.

I have the honour to be,

Sir,

Your most obedient Servant,

W. M. HAFFKINE.

No. 2405.

To

PROFESSOR HAFFKINE, C.I.E.,
Plague Research Laboratory, Bombay.

SOUTHERN MAHRATTA RAILWAY COMPANY,
Medical Officer's Office :
Hubli, 26th October 1898.

SIR,

With reference to your letter of 8th instant, I have the honour to enclose herewith a detailed statement up to date of plague attacks and deaths amongst the persons living within the Railway jurisdiction at Hubli, from which it will be seen that the result of inoculation has been very satisfactory, and it has proved to be the best means, ever known, of protection from plague. It may be said now that inoculation is the only practicable alternative to save people from infection, as it has done all and more than what was expected of it during the recent epidemic at Hubli. From the statistics shown in the accompanying statement it is remarkable to note the virulence of the disease that existed among the uninoculated. Inoculation has resulted in preventing the disease from spreading ; and though few inoculated persons caught infection, the death-rate was remarkably low among the once inoculated, and still less among the twice inoculated in comparision to that among the uninoculated.

There are about 2,000 people living in the Railway area, all of whom are now protected by inoculation, and it is satisfactory to note that hardly a case occurs among them ; while those that occur are of a mild nature that have all chances of recovery.

I may here mention that the inoculation system has won so much the public confidence on account of the good it has done, that people are coming daily in numbers from all sides, and crowding at the Hospital, begging to be inoculated ; whereas at the introduction of the inoculation system in the beginning, it was with the utmost difficulty that I could persuade the men to get themselves inoculated.

I have the honour to be,

Sir,

Your most obedient Servant,

E. S. CHENAI, Surgeon,
Medical Officer, Southern Mahratta Railway.

MEDICAL DEPARTMENT, SOUTHERN MAHRATTA RAILWAY.

Statement showing the number of Plague Cases that occurred in the Railway-yard, Hubli, from the 11th June 1898 to 9th October 1898.

No.	Names.	Age.	Sex.	Caste.	Occupation.	Date of attack.	Result.	Conditions as to inoculation.	Remarks. Strength of inoculated and uninoculated groups on the corresponding days. Total of uninoculated.	Total of inoculated once.	Total of inoculated twice.
1	Ramu Banu	10	Male ...	Hindu ...	Pointsman's son ...	11th June 1898...	Died ...	Not ninoculated.	1,794	41	...
2	Krishnavani Bashani Naidu .	5	Female .	Do ...	Parcel Clerk's daughter.	Do. ...	Do. ...	Do. ...			
3	Emiclin Bell...	55	„ ...	Christian ...	Guard's mother-in-law...	29th Do. ...	Discharged cured.	Do. ...	1,243	235	439
4	Sayannah Maduray	45	Male ...	Hindu ...	Mrs. Wood's ayah's husband.	Do. ...	Died ...	Do. ...			
5	Jyamwa Krishna	35	Female .	Do. ...	Mr. Slade's servant's wife.	5th July 1898...	Do. ...	Do. ...	1,063	385	471
6	Amardew Kishna	4	„ ...	Do. ...	Mr. Slade's servant's child.	Do. ...	Do. ...	Do. ...			
7	Mohodinsab Badansab ...	50	Male ...	Mahomedan .	Mr. Carpenter's Mali ...	9th Do. ...	Do. ...	Do. ...	1,063	365	552
8	Nilamah Bahanna	70	Female .	Hindu ...	Sweeper's mother ...	11th Do. ...	Do. ...	Do. ...	1,129	365	552
9	Yellama Allibax	16	„ ...	Do. ...	Mr. Stanlay's cook's daughter.	13th Do. ...	Do. ...	Do. ...	1,125	337	597
10	Nagama Narayanswamy ...	1½	„ ...	Do. ...	Porter's child	Do. ...	Do. ...	Do. ...			
11	Ercallamah Muttapa ...	4	„ ...	Do. ...	Sweeper's child... ...	14th Do. ...	Do. ...	Do. ...	1,120	335	603
12	Mannajajrama Mathubello ...	8	„ ...	Do. ...	Clerk's daughter ...	23rd Do. ...	Discharged cured.	Do. ...	Strength	*Vide*	below.
13	Mahamed Hussein	40	Male ...	Mahomedan .	Fitter	21st Do. ...	Died ...	Do. ...	Strength	*Vide*	below.
14	Gangu Rama...	35	Female .	Hindu ...	Cooly's wife	19th Do. ...	Do. ...	Do. ...	880	344	821
15	Punajah Durgah	10	Male ...	Do. ...	Butler's child	Do. ...	Discharged cured.	Do. ...			
16	Krishna Laxman	36	„ ...	Do. ...	Mali	21st Do. ...	Do. ...	Once inoculated.	881	344	821
17	Donaswamy Viraswamy ...	2½	„ ...	Do. ...	Holder's child	20th Do. ...	Died ...	Not inoculated.	880	344	821
18	Baburao Marutirao	3½	„ ...	Do. ...	H. Assistant's son ...	23rd Do. ...	Do. ...	Do. ...	886	344	821
19	Govind Damodar	26	„ ...	Do. ...	Police Constable ...	20th Do. ...	Do. ...	Do. ...	Strength	*Vide*	above.
20	Krishnaswamy Iyer... ...	30	„ ...	Do. ...	Gate Clerk	21st Do. ...	Do. ...	Do. ...	Strength	*Vide*	above.
21	Tumbi Mathuvelu Pillay ...	1	„ ...	Do. ...	Clerk's child	22nd Do. ...	Do. ...	Do. ...	882	344	821
22	V. Swamy Chetty	52	„ ...	Do. ...	Station Master	5th Aug. 1898...	Do. ...	Do. ...	Strength	*Vide*	below.
23	Mr. D. Fobler	22	„ ...	Christian ...	Store Clerk	4th Do. ...	Discharged cured.	Do. ...			
24	„ R. De'Souza	30	„ ...	Do. ...	Erector	Do. ...	Do. ...	Do. ...	862	297	880
25	„ F. X. Mantano	34	„ ...	Do. ...	Telegraph Instructor ...	Do. ...	Do. ...	Do. ...			
26	Miss G. White	13	Female .	Do. ...	Chowkidárs' Inspector's daughter.	5th Do. ...	Do. ...	Do. ...	827	297	880
27	Mrs. E. Wylde	30	„ ...	East Indian .	Gas Inspector's wife ...	6th Do. ...	Do. ...	Do. ...	827	297	880
28	Mr. J. Brown	22	Male ...	Christian ...	Fitter	9th Aug. 1898...	Do. ...	Do. ...	834	297	880
29	Mrs. Wood	26	Female .	European ...	Foreman's wife... ...	Do. ...	Do. ...	Do. ...			
30	Hirjibhoy Jewaji Chenai ...	18	Male ..	Pársee ...	Fitter	10th Do. ...	Do. ...	Once inoculated.	831	215	965
31	Baby D'Moss	1½	Female .	East Indian .	Guard's child	12th Do. ...	Do. ...	Not inoculated.	829	215	968
32	Clara Wood	7	„ ...	European ...	Foreman's child ...	Do. ...	Do. ...	Do. ...			
33	Miss Paual	19	„ ...	East Indian .	Fitter Morrison's sister-in-law.	22nd Do. ...	Discharged 8th September 1898.	Do. ...	618	234	1,146
34	Bhika Laxuman	5 months	Male ...	Hindu ..	Butler's son	21st Do. ...	Died ...	Do. ...	619	245	1,132
35	Sakoo Gopal	28	Female .	Do. ...	Butler's wife	Do. ...	Discharged cured.	Do. ...			
36	Laxman Tukaram	10	Male ...	Do. ..	Mr. Sergeant's dog-boy .	Do. ...	Do. ...	Twice inoculated.			
37	Kondi Jeriam	12	Female .	Do. ..	Mr. Sergeant's Syce's daughter.	Do. ...	Do. ...	Do. ...			
38	Sundra Gopal	22	„ ...	Do. ...	Trollyman's wife ...	23rd Do. ...	Do. ...	Do. ...	615	151	1,231
39	Mariama	36	„ ...	Mahomedan .	Assistant Station Master's servant.	24th Do. ...	Do. ...	Do. ...	520	224	1,253
40	Sundra Davisingh	25	„ ...	Rájput ...	Locomotive Superintendent's Syce's wife.	25th Do. ...	Died ...	Not inoculated.	516	210	1,272
41	Anny Cowan...	11	„ ...	Eurasian ...	Police Inspector's daughter.	26th Do. ...	Discharged 7th September 1898.	Once inoculated.	418	287	1,277
42	Chowri Appa	16	Male ...	Christian ...	Cooly	Do. ...	Died ...	Twice inoculated.			

No.	Names.	Age.	Sex.	Caste.	Occupation.	Date of attack.	Result.	Conditions as to inoculation.	Remarks. Strength of inoculated and uninoculated groups on the corresponding days. Total of uninoculated.	Total of inoculated once.	Total of inoculated twice.
43	Mrs. Lonesi Victoria Scott	30	Female	European ...	Serg. Inspector's wife...	30th Aug. ...	Died, 4th September 1898 (7-48 P.M.)	Once inoculated.	333	292	1,354
44	Hira Laxman	35	Female	Hindu ...		1st Sept. 1898...	Discharged cured.	Do. ...	261	342	1,375
45	Wobgah (not a permanent resident of the yard).	35	Male ...	Hindu ...	Sweeper...	21st Do. ...	Died, 21st Sept. 1898.	Not inoculated.	102	64	1,697
46	Antoniama Margasein ...	30	Female	Native Christian.	Driver Thompson's servant.	1st Oct. 1898 ...	Died, 3rd October 1898.	Do. ...	91	66	1,709
47	Laxman Bapu	35	Male ...	Hindu ...	Hammerman	6th Do. ...	Discharged cured.	Twice inoculated.	31	134	1,713
48	Harukasami Antoni (not a permanent resident of the yard).	21	Male ...	Native Christian.	Servant-cook of Driver Thompson.	9th Do. ...	Died, 10th Oct. 1898.	Not inoculated.	65	84	1,723

	Attacks.	Deaths.	Cured.	Death Ratio.
Twice inoculated ..	6	1	5	16·67 per cent.
Not inoculated ..	37	23	14	62·16 per cent.
Once inoculated ...	5	1	4	20· per cent.
Total ...	48	25	23	

SUPPLEMENT I.

No. 2550.

To

PROFESSOR HAFFKINE, C.I.E.,
Plague Research Laboratory, Bombay.

SOUTHERN MAHRATTA RAILWAY COMPANY:
Medical Officer's Office;
Hubli, 7th November 1898.

SIR,

With reference to your No. 807 of 31st October 1898, I have the honour to enclose herewith a table showing the number of inoculated and uninoculated persons living in the Railway yard, Hubli, on each date on which plague cases occurred.

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

E. S. CHENAI, Surgeon,
Medical Officer, Southern Mahratta Railway.

SOUTHERN MAHRATTA RAILWAY, MEDICAL DEPARTMENT.

(HUBLI RAILWAY YARD.)

Table showing particulars of dates on which attacks of plague occurred, and the number of inoculated and uninoculated persons living in the Railway yard, Hubli, on the respective dates.

Month.	Date.	Number of attacks.	Number of persons inoculated (present on the date).		Number of persons uninoculated (present on the date).	Total number of persons, or census on the date.
			Twice.	Once.		
1898.						
June ...	11	2	Nil.	41	1,794	1,835
" ...	29	2	235	439	1,243	1,917
July ...	5	2	471	385	1,063	1,919
" ...	9	1	552	365	1,063	1,980
" ...	11	1	552	365	1,129	2,046
" ...	13	2	597	337	1,125	2,059
" ...	14	1	603	335	1,120	2,058
" ...	19	2	821	344	880	2,045
" ...	20	2	821	344	880	2,045
" ...	21	3	821	344	881	2,046
" ...	22	1	821	344	882	2,047
" ...	23	2	821	344	886	2,051
August ...	4	3	880	297	862	2,039
" ...	5	2	880	297	827	2,004
" ...	6	1	880	297	827	2,004
" ...	9	2	880	297	834	2,011
" ...	10	1	965	215	831	2,011
" ...	12	2	968	215	829	2,012
" ...	21	4	1,132	245	619	1,996
" ...	22	1	1,146	234	618	1,998
" ...	23	1	1,231	151	615	1,997
" ...	24	1	1,253	224	520	1,997
" ...	25	1	1,272	210	516	1,998
" ...	26	2	1,277	287	418	1,982
" ...	30	1	1,354	292	333	1,979
September ...	1	2	1,375	342	261	1,978
" ...	21	1	1,697	64	102	1,863
October ...	6	1	1,713	134	31	1,878
" ...	9	1	1,723	84	65	1,872
Total cases ...	...	48				

Hubli, 7th November 1898.

E. S. CHENAI, Surgeon,
Medical Officer, Southern Mahratta Railway.

SUPPLEMENT II.

SOUTHERN MAHRATTA RAILWAY COMPANY:

Medical Officer's Office,
Hubli, 21st November 1898.

No. 2633.

To

PROFESSOR HAFFKINE, C.I.E.,
Plague Research Laboratory, Bombay.

SIR,

With reference to your letter dated 12th instant, I have the honour to inform you that my original report is correct. The two plague cases occurred on two different dates: one on 1st September 1898, and one on 1st October 1898. The strength of the population on the latter date was as follows:—Number of twice inoculated 1,709, of once inoculated 66, of uninoculated 91, and total 1,866.

2. Out of the 48 cases, two were in outsiders: one, in sweeper Wobga, occurred on 21st September 1898, and the other in Herraksami Antoni on 9th October 1898. All other cases occurred amongst the permanent residents of the Railway yard. I have not kept separate records for new-comers and permanent residents; and I am sorry I am unable to give the figures of the strength for each particular date of the only 1,835 people who lived in the Railway yard on 11th June 1898 and after the date. I may, however, mention here that during the epidemic hardly any new person was allowed to stay in the Railway area unless he got himself inoculated twice.

As regards the concluding paragraph of your letter quoted above, I beg to state that no table therein shown has been maintained, as I did not think it would be called for.

In conclusion, I beg to thank you for your kind assurance to supply me with prophylactic serum when required.

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

E. S. CHENAI, Surgeon,
Medical Officer, S. M. Railway.

B 1155—15

SOUTHERN MAHRATTA RAILWAY COMPANY:

Medical Officer's Office,
Hubli, 3rd July 1898.

No. 1416.

Statement showing the number of persons inoculated in the Railway Hospital, Hubli, up to 1st July 1898.

Date.	1st time.	2nd time.	Total number inoculated.	Remarks.
1898 June 1				
„ 11	10	*Nil*	10	
„ 12	41	...	41	
„ 13	156	6	162	
„ 15	63	*Nil*	63	
„ 17	24	83	107	
„ 18	61	84	145	
„ 19	92	34	126	
„ 20	38	35	73	
„ 21	36	27	63	
„ 22	22	26	48	
„ 24	30	30	60	
„ 26	49	43	92	
„ 29	161	34	195	
„ 30	94	62	156	
1898 „ July 1	59	41	100	
	44	19	63	
Grand Total ..	980	524	1,504	

Forwarded to Professor Haffkine, C.I.E., Bombay, for information.

E. S. CHENAI, Surgeon,
Medical Officer, S. M. Railway.

SOUTHERN MAHRATTA RAILWAY COMPANY:

Medical Officer's Office,
Hubli, 25th August 1898.

No. 1834.

**Statement showing the number of persons inoculated at the Railway Hospital, Hubli, from 18th to 24th August 1898.*

Date.	Number once inoculated.	Number twice inoculated.	Remarks.
Total number previously reported (up to 17th August 1898)	3,311	2,139	
Up to 24th August 1898	630	608	
Grand Total ...	3,941	2,747	

* Statement showing full particulars will follow.

Forwarded to Professor Haffkine, C.I.E., Bombay, for information.

E. S. CHENAI, Surgeon,
Medical Officer, S. M. Railway.

MEDICAL DEPARTMENT, SOUTHERN MAHRATTA RAILWAY.

Statement of persons inoculated twice at Hubli up to 21st June 1898 by Dr. E. S. Chenai, Medical Officer, Southern Mahratta Railway.

Number.	Names.	Occupation.	Residence.	Remarks.
1	Mr. Ratanji Sorabji	Fitter	Gunesh Peit.	
2	„ Jijibhai Ratonji	Do.	Do.	
3	„ Muncherji Hormasji	Do.	Do.	
4	„ Bamonji Jamsetji	Nil	Do.	
5	„ Merwanji Jamsetji	Do.	Loco. M. Chall.	
6	Rama Dhondi	Do.	Do.	
7	Bapuji Sersolia	Do.	Do.	
8	Narayen Dhondewa	Carpenter ...	Do.	
9	Rama Sawala	Nil	Do.	
10	Bhagoba Govind	Muccadum ...	Do.	
11	Shamalal Mehanlal	Carpenter ...	Do.	
12	Nunga Khushal	Do. ...	Do.	
13	Ramprased Kulian	Do. ...	Do.	
14	Bannasing Ramsing	Do. ...	Do.	
15	Sarjirao Krishnaji	Apprentice ...	Do.	
16	Bapu Banasing	Do. ...	Do.	
17	Rawsa Petha	Do. ...	Do.	
18	Sukharam Bapuji	Do. ...	Do.	
19	Feru Bisonsing	Do. ...	Do.	
20	Budhsagor Bhoswaniprased... ...	Do. ...	Do.	
21	Puran Poparam	Carpenter ...	Do.	
22	Imarta Pemu...	Do. ...	Do.	
23	Ghisa Esar	Fitter ...	Do.	
24	Jagan Hetrone	Carpenter ...	Do.	
25	Mayasing Mangotsing	Do. ...	Do.	
26	Malkurjun Lengapah	Do. ...	Do.	
27	Budha Lekroj	Do. ...	Do.	
28	Gundapah Mallupa	Do. ...	Do.	
29	Narhari Ramaji	Nil ...	Do.	
30	Nandkisor Donga	Carpenter ...	Do.	
31	Har Narayen Rodharao	Do. ...	Do.	
32	Gungaram Jewansing	Do. ...	Do.	
33	Devisai Kaniram	Do. ...	Do.	
34	Chiter Maniram	Do. ...	Do.	
35	Manglia Nandu	Cooly ...	Do.	
36	Gopinath Hasre	Trimmer ...	Do.	
37	Umrus Girbal	Carpenter ...	Do.	
38	Anandrav Malkajun	Nil ...	Do.	
39	Shovani Rudu	Nil ...	Do.	
40	Hanmant Bapoji	Apprentice Boy...	Do.	
41	Narsing Ramadew	Carpenter ...	Do.	
42	Ruteram Shivalal	Do. ...	Do.	
43	Ramalal Ramsook	Do. ...	Do.	
44	Chaturboy Bhalwant	Fitter ...	Do.	
45	Khabram Ramsoje	Carpenter ...	Do.	
46	Sharanappa Shuranny	Cooly ...	Do.	
47	Temina Tamam	Do. ...	Do.	
48	Baijappa Shemapah	Do. ...	Do.	
49	Rodaram Bemaram	Carpenter ...	Do.	
50	Dholaram Bemaram	Do. ...	Do.	
51	Yemone Gopinath	Nil ...	Do.	
52	Nathia Gopinath	Do. ...		
53	Ghissa Krishna	Do. ...		
54	Mothi Gopinath	Do. ...	Loco. M. Chall.	
55	Yacub Benjamin	Carpenter ...	Do.	
56	Raja Bapuji	Nil ...	Do.	
57	Bapu Niloba	Hammerman ...	Do.	
58	Hardeo Bishnu	Carpenter ...	Do.	
59	Kasam Budhan	Nil ...	Do.	
60	Juraba Budhan	Do. ...	Do.	
61	Abu Kandu	Porter ...	Porters' Chall.	
62	Chinapah Challa	Do. ...	Do.	

Number.	Names.	Occupation.	Residence.	Remarks.
63	Mary Munia	Porter ...	Porters' Chall.	
64	Armogam Muttupa	Do. ...	Do.	
65	Landonima Veerswami	Nil ...	Do.	
66	Nunamah Kuloki	Do. ...	Do.	
67	Tai Kandan	Do. ...	Do.	
68	Dewany Mary	Do. ...	Do.	
69	Munsing Narayaswamy	Do. ...	Do.	
70	Tellama Muthu	Do. ...	Do.	
71	Asabi Rhynoo	Do. ...	Do.	
72	Abdool Rajack	Do. ...	Do.	
73	Reeva Manchand	Blacksmith ...	Loco. M. Chall.	
74	Gasper	Cook ...	Running Room.	
75	Samsoordeen Abdool Rajack ...	.....	Porters' Chall.	
76	Mudakrishna Naeh	Bolder ...	Honde H.	
77	Govind Sittappa	Apprentice ...	L. M. C.	
78	Rangaya Raju	Boilermaker ...	Do.	
79	Swamy Veerappa	Rivetter ...	Do.	
80	Murguesh Veeraswamy	Bolder ...	Staffer.	
81	Krishnaswami Ramaswami	Rivetter ...	L. M. C.	
82	Ramchandra Rajunag	Do. ...	L. M. C.	
83	Pitwamy Adekela	Boilermaker ...	Do.	
84	Virki Ragu Subrayu	Do. ...	Do.	
85	Govindswami Swamy Nadarpelly ...	Apprentice ...	Do.	
86	Govindswamy Sidacubarampelly ...	Boilermaker ...	Do.	
87	Fakeera Arunachalam P.	Nil ...	Do.	
88	Antoni Mary	Fitter C. S. ...	Do.	
89	C. Bernard	Painter ...	Do.	
90	Devka Kanu	R. Bungalow ...	Do.	
91	Dashbroth T....	Do. ...	Do.	
92	Wahamoh Walon	Porter's wife ...	Porters' Chall.	
93	Thayamah Abboo	Do. ...	Do.	
94	Chory	Do. ...	Do.	
95	Mareemitho Veroswamy	No, child ...	Do.	
96	Menachy Verswami	No, wife ...	Do.	
97	Valiamoh Meenejeen...	Do. ...	Do.	
98	Kuppee Kurajun	Do. ...	Do.	
99	Menachy Meerajan	Do. ...	Do.	
100	Jaganathan Abbu	Child ...	Do.	
101	Murejejamoh Cema Mary	Do. ...	Do.	
102	Cuppooswamy	Boiler shop maker.	Near the Hond.	
103	T. R. Narayanswami Naidu... ...	Do. ...	Do.	
104	Mumswami Rajoo	Do. ...	Do.	
105	Govind Rajalu Cupuswamy	Do. ...	Do.	
106	Mahamoh Menia	Do. ...	Do.	
107	Mr. F. Dorabji	E. Driver ...	Drivers' Block.	
108	Tanoppoo	Assistant Station Master's servant.	Staff quarters.	
109	Hanumakali	Nil ...	Do.	
110	A. Genesh Thambu	Do. ...	Do.	
111	Benjamin Solomon	Carpenter ...	L. M. C.	
112	Sholam Benjamin	Nil. ...	Do.	
113	Gopal Vittoba	Turner ...	Do.	
114	Kahasappa Pirappa	Cooly ...	Kaspur.	
115	Krishna Bappurao	Do. ...	L. M. C.	
116	Moses Solomon	Carpenter ...	Do.	
117	Sillimon Ibraham	Fitter ...	Do.	
118	Elezabeth Moses	Nil ...	Do.	
119	Silimon Habim	Carpenter ...	Do.	
120	Yasoof Salmon	Do. ...	Do.	
121	Ezikel Benjamin	Nil ...	Do.	
122	Abdulakha Coderkhan	Boilermaker ...	Do.	
123	Moses Solomon	Carpenter ...	Do.	
124	Simabhai Haeni	Nil ...	Do.	
125	Shunker Dinker	S. Inspector ...	Do.	
126	Simon Haeni	Nil ...	Do.	
127	Haeni Solomon	Carpenter. ...	Do.	
128	P. Dias	Nil ...	Do.	
129	Pandu Govind	Turner ...	Do.	

Number.	Names.	Occupation.	Residence.	Remarks.
130	Baishanker Ranchod	Coppersmith ...	L. M. C.	
131	Chintamon Rhagunath	S. Fitter ...	Do.	
132	Dushrath Rama	Fitter ...	Do.	
133	Julta Issor	Carpenter ...	Do.	
134	Bapuji Krishnaji	Hammerer ...	Do.	
135	Rama Dashrath	Nil ...	Do.	
136	Shodmogan Durgaji	D. Clerk ...	Do.	
137	Saularam Ganu	Nil ...	Do.	
138	Anundro Luximon	Fitter ...	Do.	
139	Ballu Erappah	Do. ...	Do.	
140	Narayen Gopalla	Cooly ...	Do.	
141	Tukaram Pandu	Driver B. S. ...	Do.	
142	Dakhe Bai Solomon	Nil ...	Do.	
143	Ranju Rama	Do. ...	Do.	
144	Jalaja Balu	Do. ...	Do.	
145	Ibrahim Benjamin	Carpenter ..	Do.	
146	Hunuramah Esareapah	Sweeper ...	Sweepers' quarters.	
147	Tookaram Bapooji	Nil ...	L. M. C.	
148	Yemonubhai Bapuji	Do. ...	Do.	
149	Ragu Bai Krishnaji	Do. ...	Do.	
150	Venkatachalam Govind P.	Boiler maker ...	Do.	
151	Shanker Dusrath	Nil ...	Do.	
152	Devuji Krishna	Rivetter ...	Do.	
153	Ameer Mahomed Hooseen	Nil ...	Do.	
154	Sutya Narayen Muto	B. smith ...	Do.	
155	Rhaku Moiden Alliah	Nil ...	Do.	
156	Meranda Subonda	Chaukidar ...	Do.	
157	Fatoo Mahomed Hossein	Nil ...	Do.	
158	Chanba	M. Shop ...	Do.	
159	Alla Bokaseh Chor	Nil ...	Do.	
160	Krishnaram Fatechand	Carpenter ...	Do.	
161	Kasiram Sewaji	Do. ...	Do.	
162	Allysaib Mahomed	Cooly ...	Do.	
163	Kallon Thakur Prasad	Contractor ...	Do.	
164	Nagamah Ballu	Nil ...	Do.	
165	Peeramoh Ballu	Nil ...	Do.	
166	Jivansing Shersing	Nil ...	Do.	
167	Hoosseen bin Mahomed	Porter ...	Porters' Line.	
168	Raja Munia	Nil ...	Do.	
169	Kupuswami Veeraswamy	Do. ...	Do.	
170	Memamoh Amagen	Do. ...	Do.	
171	Vahamab Veeraswamy	Porter ...	Do.	
172	Kandon Mutom	Nil ...	Do.	
173	Armogaw Munia	Do. ...	Do.	
174	Padvota Chemmany	Do. ...	Do.	
175	Permal Abu	Do. ..	Do.	
176	Chemaswamy Konoil	Sweeper ...	Do.	
177	Durge Naga	Nil ...	Do.	
178	Munemoh Venkatom	Do. ...		
179	Kishnaswamy Nurgam	Do. ...	Ganesh Peit.	
180	Cheina Rangappa	Do. ...	Shanker Rao's Chall.	
181	Santaram Murthi Ratonam	Do. ...	Do.	
182	Harmathegam Ratum	Do. ...	Do.	
183	Kalandyavalu do.	Do. ...	Do.	
184	Papamah Changalvaroji	Do. ...	Do.	
185	Tavarinayagam Changalvaropa ...	Do. ...	Do.	
186	Raturmah do.	Do. ...	Do.	
187	Saloo Bai Bapoo Row	Do. ...	Do.	
188	Doraswami Varatharojolu	Do. ...	Do.	
189	Panamony do.	Do. ...	Do.	
190	Rasul Mastonsaib	Do. ...	Do.	
191	Manikam Subhaya	Do. ...	Do.	
192	Cheralan do.	Do. ...	Do.	
193	Papamah do.	Do. ...		
194	Bapu Rao Moro Hari Rao	Hammerman ...	Loco. M. Chall.	
195	Bhimah Ranga	Nil ...	Kasápur.	
196	Peer Ahmed Mahomedsaib			

No.	Names.	Occupation.	Residence.	Remarks.
197	Daniel Arricum	Butler ...	Kasápur.	
198	Ariksami Pillay	Driver ...	Ry. L. M. C.	
199	Sakinabu Anurkha	Nil ...	Do.	
200	Joseph Domingo Noronha	Do. ...	Do.	
201	Krishnabai Balloo	Do. ...	Do.	
202	Setabbai Balloo	Do. ...	Do.	
203	Soganatham Ayaswamy	Guard ...	Do.	
204	Cawasji Dorabji	Fitter ...	Do.	
205	Jiwanji Dadabhai	Turner ...	Do.	
206	Jeejibhai Dadabhai	Nil ...	Do.	
207	Bhicaji Cawasji	Fitter ...	Do.	
208	Foyozalli Sabdully	Do. ...	Do.	
209	Satwa Kushuba	Butler ...	Do.	
210	Thaju Govindamchelly	Nil ...	Do.	
211	Thulsibai Bhagavoopa	Do. ...	Do.	
212	Mangolbai Bapooji	Do. ...	Do.	
213	Suganthabai Santhoo	Do. ...	Do.	
214	Mucktabai Anantraw	Do. ...	Do.	
215	Jai Rama	Do. ...	Do.	
216	Davamah Bovani	Do. ...	Do.	
217	Mahadoo	Do. ...	Do.	
218	Baloo Devapi	Do. ...	Do.	
219	Joya Basappa	Do. ...	Do.	
220	Ragamah Babanah	Do. ...	Do.	
221	Shundrobai Shunhiram	Do ...	Do.	
222	Ababayu do.	Do. ...	Do.	
223	Hajumah S. Hossein	Do. ...	L. M. C.	
224	Parnathan Bogi	Do. ...	Do.	
225	Mukta Mahadu	Do. ...	Do.	
226	Ammarthon Anton	Do. ...	Do.	
227	Rasul Kamal	Servant ...	Do.	
228	Rudha Sojeram	Fitter ...	Do.	
229	Ramaswami Venkatarya	Nil ...	Do	
230	Ammonajamah do.	Do. ...	Do.	
231	Rama Manaji Phond	Hammerman ...	Do.	
232	Raja Gopal Veraram Rajoo	Nil ...	Do.	
233	Alamalamah Rajoo	Do. ...	Do.	
234	Summon do.	Do. ...	Do.	
235	Mahadeo Gopal	Do. ...	Do.	
236	J. Veraram Rajoo	Do. ...	Do.	
237	Khaji Emamsaib	Clerk ...	Do.	
238	Peraji Kandoo	Fireman ...	Do.	
239	Balianah Sevaram	Boiler maker ...	Do.	
240	Kariappa Sedodapa	Rivetter ...	Do.	
241	Kassiram	Peon ...	Do.	
242	Chondru	Nil ...	Do.	
243	Chondee	Storewoman ...	Do.	
244	Mahadeo Anumontha	Bil man ...	Do.	
245	Rajubee Emamsaib	Nil ...	Loco. Supt.'s Bungalow.	
246	Rajahamah Fakeersaib	Do. ...	Do.	
247	Hooseinbu do.	Do. ...	Do.	
248	Fakeersaib	Do. ...	Do.	
249	David Danial	Pointsman ...	Hubli.	
250	Essa Mohidin	Nil ...	Do.	
251	Parwatee Munuswamy	Do. ...	Shanker Rao's Chall.	
252	Parashram Sundram	Porter	Do.	
253	Mutumarry Kokan	Nil ...	Do.	
254	Thangam Kokan	Do. ...	Do.	
255	Mickel D'Cruz	Do. ...	Do.	
256	Rozen D'Cruz	Do. ...	Do.	
257	Luxuman Subbaya	Do. ...	Do.	
258	Challama Challappa	Do. ...	Do.	
259	Luxmee Challappa	Do. ...	Do.	
260	L. Metcalfe J. Metcalfe	Fireman ...	Do.	
261	Kumarswamy Tulsi	Nil ...	Do.	

No.	Names.	Occupation.	Residence.	Remarks.
262	Baboo Challappa	Nil ...	Shanker Rao's Chall.	
263	Ithabai Mahadeo	Do. ...	Do.	
264	Santamah Ruthmari	Do. ...	Do.	
265	Ihanam Ruthmari	Do. ...	Do.	
266	Krishnabai Venkobroo	Do. ...	Do.	
267	Kupujeerao Bapurao	Do. ...	Do.	
268	Kandan Chullan	Porter ...	Do.	
269	Velanthan Armogam	Nil ...	Do.	
270	Dattatraya Narayen	Do. ...	Do.	
271	Mallang Kumalkhan	Do. ...	Ganesh Peit.	
272	Kumalkhan Salimkhan	Do. ...	Do.	
273	Budhia Kaloji	Mali ..	Near Loco. M. Chall.	
274	Ganesh Vittal Patel	Clerk ...	Ganesh Peit.	
275	Govind Raghunath Surnowbad ...	Storeman ...	Do.	
276	D. S. Gokhale	Fitter ...	Do.	
277	Marimuttoo Santhamon	Nil ...	Ganesh Peit, Hubli.	
278	Sunderkoo Tillakoo	Do. ...	Do.	
279	Vitoo Bapooji	Do. ...	Loco. Menial Chall.	
280	Maruti Vitoo	Do. ...	Do.	
281	Luxumon Joti	Boiler maker ...	Do.	
282	Rangaswamy Challimadre	Cook ...	Ry. Staff Quarters.	
283	Bodee Kupuswamy	Cleaner ...	Shanker Rao's Chall.	
284	Veeraswamy Mukunth	Porter Mistry ...	Porters' Chall.	
285	D. D'Cruze	Tin maker ...	Shanker Rao's Chall.	
286	Unthamah Varathayah	Do. ...	Do.	
287	Gangoo Mahadoo	Nil ...	S. M.'s out-houses.	
288	Punuswamy Kanda	Do. ...	Porters' Chall.	
289	Khatumbu Rahimbackas	Do. ...	Shanker Rao's Chall.	
290	Jinu Kalidass	Do. ...	Do	
291	Marry Caslis	Do. ...	Do.	
292	Lui Caslis	Do. ...	Do.	
293	Omapati Ramchandrarao	Do. ...	Do.	
294	Mahadeorao Ramchandrarao ...	Do. ...	Do.	
295	Anjalin Gorje D'Vas...	Midwife ...	Ganesh Peit, H.	
	Total number inoculated *twice* as per above ...		295	
	Total number of persons inoculated *once*		543	
	Grand Total ...		838	

G. S. CHINAI,
Surgeon Medical Officer, S. M. Railway.

Hubli, 22nd June 1898.

SOUTHERN MARA

MEDICAL

Statement showing the Number of Persons twice inoculated

No.	Names.	Sex.	Age.	Caste.	Occupation.
1	Mr. Rastumji Sorabji	M.	35	P.	Fitter ...
2	„ Jeejibhai Ratunji	M.	35	P.	„ ...
3	„ Mancherji Hormusji	M.	45	P.	„ ...
4	Bamanji Jamsetji	M.	15	P.	Nil ...
5	Merwanji Jamsetji	M.	11	P.	„ ...
6	Rama Dhondi	M.	30	H.	Hammer-man ...
7	Bapuji Sersoba	M.	35	H.	„ ...
8	Narayan Dhondiba	M.	29	H.	Carpenter ...
9	Rama Sawla	M.	32	H.	Nil ...
10	Bhagoba Govind...	M.	50	H.	B. Mukadam ...
11	Shamlal Mohanlal	M.	28	H.	Carpenter ...
12	Nangu Khushal	M.	22	H.	„ ...
13	Ramprasad Kallian	M.	12	H.	„ ...
14	Banasing Ramsing	M.	49	H.	„ ...
15	Sarjirav Krishnaji	M.	14	H.	App. carpenter ...
16	Baloo Banasing	M.	10	H.	„ ...
17	Ramsa Pitha	M.	35	H.	„ ...
18	Sakharam Bapuji	M.	15	H.	„ ...
19	Feroo Bisansing	M.	11	H.	„ ...
20	Budhsagar Bhavaniprasad	M.	35	H.	„ ...
21	Puran Poparam	M.	40	H.	„ ...
22	Imarta Pemu	M.	32	H.	„ ...
23	Ghissa Esar	M.	30	H.	Fitter ...
24	Jagan Hetram	M.	18	H.	Carpenter ...
25	Mayasing Mangotsing	M.	28	H.	„ ...
26	Malkarjun Lingappa	M.	35	H.	„ ...
27	Budha Lekhroj	M.	26	H.	„ ...
28	Gundapa Mallapa	M.	38	H.	„ ...
29	Narhari Ramaji	M.	12	H.	Nil ...
30	Nandkisor Donga	M.	20	H.	Carpenter ...
31	Hari Narayen Radhram	M.	30	H.	„ ...
32	Gangaram Jeewasing	M.	30	H.	„ ...
33	Dewisai Kaniram	M.	21	H.	„ ...
34	Chitar Maniram	M.	20	H.	„ ...
35	Mangaria Nandu...	M.	16	H.	Cooly ...
36	Gopinath Hari	M.	35	H.	Trimmer ...
37	Umrao Girbal	M.	26	H.	Carpenter ...
38	Anandrao Malakarjun	M.	9	H.	Nil ...
39	Savinee Ruda	M.	7	H.	„ ...
40	Hanmant Bapooji	M.	16	H.	Apprentice ...
41	Narsing Ramadeen	M.	30	H.	Carpenter ...
42	Rutram Sheolal	M.	26	H.	„ ...
43	Ramalal Ramsook	M.	30	H.	„ ...
44	Chaturbhuj Balvant	M.	26	H.	Fitter ...
45	Khubram Ramsook	M.	25	H.	Carpenter ...
46	Sharanapa Shiwanapa	M.	30	H.	Cooly ...
47	Timana Tamana	M.	50	H.	„ ...
48	Raiyappa Shimapa	M.	35	H.	„ ...
49	Radharam Bemaram	M.	35	H.	Carpenter ...
50	Dhularam Bemaram	M.	50	H.	„ ...
51	Yemana Gopinath	F.	10	H.	Nil ...
52	Nathia Radha	M.	8	H.	„ ...
53	Ghisa Krishna	M.	4	H.	„ ...
54	Nathi Gopinath	F.	9	H.	„ ...
55	Yakub Benjiman...	M.	24	Jew.	Carpenter ...
56	Raja Bapooji	M.	8	H.	Nil ...
57	Bapu Niloba	M.	30	H.	Nalumerma ...
58	Hardew Bishnu	M.	22	H.	Carpenter ...

THA RAILWAY.

DEPARTMENT.

at the Railway Hospital, Hubli, up to 8th July 1898.

Place of birth.	Present address.	General health.	Date of Inoculation. First time.	Date of Inoculation. Second time.	Dose each time.	Remarks.
Navsari ...	Ganesh Peth ...	Good ...	12th June 1898.	15th June 1898.	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	Loco. M. Chaul.	„ ...	„ ...	„ ...	...	
Karjat ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Sátára ...	„ ...	„ ...	„ ...	„ ...	...	
Poona ...	„ ...	„ ...	„ ...	„ ...	...	
Bombay ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Ahmedabad...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Pen ...	„ ...	„ ...	„ ...	„ ...	...	
Ahmedabad...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Delhi ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Gadag ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Hubli ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Loco M. Chaul	„ ...	„ ...	„ ...	„ ...	...	
Bombay ...	„ ...	„ ...	„ ...	„ ...	...	
Delhi ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Gooty ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Madras ...	„ ...	„ ...	„ ...	„ ...	...	
Dhárwár ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Nargund ...	„ ...	„ ...	„ ...	„ ...	...	
Jhanshi ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Dhárwár ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Jhanshi ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Poona ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	
Agra ...	„ ...	„ ...	„ ...	„ ...	...	
„ ...	„ ...	„ ...	„ ...	„ ...	...	

No.	Names.	Sex.	Age.	Caste.	Occupation.	Place of birth.	Present address.	General health.	Date of Inoculation. First time.	Date of Inoculation. Second time.	Dose each time.	Remarks.
59	Kassam Budhan	M.	14	M.	Nil	Gadag ...	Hubli ...	Good ...	12th June 1898.	15th June 1898.	...	
60	Jorbi Budhan	F.	9	M.	"	" ...	" ...	" ...	" ...	" ...	...	
61	Aboo Kanda	M.	30	H.	Porter	" ...	" ...	" ...	11th June 1898.	" ...	...	
62	Chinamapaya Challa	M.	25	H.	"	Bellary ...	" ...	" ...	" ...	" ...	...	
63	Marry Mama	M.	35	H.	"	" ...	" ...	" ...	" ...	" ...	...	
64	Armogam Multapa	M.	30	H.	"	" ...	" ...	" ...	" ...	" ...	...	
65	Tandonima Veerswamy	F.	40	H.	Nil	" ...	" ...	" ...	" ...	" ...	...	
66	Chinamah Kulake	M.	25	H.	"	" ...	" ...	" ...	" ...	" ...	...	
67	Thai Kandan	F.	30	H.	"	" ...	" ...	" ...	" ...	" ...	...	
68	Dewany Marry	F.	40	H.	"	" ...	" ...	" ...	" ...	" ...	...	
69	Munima Narayenswamy	F.	22	H.	"	" ...	" ...	" ...	" ...	" ...	...	
70	Yellama Muthoo...	F.	27	H.	"	Madras ...	" ...	" ...	12th June 1898.	" ...	...	
71	Ashabi Rhymoo	F.	17	M.	"	" ...	" ...	" ...	11th June 1898.	" ...	...	
72	Abdul Rajak	M.	5	M.	"	" ...	" ...	" ...	12th June 1898.	" ...	...	
73	Rewa Manchand	M.	35	H.	Blacksmith	" ...	" ...	" ...	" ...	" ...	...	
74	Gasper Ramigroon	M.	40	N. Ch.	Cook	" ...	" ...	" ...	13th June 1898.	" ...	...	
75	Samsudin Abdul Rajak	M.	40	M.	Jamádár	" ...	" ...	" ...	12th June 1898.	21st June 1898	...	
76	Mudukrishna Naidu	M.	23	H.	Holder	" ...	" ...	" ...	13th June 1898.	" ...	...	
77	Govind Setiappa	M.	18	H.	Apprentice	Gooty ...	" ...	" ...	" ...	" ...	...	
78	Rangaya Rajoo	M.	25	H.	Boiler-maker	Hubli ...	" ...	" ...	" ...	" ...	...	
79	Swamy Veerappa	M.	36	H.	Rivetter	" ...	" ...	" ...	" ...	" ...	...	
80	Murgesh Veeraswamy	M.	20	H.	Holder	" ...	" ...	" ...	" ...	" ...	...	
81	Krishnaswamy Ramswamy	M.	22	H.	Rivetter	Tadpatri ...	" ...	" ...	" ...	" ...	...	
82	Ramchandra Rajoo Nagrajoo ...	M.	40	H.	"	" ...	" ...	" ...	" ...	" ...	...	
83	Pitswamy Adekelan Pilley	M.	40	H.	Boiler-maker	" ...	" ...	" ...	" ...	" ...	...	
84	Virrow Raju Subraju	M.	40	H.	"	" ...	" ...	" ...	" ...	" ...	...	
85	Govindswamy Swamy Naidu... ...	M.	20	H.	Apprentice	" ...	" ...	" ...	" ...	17th June 1898.	...	
86	Govindswamy Sedambam Pilley ...	M.	22	H.	Boiler-maker	Bangalore ...	" ...	" ...	" ...	" ...	...	
87	Fakira Arunachalum Pilley	M.	25	H	Nil	" ...	" ...	" ...	" ...	" ...	...	
88	Antoni Marry	M.	22	N. Ch.	Fitter, C. shop	Madras ...	" ...	" ...	12th June 1898.	" ...	...	
89	C. Bernard	M.	40	Eur.	Painter	" ...	" ...	" ...	" ...	" ...	...	
90	Deoka Kanoo	M.	18	H.	Nil	Sátára ...	" ...	" ...	" ...	" ...	...	
91	Dasharath Satwaji	M.	8	H.		Madras ...	" ...	" ...	" ...	" ...	...	
92	Waliamah Valam...	F.	25	H.	"	" ...	" ...	" ...	" ...	" ...	...	
93	Thayamah Aboo	F.	24	H.	"	" ...	" ...	" ...	" ...	" ...	...	
94	Chinuamah Chowry	F.	35	H.	"	" ...	" ...	" ...	" ...	" ...	...	
95	Maremuthoo Veraswamy	F.	9	H.	"	" ...	" ...	" ...	" ...	" ...	...	
96	Menacly Veraswamy	F.	29	H.	"	" ...	" ...	" ...	" ...	" ...	...	
97	Waliamah Munian	F.	40	H.	"	" ...	" ...	" ...	" ...	" ...	...	
98	Kuppee Kareegan	F.	35	H.	"	" ...	" ...	" ...	" ...	" ...	...	
99	Menchy Murugan	F.	20	H.	"	" ...	" ...	" ...	" ...	" ...	...	
100	Jaganathan Aboo...	M.	5	H.	"	" ...	" ...	" ...	" ...	" ...	...	
101	Muregeyamah Cinna Mary	F.	6	H.	"	" ...	" ...	" ...	" ...	" ...	...	
102	Cupuswamy	M.	50	H.	"	" ...	" ...	" ...	13th June 1898.	" ...	...	
103	F. R. Narayenswamy Naidu ...	M.	25	H.	Boiler-shop Machine.	" ...	" ...	" ...	" ...	" ...	...	
104	Muniswamy Rajoo	M.	23	H.	" " ...	" ...	" ...	" ...	" ...	" ...	...	
105	Govinduragooloo Cuppyswamy ...	M.	10	H.	Boiler-maker ...	" ...	" ...	" ...	" ...	" ...	...	
106	Maligumah Munia	F.	40	H.	Nil	" ...	" ...	" ...	12th June 1898.	" ...	...	
107	Mr. J. Dorabji	M.	25	P.	"	" ...	" ...	" ...	13th June 1898.	" ...	...	
108	Yanapoo	M.	25	H.	E. Driver	Karáchi ...	" ...	" ...	" ...	" ...	...	
109	Hamama Kali	F.	40	H.	Nil	Gooty ...	" ...	" ...	" ...	" ...	...	
110	Agenesh Thamboo	F.	42	H.	"	" ...	" ...	" ...	" ...	" ...	...	
111	Benjomen Salomen	M.	50	Jew	"	" ...	" ...	" ...	" ...	" ...	...	
112	Solomen Benjamin	M.	8		Carpenter	Kehim ...	" ...	" ...	" ...	" ...	...	
113	Gopal Vithoba	M.	18	H.	Nil	Kolába ...	" ...	" ...	" ...	" ...	...	
114	Kalasappa Tirappa	M.	22	H.	Turner	Hubli ...	" ...	" ...	" ...	" ...	...	
115	Krishna Bapoorao	M.	10	H.	Cooly	" ...	" ...	" ...	14th June 1898.	" ...	...	
116	Moses Salomen	M.	22	Jew	"	Sángli ...	" ...	" ...	13th June 1898.	" ...	...	
117	Silomen Ibrahm	M.	14		Carpenter	Bombay ...	" ...	" ...	" ...	" ...	...	
118	Elizabeth Nloseo	F.	11	"	Fitter	" ...	" ...	" ...	" ...	" ...	...	
119	Suleman Raim	M.	24	"	Nil	Madras ...	" ...	" ...	" ...	" ...	...	
120	Yakoof Salomen	M.	40	"	Carpenter	" ...	" ...	" ...	" ...	" ...	...	
121	Iskel Benzamin	M.	15	"	"	Bombay ...	" ...	" ...	12th June 1898.	" ...	...	
122	Abdoolakha Abdool Rahimkha ...	M.	22	M.	Nil " Boiler-maker ...	" ...	" ...	" ...	" ...	" ...	...	

No.	Names.	Sex.	Age.	Caste.	Occupation.	Place of Birth.	Present address.	General health.	Date of Inoculation. First Time.	Date of Inoculation. Second Time.	Dose each time.	Remarks.
123	Moses Salomen ...	M.	25	Jew	Carpenter	Bombay ...	Hubli ...	Good ...	12th June 1898.	17th June 1898.	...	
124	Simabai Haim ...	M.	10	,,	Nil	Hubli ...	,, ...	,, ...	,, ...	,, ...	...	
125	Shanker Dinker ...	M.	30	H.	S. Inspector	Bombay ...	,, ...	,, ...	,, ...	,, ...	...	
126	Siman Haim ...	M.	12	Jew	Nil	,, ...	,, ...	,, ...	,, ...	,, ...	...	
127	Haim Solomen ...	M.	35	,,	Carpenter	,, ...	,, ...	,, ...	,, ...	,, ...	...	
128	P. Dias ...	M.	15	E. S.	Nil	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
129	Pandoo Govind...	M.	30	H.	Turner	Belgaum ...	,, ...	,, ...	,, ...	,, ...	...	
130	Bhaishanker Runchod	M.	32	H.	Copper-smith	,, ...	,, ...	,, ...	,, ...	,, ...	...	
131	Chintaman Raghunath	M.	23	H.	C. S. Fitter	,, ...	,, ...	,, ...	,, ...	,, ...	...	
132	Dushrath Rama ...	M.	30	H.	C. Fitter	,, ...	,, ...	,, ...	,, ...	,, ...	...	
133	Fulta Isor ...	M.	30	H.	Carpenter	,, ...	,, ...	,, ...	,, ...	,, ...	...	
134	Bapooji Krishnaji ...	M.	55	H.	Hammer-man	Bombay ...	,, ...	,, ...	,, ...	,, ...	...	
135	Rawan Dashrath... ...	M.	8	H.	Nil	,, ...	,, ...	,, ...	,, ...	,, ...	...	
136	Shodmagam Durgajee ...	M.	25	H.	D. Clerk	Karád ...	,, ...	,, ...	,, ...	,, ...	...	
137	Sawlaram Ganoo... ...	M.	32	H.	Saw-mill	,, ...	,, ...	,, ...	,, ...	,, ...	...	
138	Anundrao Laxuman ...	M.	30	H.	Fitter	,, ...	,, ...	,, ...	,, ...	,, ...	...	
139	Baloo Errappa	M.	35	H.	C. S. Mihin	Gadag ...	,, ...	,, ...	,, ...	,, ...	...	
140	Narayen Gopal	M.	30	H.	Cooly	,, ...	,, ...	,, ...	,, ...	,, ...	...	
141	Tukaram Pandoo... ...	M.	25	H.	Driver, B. S.	,, ...	,, ...	,, ...	,, ...	,, ...	...	
142	Dhaklibai Salomen ...	F.	8	Jew	Nil	,, ...	,, ...	,, ...	13th June 1898.	,, ...	...	
143	Ranj o Rama	M.	25	H.	Saw-mill	,, ...	,, ...	,, ...	,, ...	,, ...	...	
144	Jalaya Baloo	M.	12	H.	Nil ...	Dhárwár ...	,, ...	,, ...	,, ...	,, ...	...	
145	Abrahm Benjamin ...	M.	15	Jew	Carpenter	Bombay ...	,, ...	,, ...	12th June 1898.	,, ...	...	
146	Hunurahma Erariapa ...	F.	32	H.	Sweeper	,, ...	,, ...	,, ...	13th June 1898.	,, ...	...	
147	Tukaram Bapooji ...	M.	6	H.	Nil	Kalyán ...	,, ...	,, ...	,, ...	,, ...	...	
148	Yamunabai Bapooji ...	F.	35	H.	,,	Karjat ...	,, ...	,, ...	,, ...	,, ...	...	
149	Rajoobai Krishnaji ...	F.	30	H.	,,	Mysore ...	,, ...	,, ...	12th June 1898.	,, ...	...	
150	Venkatachalam Govind Pilly...	M.	40	H.	Boiler-maker	Sásvad ...	,, ...	,, ...	13th June 1898.	,, ...	...	
151	Shankar Dasharath ...	M.	6	H.	Nil	,, ...	,, ...	,, ...	,, ...	,, ...	...	
152	Dewji Krishna	M.	34	H.	Rivetter	,, ...	,, ...	,, ...	,, ...	,, ...	...	
153	Ameer Mohmed Hoosein ...	M.	8	M.	Nil	Dhon ...	,, ...	,, ...	,, ...	,, ...	...	
154	Satya Narayen Matadeen ...	M.	12	H.	B. Smith	Delhi ...	,, ...	,, ...	,, ...	,, ...	...	
155	Rakhumudin Allisah ...	M.	10	M.	Nil	,, ...	,, ...	,, ...	,, ...	,, ...	...	
156	Maruti Subhanba ...	M.	25	M.	Chowkidár	Belgaum ...	,, ...	,, ...	,, ...	,, ...	...	
157	Fatu Mohmed Hoosein ...	F.	9	M.	Nil	,, ...	,, ...	,, ...	,, ...	,, ...	...	
158	Chandkha	M.	40	M.	M. Shop	,, ...	,, ...	,, ...	,, ...	,, ...	...	
159	Allabux Shehor	M.	6	M.	Nil	Bangalore ...	,, ...	,, ...	,, ...	,, ...	...	
160	Krishnaram Fatechand ...	M.	35	H.	Carpenter	Poona ...	,, ...	,, ...	12th June 1898.	,, ...	...	
161	Kashiram Savjiram ...	M.	21	H.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
162	Allisab Mohmed... ...	M.	45	M.	Cooly	Gokák ...	,, ...	,, ...	,, ...	,, ...	...	
163	Kallian Thakoorprasad ...	M.	40	H.	Contractor	Bombay ...	,, ...	,, ...	,, ...	,, ...	...	
164	Nagmah Balloo	F.	30	H.	Nil	,, ...	,, ...	,, ...	,, ...	,, ...	...	
165	Puramah Balloo	F.	6	H.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
166	Jiwansing Shersing ...	M.	12	H	,,	Dhárwár ...	,, ...	,, ...	,, ...	,, ...	...	
167	Husenbi Mohmed ...	F.	30	M.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
168	Raja Munia	M.	25	H.	Porter	,, ...	,, ...	,, ...	,, ...	,, ...	...	
169	Kupuswami Veeraswami ...	M.	14	H.	Nil	,, ...	,, ...	,, ...	,, ...	18th June 1898.	...	
170	Wlimamah Amnogam ...	F.	13	H.	,,	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
171	Munimah Venketram ...	F.	10	H.	,,	Arcot ...	,, ...	,, ...	,, ...	,, ...	...	
172	Walimah Veeraswamy ...	F.	9	H.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
173	Kaudan Mutan	M.	45	H.	Porter	,, ...	,, ...	,, ...	,, ...	,, ...	...	
174	Armogam Uliria... ...	M.	6	H.	Nil	,, ...	,, ...	,, ...	,, ...	,, ...	...	
175	Padwatu Chimamarry ...	M.	8	H.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
176	Pirmal Aboo	M.	6	H.	,,	Ajmere ...	,, ...	,, ...	,, ...	,, ...	...	
177	Chimuswamy Karian ...	M.	8	H.	,,	Bellary ...	,, ...	,, ...	,, ...	,, ...	...	
178	Durgi Naga	F.	14	H.	Sweeper	,, ...	,, ...	,, ...	13th June 1898.	,, ...	...	
179	Krishnaswamy Ulurgam ...	F.	8	H.	Nil	,, ...	,, ...	,, ...	12th June 1898.	,, ...	...	
180	Bhima Rangappa ...	M.	30	H.	Bedar	,, ...	,, ...	,, ...	15th June 1898.	,, ...	...	
181	Suntharumurthee Rateman ...	M.	6	H.	Nil	Dhárwár ...	,, ...	,, ...	8th June 1898.	,, ...	...	
182	Tharmulingam Rateman ...	M.	4	H.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
183	Kalundyavaloo Rathaman ...	M.	2	H.	,,	Bellary ...	,, ...	,, ...	,, ...	,, ...	...	
184	Savarinayagum Changubvaraji ...	F.	10	H.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
185	Papamali Changulvaranji ...	F.	4	H.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
186	Ratunmah Changulvaranji ...	F.	5	H.	,,	,, ...	,, ...	,, ...	,, ...	,, ...	...	
187	Auloobai Baporao ...	F.	23	H.	,,	Dhárwár ...	,, ...	,, ...	,, ...	,, ...	...	

No.	Names.	Sex.	Age.	Caste.	Occupation.	Place of Birth.	Present address.	General Health.	Date of Inoculation. 1st Time.	Date of Inoculation. 2nd Time.	Dose each time.	Remarks.
188	Doraswamy Veratharuguloo...	M.	22	H.	Nil	Dhárwár	Hubli	Good	8th June 1898.	18th June 1898		
189	Panamany Veratharuguloo	F.	8	H.	,,	Mysore	,,	,,	,,	,,		
190	Rasul Masthansab	M.	16	M.	,,	,,	,,	,,	,,	,,		
191	Manikam Subtiaya	F.	8	H.	,,	,,	,,	,,	,,	,,		
192	Cheralun Bubbaya	M.	4	H.	,,	,,	,,	,,	,,	,,		
193	Papamah Subbaya	F.	35	H.	,,	,,	,,	,,	,,	,,		
194	Bapoorao Morhariraw	M.	39	H.	,,	,,	,,	,,	,,	,,		
195	Bhenah Runga	M.	32	H.	Hammer Man	,,	,,	,,	15th June 1898.	,,		
196	Purahmed Mohmedsab	F.	35	M.	Nil	,,	Kasapur	,,	13th June 1898.	,,		
197	Danil Areemu	M.	35	Ch.	,,	Bangalore	,,	,,	,,	,,		
198	Arumgamy A. M.	M.	28	,,	Driver	,,	Hubli	,,	7th June 1898.	12th June 1898.		
199	Sakinabee Anurkha	F.	40	M.	Nil	,,	,,	,,	13th June 1898.	18th June 1898.		
200	Jojepen Duming Narohna	F.	6	N. Ch.	,,	,,	,,	,,	,,	,,		
201	Krishnabai Baloo	F.	5	H.	,,	Hubli	,,	,,	,,	,,		
202	Sitabai Baloo	F.	7	H.	,,	,,	,,	,,	,,	,,		
203	Logunatham Ayaswamy	M.	24	N. Ch.	Guard	,,	,,	,,	1st June 1898.	12th June 1898.		
204	Cowasji Dorabji	M.	35	P.	Fitter	Birur	,,	,,	,,	,,		
205	Jeewaji Dadabhai	M.	15	P.	,,	Navsári	,,	,,	,,	,,		
206	Jeejibhai Dadabhai	M.	20	P.	Turner	,,	,,	,,	,,	,,		
207	Bhicaji Cowasji	F.	20	P.	Nil	,,	,,	,,	,,	,,		
208	Fayajully Salidally	M.	35	M.	Fitter	,,	,,	,,	12th June 1898.	15th June 1898.		
209	Satwa Kushaba	M.	50	Mahár.	Butler	Baroda	,,	,,	16th June 1898.	19th June 1898.		
210	Thayee Govindam Chitty	F.	28	H.	Nil	Maras	,,	,,	,,	,,		
211	Tulsibai Bhagooji	F.	30	H.	,,	,,	,,	,,	,,	,,		
212	Manjoolabai Bapooji	F.	32	H.	,,	Hubli	,,	,,	,,	,,		
213	Saganthabai Santoo	F.	16	H.	,,	Dhárwár	,,	,,	,,	,,		
214	Muktabai Anundraw	F.	16	H.	,,	,,	,,	,,	,,	,,		
215	Jai Rama	F.	16	H.	,,	,,	,,	,,	,,	,,		
216	Davamah Bavani	F.	60	H.	,,	,,	,,	,,	,,	,,		
217	Jai Mahadoo	F.	25	H.	,,	,,	,,	,,	,,	,,		
218	Baloo Dewiji	F.	25	H.	,,	,,	,,	,,	,,	,,		
219	Jaya Basappa	F.	20	H.	,,	,,	,,	,,	,,	,,		
220	Rajamah Bamanah	F.	11	H.	,,	,,	,,	,,	,,	,,		
221	Sundrabai Shunkerao	F.	20	H.	,,	,,	,,	,,	,,	,,		
222	Abbeyi Shunkerao	F.	25	H.	,,	,,	,,	,,	,,	,,		
223	Hajumah Shaik Hoosein	F.	40	M.	,,	,,	,,	,,	,,	,,		
224	Parwatibai Daji	F.	16	M.	,,	,,	,,	,,	13th June 1898.	,,		
225	Mukta Mahadu	F.	8	H.	,,	,,	,,	,,	,,	,,		
226	Ammarthan Anton	F.	18	N. Ch.	,,	,,	,,	,,	12th June 1898.	,,		
227	Mahadev Gopal	M.	28	H.	,,	,,	,,	,,	,,	,,		
228	Rasul Kamal	M.	25	M.	Railway Hospital.	,,	,,	,,	17th June 1898.	,,		
229	Rudha Sojiram	M.	28	H.	Fitter	Markpur	,,	,,	,,	,,		
230	Ramaswamy Venkataraja	M.	2	H.	Nil	Poona	,,	,,	,,	,,		
231	Ammawyamah Venkataraja	F.	8	H.	,,	Hubli	,,	,,	,,	,,		
232	Ramamanaji Phanel	M.	45	H.	H. Man	Poona	,,	,,	15th June 1898.	,,		
233	Rajugopal Verasavrajoo	M.	3	H.	Nil	Bangalore	,,	,,	,,	,,		
234	Alamalamah Vera Raju	F.	10	H.	,,	,,	,,	,,	13th June 1898.	,,		
235	Luxumoo Verarow Ragoo	F.	4	H.	,,	,,	,,	,,	,,	,,		
236	Jankeeamah Vera Raw Ragoo	F.	11	H.	,,	,,	,,	,,	,,	,,		
237	Khajee Imamsab	M.	30	M.	Cleaner	,,	,,	,,	,,	,,		
238	Peraji Kandoo	M.	25	H.	Fireman	Kadur	,,	,,	,,	,,		
239	Babanah Sivaram	M.	22	H.	Bread Maker	Dhárwár	,,	,,	17th June 1898.	,,		
240	Kariapa Sidappa	M.	35	H.	Rivetter	,,	,,	,,	15th June 1898.	,,		
241	Kasiram	M.	35	H.	Peon M. Officer	Hubli	,,	,,	16th June 1898.	,,		
242	Chandri Ramadin	F.	12	H.	Nil	Poona	,,	,,	,,	,,		
243	Dhondu Ramadin	F.	30	H.	Storeman	,,	,,	,,	,,	,,		
244	Mahadu Hanmuntrao	M.	30	H.	Oilman	,,	,,	,,	,,	,,		
245	Rajubee Imamsab	F.	14	M.	Mr. Sargent's bungalow.	,,	,,	,,	,,	20th June 1898.		
246	Rajuhamah Fakirsab	F.	35	M.	,,	,,	,,	,,	,,	,,		
247	Hooseinbi do.	F.	6	M.	,,	Bombay	,,	,,	,,	,,		
248	Fakeersab Byroosab	M.	46	M.	,,	,,	,,	,,	,,	,,		
249	David Danial	M.	25	Jew.	Pointsman	,,	,,	,,	,,	,,		
250	Essa Mahadev	F.	8	M.	Nil	,,	,,	,,	,,	,,		
251	Parwati Mumswamy	F.	30	H.	,,	Hubli	,,	,,	,,	,,		

No.	Names.	Sex.	Age.	Caste.	Occupation.	Place of Birth.	Present address.	General Health.	Date of Inoculation. 1st Time.	Date of Inoculation. 2nd Time.	Dose last time.	Remarks.
252	Parasram Sundraman	M.	26	M.	Porter ...	Hubli ...	Hubli ...	Good ...	16th June 1898.	20th June 1898.	...	
253	Mathoomary Kokan	F.	5	H.	Nil ...	Bellary ...	,, ...	,, ...	18th June 1898.	,, ...	...	
254	Thangam Kakan...	F.	12	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
255	Micle Deruz	M.	10	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
256	Rogudu Deruz	F.	16	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
257	Lutatiman Subbaya	M.	12	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
258	Challatha Chillapen	F.	35	H.	,, ...	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
259	Luxumee Chalappa	F.	5	H.	,, ...	Hubli ...	,, ...	,, ...	,, ...	,, ...	...	
260	L. Metculfe J. Metculfe	M.	23	E. S.	Fireman ...	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
261	Kumarswamy Tholasi	M.	10	H.	Nil ...	Bangalore ...	,, ...	,, ...	,, ...	,, ...	...	
262	Baboo Challapen	M.	10	H.	,, ...	Birur ...	,, ...	,, ...	,, ...	,, ...	...	
263	Etabai Mahadev	F.	25	H.	,, ...	Sátára ...	,, ...	,, ...	,, ...	,, ...	...	
264	Santhamah Rathman	F.	23	H.	,, ...	Bellary ...	,, ...	,, ...	,, ...	,, ...	...	
265	Thanam Rathman	F.	2	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
266	Krishnabai Venkobarav	F.	15	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
267	Kuppujirao Bapurao	M.	2	H.	,, ...	Bangalore ...	,, ...	,, ...	,, ...	,, ...	...	
268	Kandan Chillan	M.	28	H.	Porter ...	Hubli ...	,, ...	,, ...	,, ...	,, ...	...	
269	Vellantham Arnihgam	M.	7	H.	Nil ...	Mysore ...	,, ...	,, ...	,, ...	,, ...	...	
270	Dattatraya Narayen	M.	40	H.	,, ...	Poona ...	,, ...	,, ...	17th June 1898.	,, ...	...	
271	Malag Kamalkhan	M.	20	M.	,, ...	Miraj ...	,, ...	,, ...	16th June 1898.	21st June 1898.	...	
272	Kamalkhan Salemkhan	M.	40	M.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
273	Bathiya Kabaji	M.	32	H.	Malee ...	Nagar ...	,, ...	,, ...	17th June 1898.	,, ...	...	
274	Ganesh Vithal Patel	M.	30	H.	Clerk ...	Belgaum ...	,, ...	,, ...	18th June 1898.	,, ...	...	
275	Govind Raghnath Sarnal	M.	30	H.	Storeman ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
276	D. S. Gokhly	M.	25	H.	Fitter ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
277	Maremutham Santhanan	F.	12	H.	Nil ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
278	Sundrarav Therkarav	M.	26	H.	Carpenter ...	Arsikere ...	,, ...	,, ...	,, ...	,, ...	...	
279	Appaji Vetto	M.	35	H.	Nil ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
280	Maruti Ettu	M.	25	H.	,, ...	Kolhápur ...	,, ...	,, ...	,, ...	,, ...	...	
281	Luxuman Jathu	M.	25	H.	Boiler Maker ...	,, ...	,, ...	,, ...	17th June 1898.	,, ...	...	
282	Rangaswamy Challimaduri	M.	20	H.	Cook ...	Guntákal ...	,, ...	,, ...	,, ...	,, ...	...	
283	Bode Kuppuswamy	M.	13	H.	Cleaner ...	Karnul ...	,, ...	,, ...	,, ...	,, ...	...	
284	Veraswamy Mukunth	M.	45	H.	Mistri Porter ...	,, ...	,, ...	,, ...	11th June 1898.	,, ...	...	
285	D. Deruze	M.	50	Ch.	Tinmaker ...	,, ...	,, ...	,, ...	17th June 1898.	,, ...	...	
286	Mathurayamah Verathorya	F.	40	H.	Nil ...	Bombay ...	,, ...	,, ...	,, ...	,, ...	...	
287	Gangu Mahadu	F.	20	H.	,, ...	Bellary ...	,, ...	,, ...	,, ...	,, ...	...	
288	Punnswamy Kanda	M.	13	H.	,, ...	Gokak ...	,, ...	,, ...	11th June 1898.	,, ...	...	
289	Khatumbi Rahimbux	M.	11	M.	,, ...	Miráj ...	,, ...	,, ...	18th June 1898.	,, ...	...	
290	Jivi Kalidass	F.	15	H.	,, ...	Nagar ...	,, ...	,, ...	,, ...	,, ...	...	
291	Marri Casttes	F.	8	N.C.	,, ...	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
292	Lui Castts	M.	3	N.C.	Nil ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
293	Omapati Ramchandrarow	M.	14	H.	,, ...	Sángli ...	,, ...	,, ...	,, ...	,, ...	...	
294	Mahadevrao Ramchandrarow	M.	6	H.	,, ...	Bangalore ...	,, ...	,, ...	,, ...	,, ...	...	
295	Anju bin Jorge Davis	F.	48	N.C.	Midwife ...	,, ...	,, ...	,, ...	15th June 1898.	,, ...	...	
296	Badubhai Sivaji	M.	50	H.	Carpenter ...	Chiplún ...	,, ...	,, ...	.....	22nd June 1898.	...	
297	Nueshama Sidoo	M.	40	H.	Nil ...	Tásgaon ...	,, ...	,, ...	15th June 1898.	,, ...	...	
298	Devji Gangaram	M.	28	H.	Fitter ...	Poona ...	,, ...	,, ...	17th June 1898.	,, ...	...	
299	Sukadew Nathram	M.	35	H.	Carpenter ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
300	Juguraj Gangadhar	M.	32	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
301	Nathram Shamram	M.	39	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
302	Venkatan Kanthan	M.	26	H.	Porter ...	Hubli ...	,, ...	,, ...	,, ...	,, ...	...	
303	Doraswamy Channapati	M.	15	H.	Nil ...	Harihar ...	,, ...	,, ...	,, ...	,, ...	...	
304	Sarzakhan Amirkhan	M.	22	H.	Peon ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
305	Parwathi Munswamy	F.	30	H.	Nil ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
306	Muniswamy Thavathera Pilly ...	M.	40	H.	Fitter ...	Bangalore ...	,, ...	,, ...	,, ...	,, ...	...	
307	Verayu Thuragan	F.	21	H.	Nil ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
308	Murugasan Valantham	F.	35	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
309	Mumyamah Murugan	F.	70	H.	,, ...	,, ...	,, ...	,, ...	19th June 1898.	,, ...	...	
310	Valayamah Narayenswamy	F.	20	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
311	Kolasiamah Narayenswamy	F.	2	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
312	Mr. J. O. Schooner	M.	42	E.J.	Ticket Collector...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
313	Ponamah Mathoory	F.	26	H.	Nil ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
314	Papamah Mathoory	F.	2	H.	,, ...	,, ..	,, ...	,, ...	,, ...	,, ...	...	
315	Ramperi Mangaldass	M.	30	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	

No.	Names.	Sex.	Age.	Caste.	Occupation.	Place of Birth.	Present address.	General Health.	Date of Inoculation. 1st Time.	Date of Inoculation. 2nd Time.	Dose last time.	Remarks.
316	Subharayuloo Rangaswamy ...	M.	35	H.	Fitter	Bangalore ...	Hubli ...	Good ...	20th June 1898.	22nd June 1898.	...	
317	Anmiany Murugasan ...	F.	20	H.	Nil ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
318	Ederkhan Mohmed ...	M.	19	M.	Apprentice Fitter.	,, ...	,, ...	,, ...	16th June 1898.	,, ...	...	
319	Vithalrow Ganapattirow ...	M.	35	H.	Moulder ...	,, ...	,, ...	,, ...	17th June 1898.	,, ...	...	
320	Latchumal Ramaswamy ...	F.	55	H.	Nil ...	Miraj ...	,, ...	,, ...	,, ...	,, ...	...	
321	Ammanaha Munswamy ...	F.	35	H.	,, ...	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
322	Gavariamah Munswamy ...	F.	18	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
323	Channamah Ramswamy ...	F.	15	H.	,, ...	Hindupur ...	,, ...	,, ...	,, ...	,, ...	...	
324	Gangamah Munswamy ...	F.	8	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
325	Goridu Ragooloo Munswamy ...	F.	6	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
326	Mr. J. P. Netto	M.	25	E.	Chargeman ...	Balapore ...	,, ...	,, ...	,, ...	,, ...	...	
327	Abdul Raiff Hassankha ...	M.	27	M.	Pambi ...	,, ...	,, ...	,, ...	21st June 1898.	24th June 1898.	...	
328	Ramji Luxuman	M.	35	H.	Holder ...	Gova ...	,, ...	,, ...	19th June 1898.	,, ...	...	
329	Styramaloo Anduragagappa ...	M.	26	H.	Pointsman ...	Karád ...	,, ...	,, ...	20th June 1898.	,, ...	...	
330	Parasuram Chumappah ...	M.	39	H.	Nil ...	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
331	Budan Fakirsab	M.	11	M.	,, ...	Bellary ...	,, ...	,, ...	18th June 1898.	,, ...	...	
332	Babaji Ettoo	M.	35	H.	Hammerman ...	Bijápur ...	,, ...	,, ...	,, ...	,, ...	...	
333	Verappen Kandupilly Muthoswamy	M.	30	H.	Boilermaker ...	,, ...	,, ...	,, ...	21st June 1898.	,, ...	...	
334	S. Manikan Subrayaloo ...	M.	25	H.	Fireman ...	,, ...	,, ...	,, ...	19th June 1898.	,, ...	...	
335	Evudeen Archev	M.	12	H.	Nil ...	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
336	Rajah Parboo	M.	21	H.	Fitter ...	,, ...	,, ...	,, ...	18th June 1898.	,, ...	...	
337	John Archer	M.	10	E.	Nil	,, ...	,, ...	,, ...	21st June 1898.	,, ...	...	
338	Bholi Chaitram	M.	20	H.	Carpenter ...	,, ...	,, ...	,, ...	18th June 1898.	,, ...	...	
339	Bhamerjit Harkidam ...	M.	40	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
340	Hanmaka Peeracharan ...	F.	20	H.	Nil ,, ...	Ahmedabad...	,, ...	,, ...	19th June 1898.	,, ...	...	
341	Chinna Guruswamy ...	M.	22	H.	Carpenter ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
342	Tukaram Rama	M.	50	H.	Dhobi ...	,, ...	,, ...	,, ...	18th June 1898.	,, ...	...	
343	Luxuman Tukaram ...	M.	14	H.	Nil ...	,, ...	,, ...	,, ...	20th June 1898.	,, ...	...	
344	Kadersab Fakirsab ...	M.	14	M.	,, ...	Madras ...	,, ...	,, ...	,, ...	,, ...	...	
345	Mussabee Imamsab ...	M.	22	M.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
346	Imam Deluwar	F.	34	H.	Mali ...	Karád ...	,, ...	,, ...	,, ...	,, ...	...	
347	Rahimanbee Abdul Rahimankha	F.	10	M.	Nil ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
348	Lognagi Durgaji... ...	F.	8	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
349	Dhurpati Anyaba ...	F.	9	H.	,, ...	,, ...	,, ...	,, ...	17th June 1898.	,, ...	...	
350	Jiju Maruti	F.	25	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
351	Malhari Matadin ...	M.	16	H.	Fitter ...	Belgaum ...	,, ...	,, ...	13th June 1898	,, ...	...	
352	Seewa Deoji	M.	67	H.	Nil ...	,, ...	,, ...	,, ...	15th June 1898.	,, ...	...	
353	Padaji Mahadoo	M.	40	H.	Maistry ...	Poona ...	,, ...	,, ...	12th June 1898.	,, ...	...	
354	Mariyan Kolerft... ...	M.	8	C.	Nil ...	,, ...	,, ...	,, ...	17th June 1898.	,, ...	...	
355	Sayana Anna	M.	8	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
356	Marima Chowri	F.	7	N.C.	,, ...	Bombay ...	,, ...	,, ...	13th June 1898.	18th June 1898.	...	
357	Chandbai Allyrahman ...	F.	35	Jew.	,, ...	Madras ...	,, ...	,, ...	.....	24th June 1898.	...	
358	Esterbai Moses Salomen ...	F.	30	,,	,, ...	,, ...	,, ...	,, ...	15th June 1898.	,, ...	...	
359	Dinabai Haim Salomen ...	F.	28	,,	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
360	Kundan Rambux ...	M.	28	M.	Barber ...	Bellary ...	,, ...	,, ...	,, ...	,, ...	...	
361	Estarbai Salomen ...	F.	12	Jew.	Nil ...	Kehim ...	,, ...	,, ...	,, ...	,, ...	...	
362	Muriambai Salomen ...	F.	33	,,	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
363	Bachubai Benjaman ...	F.	11	,,	,, ...	Guntakal ...	,, ...	,, ...	17th June 1898.	,, ...	...	
364	Sherobai Juda Ederohvi ...	F.	20	M.	,, ...	Kehim ...	,, ...	,, ...	,, ...	,, ...	...	
365	Subramani Durgaya ...	M.	12	H.	,, ...	,, ...	,, ...	,, ...	13th June 1898.	,, ...	...	
366	Guruswamy Patha Ramswamy	M.	25	H.	Carpenter ...	,, ...	,, ...	,, ...	17th June 1898.	,, ...	...	
367	Aya Dore Arokyaswamy ...	M.	26	C.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
368	Banshiram Kansing ...	M.	22	H.	Nil ,, ...	Dhárwár ...	,, ...	,, ...	18th June 1898.	,, ...	...	
369	Baloo Baboo	M.	21	H.	Chaukidár ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
370	Shetuva Rama	M.	40	H.	Cooly ...	,, ...	,, ...	,, ...	19th June 1898.	,, ...	...	
371	Rajesab Sultan	M.	20	M.	Nil ...	Arkonum ...	,, ...	,, ...	20th June 1898.	26th June 1898.	...	
372	Manoharum Mutoveloo Pilly	M.	8	N.C.	,, ...	Agra ...	,, ...	,, ...	26th June 1898.	,, ...	...	
373	Atta Rodulus	M.	10	,,	,, ...	Jejuri ..	,, ...	,, ...	,, ...	,, ...	...	
374	Mariama Kaliroph ...	F.	20	,,	,, ...	Sátára ...	,, ...	,, ...	,, ...	,, ...	...	
375	Chera Kaliroph ...	F.	5	,,	,, ...	Mysore ...	,, ...	,, ...	,, ...	,, ...	...	
376	Krishnai Chaturoji ...	M.	12	H.	,, ...	Nandyal ...	,, ...	,, ...	,, ...	,, ...	...	
377	Errapa Chimappa ...	M.	32	H.	Sweeper ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
378	Doorga Durgappah ...	M.	25	H.	,, ...	,, ...	,, ...	,, ...	,, ...	,, ...	...	
						Dhárwár ...	,, ...	,, ...	,, ...	,, ...	...	
						,, ...	,, ...	,, ...	,, ...	,, ...	...	

No.	Names.	Sex.	Age.	Caste.	Occupation.
379	Baijabai Maisooji	F.	35	M.	*Nil*
380	Bahupaul Dhumram	M.	30	H.	Carpenter
381	Mohmed Hoosein	M.	45	M.	Fitter
382	Anyaba Nursoba	M.	35	H.	,,
383	Anganbai Dushrath	F.	2	H.	*Nil*
384	Ramsuk Jayaram	M.	25	H.	Contractor
385	Kisuna Jeewana	M.	22	H.	Carpenter
386	Mukhram Puranmal	M.	18	H.	,,
387	Muniram Ramnund	M.	35	H.	,,
388	Jawari Shunker	F.	20	H.	*Nil*
389	Amthi Kaloo	F.	20	H.	,,
390	Mohmed Abboo	M.	35	M.	Fitter
391	Ramdut Sudoo	M.	35	H.	Carpenter
392	Velangani Antoni	F.	18	N.C.	Cook
393	Shikander Ebrahm	M.	14	M.	Peon, Stores
394	Narayan Baluji	M.	25	H.	Clerk, Loco.
395	Mariam Dias	F.	11	N.C.	*Nil*
396	Carolin Dias	F.	6	,,	,,
397	Bhagubai Gopinathji	H.	30	H.	,,
398	Khusal Amichand	M.	40	H.	Blacksmith
399	Bukala Boju	F.	4	H.	*Nil*
400	Kamlabai Boju	F.	2	H.	,,
401	Mamraj Khusal	M.	20	H.	Carpenter
402	Venkatu Subbarow	M.	25	H.	Head Clerk
403	Baswantappah Yarsad	M.	30	H.	*Nil*
404	Mr. J. J. Britto	M.	27	Eur.	Examiner
405	Ambaram Rama	M.	33	H.	Blacksmith
406	Manchand Rama	M.	22	H.	,,
407	Veerbai Edulji	F.	54	P.	*Nil*
408	Dhunbai Jamsetji	F.	38	P.	,,
409	Bachubai	F.	15	P.	,,
410	Eurappah Gursadappah	M.	14	H.	Office-boy
411	Ratha Mahgu	M.	29	H.	Holder
412	Mulla Mohideen	M.	35	M.	Saw-miller
413	Govindamah Subbarayaloo	F.	10	H.	*Nil*
414	Chowry Rangaswamy	M.	30	H.	Butler
415	Yeshavanth Dawalata	M.	32	H.	Trollyman
416	Aron Joseph	M.	14	C.	*Nil*
417	Rama Marutee	M.	25	H.	Trollyman
418	Ramkrishna Bapooji Thorat	M.	20	H.	Blacksmith
419	Venkapen Subanapen	M.	12	H.	*Nil*
420	Nursappah Yellapah	M.	60	H.	Milkman
421	Hanmant Annaji	M.	14	H.	*Nil*
422	Dewidas Gopal	M.	22	H.	Signaller
423	Sangims Gunapa	M.	30	H.	*Nil*
424	Mahadav Bapooji	M.	28	H.	Merchant
425	Venkatesh Timanachary	M.	12	H.	*Nil*
426	Shitaram Vishwambhar	M.	63	H.	,,
427	Bhikooshastri Babooshastri	M.	60	H.	,,
428	Ladsaheb Fakirsaheb	M.	50	H.	,,
429	Dadesaheb Maliksaheb	M.	16	H.	,,
430	E. Revan Subbraw	F.	40	H.	,,
431	Fakeerama Jenumsaheb	F.	30	M.	,,
432	Kerapa Govindapa	M.	50	H.	,,
433	Venkatsing Mawgatsing	M.	40	H.	,,
434	Hanmantrav Raghwandrarav	M.	32	H.	,,

Place of birth.	Present address.	General health.	Date of Inoculation. First time.	Date of Inoculation. Second time.	Dose each time.	Remarks.
Dhárwár	Hubli	Good	22nd June 1898.	26th June 1898		
Sátárá	,,	,,	19th June 1898.	,,		
,,	,,	,,	,,	,,		
Sholápur	,,	,,	12th June 1898.	,,		
Dhárwár	,,	,,	17th June 1898.	,,		
,,	,,	,,	19th June 1898.	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Surat	,,	,,	,,	,,		
,,	,,	,,	12th June 1898.	,,		
Ahmedabad	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	19th June 1898.	,,		
,,	,,	,,	17th June 1898.	,,		
,,	,,	,,	21st June 1898.	,,		
Hyderabad	,,	,,	24th June 1898.	,,		
.....	,,	,,	12th June 1898.	,,		
Madras	,,	,,	,,	,,		
,,	,,	,,	19th June 1898.	,,		
Ahmedabad	,,	,,	17th June 1898.	,,		
,,	,,	,,	19th June 1898.	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	21st June 1898.	,,		
,,	,,	,,	17th June 1898.	,,		
Bellary	,,	,,	20th June 1898.	,,		
Dhárwár	,,	,,	22nd June 1898.	27th June 1898.		
,,	,,	,,	17th June 1898.	29th June 1898.		
,,	,,	,,	26th June 1898.	28th June 1898.		
Surat	,,	,,	,,	30th June 1898.		
Navsari	,,	,,	,,	,,		
Gadag	,,	,,	,,	,,		
Dhárwár	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	Kasapur	,,	,,	,,		
Chanapatna	Hubli	,,	20th June 1898.	,,		
,,	,,	,,	,,	,,		
Sátára	,,	,,	,,	,,		
Bangalore	,,	,,	,,	,,		
Hubli	,,	,,	,,	,,		
,,	,,	,,	21st June 1898.	,,		
,,	,,	,,	26th June 1898.	29th June 1898.		
,,	,,	,,	,,	,,		
Miraj	,,	,,	,,	,,		
Dhárwár	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Sirur	,,	,,	,,	,,		
Betgeri	,,	,,	,,	,,		

No.	Names.	Sex.	Age.	Caste.	Occupation.	Place of birth.	Present address.	General health.	Date of Inoculation. First time.	Date of Inoculation. Second time.	Dose each time.	Remarks.
435	Yellapa Buduppa	M.	12	H.	Nil	Hubli	Hubli	Good	26th June 1898.	29th June 1898.		
436	Hanmantapa Fakirapa	M.	35	H.	,,	,,	,,	,,	,,	,,		
437	Govinda Durgapa	M.	10	H.	,,	,,	,,	,,	,,	,,		
438	Bhimaya Mallapa	M.	15	H.	,,	,,	,,	,,	,,	,,		
439	Gangya Mallapa	M.	10	H.	,,	,,	,,	,,	,,	,,		
440	Hachapa Budapa	M.	25	H.	,,	,,	,,	,,	,,	,,		
441	Fakeera Fakirapa	M.	16	H.	,,	,,	,,	,,	,,	,,		
442	Nilya Sucaryapa...	M.	18	H.	,,	,,	,,	,,	,,	,,		
443	Baswantapah Bhimapa	M.	32	H.	,,	,,	,,	,,	,,	,,		
444	Yellya Bhimapa ...	M.	18	H.	,,	,,	,,	,,	,,	,,		
445	Rawya Shidapa ...	M.	3	H.	,,	,,	,,	,,	,,	,,		
446	Maduri Krishna ...	F.	6	H.	,,	,,	,,	,,	,,	,,		
447	Krishnapa Tandrayapen	M.	35	H.	Cooly	,,	,,	,,	,,	,,		
448	Rahiman Ebrahim	M.	28	M.	Nil ...	Bágalkot	,,	,,	,,	,,		
449	Nanjyapa Virapa	M.	35	H.	Carpenter	,,	,,	,,	,,	,,		
450	J. Kyaslis ...	M.	46	N. C.	Nil ...	Alimati	,,	,,	24th June 1898.	,,		
451	Amarapa Narayenapa	M.	25	H.	,, ...	Harlápur	,,	,,	,,	,,		
452	Husenma Kamalsaheb	F.	60	M.	,, ...	Bangalore	,,	,,	,,	,,		
453	Ganoo Arjoon ...	M.	60	H.	,, ...	Gadag	,,	,,	,,	,,		
454	Sabramani Jaganath	M.	12	H.	Telegraph Peon .	Hubli	,,	,,	,,	,,		
455	Shivapa Kurchapa	M.	14	H.	Nil	Tásgaon	,,	,,	,,	,,		
456	Persapa Kurchapa	M.	60	H.	,,	Bellary	,,	,,	,,	,,		
457	Halgova Hanuman	F.	30	H.	,,	Hubli	,,	,,	,,	,,		
458	Undhi Subhanah	F.	30	H.	,,	,,	,,	,,	,,	,,		
459	Sundrabai ...	F.	10	H.	,,	Punjáb	,,	,,	,,	,,		
460	Hanumavah Kaneapah	F.	15	H.	,,	,,	,,	,,	,,	,,		
461	Savaka Hanchuappa	F.	30	H.	,,	Kudchi	,,	,,	,,	,,		
462	Chanuvah Budappah	F.	12	H.	,,	Hubli	,,	,,	,,	,,		
463	Bhimah Budappah	F.	30	H.	,,	,,	,,	,,	,,	,,		
464	Lugava Bhimappa	F.	10	H.	,,	,,	,,	,,	,,	,,		
465	Ramaya Chanappa	F.	12	H.	Cooly	,,	,,	,,	,,	,,		
466	Mulga Chimappa	M.	25	H.	Sweeper	Bellary	,,	,,	26th June 1898.	30th June 1898		
467	Nilaka Narapa ...	F.	60	H.	,,	,,	,,	,,	,,	,,		
468	Chunga Chinia ...	M.	20	H.	,,	,,	,,	,,	,,	,,		
469	Chowriamah Antoni	F.	60	Ch.	Nil	,,	,,	,,	,,	,,		
470	Jija Malloo ...	F.	30	H.	,,	Madras	,,	,,	19th June 1898.	,,		
471	Buja Malloo ...	F.	55	H.	,,	Khatáv	,,	,,	20th June 1898.	,,		
472	Ganesh Narayen...	M.	18	H.	Carpenter	Yellápur	,,	,,	,,	,,		
473	Awoosan Kalika...	M.	30	H.	,,	Sátára	,,	,,	17th June 1898.	,,		
474	Badree Bhagoo ...	M.	26	H.	,,	Lakhnow	,,	,,	,,	,,		
475	Joshi D. Cruze ...	M.	6	Ch.	Nil	,,	,,	,,	,,	,,		
476	Janki Madri ...	F.	4	H.	,,	Bombay	,,	,,	,,	,,		
477	Madrima Parashram	F.	25	H.	,,	Miraj	,,	,,	,,	,,		
478	Marimutoo Maniam	F.	6	H.	,,	Dhárwár	,,	,,	,,	,,		
479	Jayanabee Rahimbux	F.	10	M.	,,	Bellary	,,	,,	,,	,,		
480	Arimaniam ...	F.	5	H.	,,	Hubli	,,	,,	21st June 1898.	,,		
481	A. Hookey ...	M.	23	Eur.	,,	,,	,,	,,	17th June 1898.	,,		
482	Punnama Manica	F.	25	H.	,,	Bombay	,,	,,	21st June 1898.	,,		
483	Marthu ...	F.	25	H.	,,	Madras	,,	,,	,,	,,		
484	Triju D. Cruze ...	F.	4	N. Ch	,,	,,	,,	,,	,,	,,		
485	Fileman Caslus ...	F.	20	,,	,,	Goa	,,	,,	,,	,,		
486	Mhakoo Morarba...	F.	30	H.	,,	Bellary	,,	,,	,,	,,		
487	Durgabai Khushali	F.	25	H.	,,	Sátára	,,	,,	17th June 1898.	,,		
488	Kariyan Munuyan	M.	38	H.	,,	Sholápur	,,	,,	,,	,,		
489	Kanthony Ellapa	M.	59	H.	Porter	Arkad	,,	,,	,,	,,		
490	Vallangamah Varikbai	F.	2½	H.	Nil	,,	,,	,,	,,	,,		
491	Challayamah Kurujan	F.	2	H.	,,	Bangalore	,,	,,	,,	,,		
492	Narayenswamy Narasan	M.	35	H.	Porter	,,	,,	,,	,,	,,		
493	Murugan Ponuswamy	M.	27	H.	,,	Gubbi	,,	,,	,,	,,		
494	Govind Ponuswamy	M.	45	H.	Cook	,,	,,	,,	,,	,,		
495	Chimama Govindoo	F.	6	H.	Nil	Madras	,,	,,	21st June 1898.	,,		
496	Arumugam Govindoo	M.	3	H.	,,	,,	,,	,,	,,	,,		
497	Pulamah Ramapah	F.	48	H.	,,	,,	,,	,,	,,	,,		
498	Sundravah Nagusappah	F.	35	H.	,,	Bellary	,,	,,	19th June 1898.	,,		
499	Ampeyaga Nagu	F.	20	H.	,,	Yellápur	,,	,,	,,	,,		
						Bellary	,,	,,	,,	,,		

No.	Names.	Sex.	Age.	Caste.	Occupation.
500	Tai Ganguppah ...	F.	16	H.	Nil
501	Mr. Narayenree Iyangu ...	M.	30	H.	Guard
502	Mastansab Subansab ...	M.	35	M.	Nil
503	Jayaram Basu ...	M.	35	H.	"
504	Kondu Jayaram ...	F.	10	H.	"
505	Luxumbai Jayaram ...	F.	8	H.	"
506	Menappah Ellappa ...	M.	25	H.	Carpenter
507	Nathuram Jayaram ...	M.	40	H.	Maistri
508	Jeewlal Parasad ...	M.	16	H.	App. Carpenter
509	Kismalal Muthoolal ...	M.	25	H.	Carpenter
510	Maheraw Sundra ...	M.	30	H.	"
511	Lalsing Hemraj	M.	25	H.	"
512	Bhagwan Herfol... ...	M.	29	H.	Cooly
513	David Joseph	M.	26	C.	Nil
514	Sakharam Babaji ...	M.	36	H.	Contractor
515	Subaram Jugal Kisur ...	M.	25	H.	Carpenter
516	Fukirapa Peerappa ...	M.	24	H.	Batteryman
517	Kaluram Hamama ...	M.	30	H.	Nil ...
518	Ramchandra Mukund ...	M.	25	H.	Carpenter
519	Mary Hanumanta ...	M.	18	H.	Masalmán
520	Jevan Kasavaram ...	M.	35	H.	Carpenter
521	Husman Vasurmad ...	M.	7	M.	Nil
522	Bayee Vasurmohmed ...	M.	11	M.	"
523	Vani Bai Mohmed ...	M.	25	M.	"
524	Khushaliram Sivaram ...	M.	40	H.	Carpenter
525	Dattatraya Vishnoo Naik ...	M.	25	H.	Clerk
526	Ebrahim Ahmedkha ...	M.	10	M.	Cooly
527	Ramswarup Audu ...	M.	20	H.	Carpenter
528	Virgoo Kesoram... ...	M.	40	H.	"
529	Hoosan Padappah ...	M.	28	H.	Sweeper
530	Sundramah Malarappa ...	F.	37	H.	Nil
531	Martand Pandurang ...	M.	25	H.	Fitter
532	Narayensing Heerasing ...	M.	32	H.	"
533	Narsu Rajunah	M.	33	H.	Rivetter
534	Bachameyah Nabeeshah ...	M.	33	M.	Horseman
535	Dhaji Rama	M.	22	H.	Cooly
536	Magan Narsee	M.	22	H.	Blacksmith
537	Veeraswamy Ramswamy ...	M.	45	H.	Porter
538	Vallan Pannan	M.	29	H.	"
539	Gopal Chinnaya	M.	23	H.	Fitter
540	Kuttipayan Ellapah ...	M.	45	H.	Porter
541	Muniyan Narasan ...	M.	27	H.	"
542	Raju Hooseinsab ...	M.	35	M.	"
543	Muthappan Kullai ...	F.	46	H.	Masal
544	Chowry Marujan ...	M.	47	H.	Porter
545	Durugupilly Thova ...	M.	29	H.	Fitter
546	Parasa Kanakapa ...	M.	65	H.	Cooly
547	Mr. Framji Edulji ...	M.	27	P.	Driver
548	Mackal Chowry	M.	13	H.	Peon
549	Themmana Bamappah ...	M.	25	H.	Contractor
550	Rammappah Govindappa ...	M.	45	H.	"
551	Venkappah Malloo Kondrappa ...	M.	13	H.	Nil
552	Themnavah Ramappa ...	F.	30	H.	"
553	Hanunmappah Pakerappa ...	M.	29	H.	Cooly
554	Hammanth Guruappah ...	M.	16	H.	Nil
555	Yellavah Pakerappah ...	F.	45	H.	"
556	Thimmanah	M.	50	H.	Stone-cutter
557	Hanumavah	F.	37	H.	Nil
558	Thennakah Malookondapa ...	F.	39	H.	"
559	Venkappah Malkondapa ...	M.	1	H.	"
560	Sheshaya Hanumanthapa ...	M.	4	H.	"
561	Guruappa Durugapal ...	M.	3	H.	"
562	Hanumavah Themnah ...	F.	5	H.	"
563	Guruappah Gurapah ...	M.	65	H.	"
564	Giddappah Temmana ...	M.	4	H.	"

Place of birth.	Present address.	General health.	Date of Inoculation. First time.	Date of Inoculation. Second time.	Dose each time.	Remarks.
Bellary ...	Hubli ...	Good ...	17th June 1898.	30th June 1898.	...	
Sálem ...	" ...	" ...	26th June 1898.	" ...	...	
Sángli ...	" ...	" ..	24th June 1898	" ...	...	
Kundal ...	" ...	" ...	" ...	" ...	...	
Ahmedabad...	" ...	" ...	19th June 1898.	" ..	...	
Jejuri ...	" ...	" ..	" ...	" ...	...	
Hubli ...	" ...	" ...	26th June 1898	1st July 1898 .	...	
Kasapur ...	" ...	" ..	28th June 1898.	" ..	...	
Mathura ...	" ...	" ...	19th June 1898.	" ...	...	
Indore ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ..	" ...	" ...	...	
Jambgaum ...	" ...	" ...	" ...	" ...	...	
Dobhin ...	" ...	" ...	.....	" ...	...	
" ...	" ...	" ...	19th June 1898.	" ...	...	
Khánápur ...	" ...	" ...	22nd June 1898	" ..	...	
Mathura ...	" ..	" ...	26th June 1898.	" ...	...	
Harikar ...	" ...	" ...	" ...	" ...	...	
Udepur ...	" ...	" ..	.....	" ...	...	
Muthura ..	" ...	" ...	26th June 1898.	" ...	...	
Bangalore ...	" ...	" ...	" ...	" ...	...	
Bikáneer ...	" ...	" ...	19th June 1898.	" ...	...	
Kheda ...	" ...	" ...	" ..	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
Khándva ...	" ...	" ...	" ...	" ...	...	
Rámpur ...	" ...	" ...	" ...	" ...	...	
Kem ...	" ...	" ..	26th June 1898.	4th July 1898 .	...	
Miraj ...	" ...	" ..	1st July 1898 .	" ...	...	
Delhi ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
Bellary ...	" ...	" ...	30th June 1898.	" ...	...	
Madras ...	" ...	" ...	26th June 1898.	" ...	...	
Medhe ...	" ...	" ...	" ...	" ...	...	
Panjáb ...	" ...	" ..	29th June 1898.	" ..	...	
" ...	" ...	" ...	30th June 1898.	" ..	...	
Arsekere ...	" ...	" ...	1st July 1898...	" ..	...	
Chiplun ...	" ...	" ...	29th June 1898.	" ..	...	
Limkhed ...	" ...	" ...	" ...	" ...	...	
Bellary ...	" ...	" ...	18th June 1898.	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
Gadag ...	" ...	" ...	1st July 1898 .	" ...	...	
Bellary ...	" ...	" ...	18th June 1898.	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
Gadag ...	" ...	" ...	" ...	" ...	...	
Arkot ...	" ...	" ...	" ...	" ...	...	
Surat ...	" ...	" ...	26th June 1898.	" ...	...	
Poona ...	" ...	" ...	21st June 1898.	" ...	...	
Dhárwár ...	" ...	" ...	22nd June 1898.	" ..	...	
Hubli ..	" ...	" ...	" ..	" ...	...	
Dhárwár ...	" ...	" ...	29th June 1898.	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	1st July 1898 .	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ..	...	
" ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
Gadag ...	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	
" ..	" ...	" ...	" ...	" ...	...	
" ...	" ...	" ...	" ...	" ...	...	

No.	Names.	Sex.	Age.	Caste.	Occupation.
565	Gerujappah Themunah	M.	14	H.	Nil
566	Durgappah Giriappah	M.	30	H.	Stone-cutter ...
567	Therlappah Themanah	M.	8	H.	Nil ...
568	Geruappah Durugappa	M.	2	H.	,, ...
569	Themmanah Geruappa	M.	25	H.	,, ...
570	Pakera Nagappah	M.	8	H.	,, ...
571	Thenma Hanumanth	M.	30	H.	Gangman ...
572	Parumah Veraswamy	M.	50	H.	Cooly ...
573	Masoo Yesoo	M.	26	H.	,, ...
574	Chunnamah Thenumah	F.	1	H.	Nil ...
575	Giddamah Thenumah	F.	1	H.	,, ...
576	Banjappa Yellapah	M.	8	H.	,, ...
577	Chinthadroo Themnah	M.	9	H.	,, ...
578	Gurumah Hanumatapa	F.	2	H.	,, ...
579	Nanny Mahadu	M.	31	H.	Gangman ...
580	G. Bathavah Durugappah	F.	22	H.	Nil ...
581	Thayamah Ramswamy	F.	30	H.	,, ...
582	Pakervah Nagappah	F.	30	H.	Dhoby ...
583	Guruppah Geriappah	M.	18	H.	Nil ...
584	Nana Keshna	M.	52	H.	Cooly ...
585	Thennanah Donkappa	M.	49	H.	Stone-cutter ...
586	Smith D'Sena	M.	12	Eur.	Nil ...
587	Challapa Rama	M.	42	H.	Panli ...
588	Kondappah Hanumappah	M.	32	H.	Stone-cutter ...
589	Sithavah Hanumanappa	F.	4	H.	Nil ...
590	Purshotum Sukharam	M.	25	H.	Blacksmith ...
591	Gangaram Shunker	M.	25	H.	,, ...
592	Chunilal Guila	M.	22	H.	,, ...
593	Antonii	M.	25	C.	Cook ...
594	Frances Amah France	F.	8	C.	Nil ...
595	Hyath Mohideen...	M.	4	M.	,, ...
596	Walimah Chandraman	F.	35	H.	Cook ...
597	Mangamah Subbayah	F.	35	H.	Nil ...
598	Sewraji Matadeen	F.	6	H.	,, ...
599	Myrollen Mothura	M.	45	H.	Cooly ...
600	Mohmedkha Abdul Rahilukha	M.	22	M.	Rivetter ...
601	Yakoob Haim Salomen	F.	8	Jew	Nil ...
602	Sileman Juda Ebrahim	M.	6	,,	,, ...
603	Kashibai Manachand	F.	18	H.	,, ...
604	Kashibai Malkargoon	F.	35	H.	,, ...
605	Sidavah Rajapa	F.	12	H.	,, ...
606	Ambavah Rayapah	F.	30	H.	,, ...
607	Foola Raju	F.	7	H.	,, ...
608	Parwati Luxuman	F.	22	H.	,, ...
609	Sagoona Ganpati...	F.	18	H.	,, ...
610	Tulsee Jotee	F.	35	H.	,, ..
611	Luxumi Sayamna	F.	35	H.	,, ...
612	Narsamah Ramayah	F.	28	H.	,, ...
613	Bhiwabai Chatoo	F.	30	H.	,, ...
614	Yellamah Sayanah	F.	22	H.	,, ...
615	Jana Abdool Karim	F.	25	M.	,, ...
616	Rewoo Narsappa...	F.	25	H.	,, ...
617	Hojoobi Chandasha	F.	30	M.	,, ...
618	Jayanabi Allisab	F.	25	M.	,, ...
619	Dr. Armagam Mudliar	M.	37	H.	Civil Surgeon ...
620	Saliga Mariga	M.	2	H.	Nil ...
621	Pedga Mariga	M.	3	H.	,, ..
622	Durugamah Chanchapa	F.	8	H.	,, ..
623	Lingavah Durgayah	F.	18	H.	Sweeper ...
624	Nagamah	F.	30	H.	,, ...
625	Sunkah Nariappa	M.	10	H.	Nil ,, ...
626	Ganga Thimmappah	M.	20	H.	,, ...
627	Chunnamah Marrigu oo	F.	9	H.	,, ...
628	Nagamah Kalliriga	F.	7	H.	,, ..
629	Marigah Kalliriga	M.	30	H.	Sweeper ...

Place of birth.	Present address.	General health.	Date of Inoculation. First time.	Date of Inoculation. Second time.	Dose each time.	Remarks.
Hubli ...	Hubli ...	Good ...	1st July 1898 .	4th July 1898 .	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Kasápur ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Masur ...	,, ...	,, ...	,, ...	,, ...	...	
Shindgi ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Londa ...	,, ...	,, ...	,, ...	,, ...	...	
Betgeri ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	29th June 1898.	,, ...	...	
,, ...	,, ...	,, ..	,, ...	,, ...	...	
Hángal ...	,, ...	,, ...	,, ...	,, ...	...	
Khánápur ...	,, ...	,, ...	,, ...	,, ..	...	
,, ...	,, ...	,, ...	1st July 1898 .	,, ...	...	
Chittore ...	,, ...	,, ...	30th June 1898.	,, ..	...	
Alnávar ...	,, ...	,, ...	1st July 1898...	,, ...	...	
Mugad ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ..	..	
Poona ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Khadki ...	,, ...	,, ...	,, ...	,, ...	...	
Karjat ...	,, ...	,, ...	,, ..	,, ...	...	
Bangalore ...	,, ...	,, ...	29th June 1898.	,, ...	...	
Haripur ..	,, ...	,, ...	26th June 1898.	,, ...	...	
Bellary ...	,, ...	,, ...	29th June 1898.	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Multán ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	17th June 1898.	,, ...	...	
Mustábád ...	,, ...	,, ...	,, ...	,, ...	...	
Rámpur ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Gokák ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Nándgaon ..	,, ...	,, ...	,, ...	,, ...	...	
Belgaum ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Nanjni ...	,, ...	,, ...	,, ...	,, ...	...	
Rweri ...	,, ...	,, ...	,, ...	,, ...	...	
Sholápur ...	,, ...	,, ...	,, ...	,, ...	...	
.....	,, ...	,, ...	,, ...	,, ...	...	
.....	,, ...	,, ...	,, ...	,, ...	...	
.....	,, ...	,, ...	,, ...	,, ...	...	
.....	,, ...	,, ...	,, ...	,, ...	...	
Mysore ...	Shimoga ...	,, ...	26th June 1898.	,, ...	...	
Dhárwár ...	Hubli ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
.....	,, ...	,, ...	,, ...	,, ...	...	
.....	,, ...	,, ...	,, ...	,, ..	...	
Rannigunta...	,, ...	,, ...	,, ..	,, ...	...	

No.	Names.	Sex.	Age.	Caste.	Occupation.
630	Kallamah Kollari	F.	11	H.	Nil
631	Marima Danfrukasam	F.	40	M.	Cook
632	Mallia Luxmayah	M.	15	H.	Nil
633	Nayayanah Noori	F.	35	N. C.	Cook
634	Budhansab Oomersab	M.	40	M.	Peon
635	Rayappa Venkatachalu	M.	30	H.	Porter
636	A. B. D'Selva	M.	24	Portug	Fireman
637	Rangaswamy Ramswamy	M.	18	H.	Servant
638	Venkat Luxumi V. Subbaram	F.	18	H.	Nil
639	Subanah Gundapa	F.	11	H.	,,
640	Satiriamah Gundappa	F.	5	H.	,,
641	Rajoo Satvaj	F.	30	H.	,,
642	Mr. Maruti Tukaram	M.	42	H.	Hospital Assistant
643	Luxuman Subnaba	M.	39	H.	Do. Servant
644	Gangavah Hanmantrao	F.	25	H.	Nil
645	Rajaram Padmaji	M.	7	H.	,,
646	Bhimasha Padamaji	M.	12	H.	,,
647	Shita Padamaji	F.	8	H.	,,
648	Padamaji Nana	M.	40	H.	Turner
649	Shatwaji Khandoo	M.	28	H.	Farmer
650	Luxamawa Adwyapa	F.	50	H.	Nil
651	Sakaryawa Mallasi	F.	25	H.	,,
652	Fakeerwa Bennapa	F.	30	H.	,,
653	Tipya Tondya	F.	40	H.	,,
654	Ramoo Hanmantrao	M.	14	H.	,,
655	Yellapa Mallapa	M.	6	H.	,,
656	Kenchawa Minayapa	M.	2	H.	,,
657	Sita Ramchandra	F.	40	H.	,,
658	Bhimava Birupa	F.	40	H.	,,
659	Makatoombi Mohideen	F.	30	H.	,,
660	Yellappa Mallasha	F.	40	M.	,,
661	Tippoo Krishna	M.	4	H.	,,
662	Bahinabai Annaroo	F.	10	H.	,,
663	Chinnawa Basappa	F.	80	H.	,,
664	Ningawa Bhimana	F.	12	H.	,,
665	Timawa Ballappa	F.	12	H.	,,
666	Balawa Parshya	F.	16	H.	,,
667	Luxumibai Krishnaji	F.	10	H.	,,
668	Tipana Dhondyapa	F.	16	H.	,,
669	Tricapa Dhondyapa	F.	10	H.	,,
670	Karyawa Sakuriyapa	M.	8	H.	,,
671	Kallapa Dhondyapa	F.	10	H.	,,
672	Awama Bheemanah	M.	4	H.	,,
673	Tippawah Parasana	F.	25	H.	,,
674	Thorasavah Parasana	F.	8	H.	,,
675	Nagavah Adavayappa	F.	30	H.	,,
676	Gangabai	F.	10	H.	,,
677	Hanama Bheemana	F.	37	H.	,,
678	Gadgyam Gumapa	M.	6	H.	,,
679	Tepava Shennarow	F.	30	H.	,,
680	Marujapa Fakeerapa	F.	30	H.	,,
681	Narayen Gundachya	M.	50	H.	,,
682	Yellapa Bheema	M.	11	H.	,,
683	Venkapa Rodrapa	M.	11	H.	,,
684	Rajoo Ganpatrao	M.	20	H.	,,
685	Shetawa Fakeerapa	M.	40	H.	,,
686	Dewapa Fakeerapa	M.	22	H.	,,
687	Sheetaram Nishamb Naik	M.	5	H.	,,
688	Dyaman Kallyan	M.	65	H.	,,
689	S. Muthuwaloo Tham Pilly	F.	32	H.	,,
690	Santojiraw Ramchandrarao	M.	35	N. C.	Clerk
691	Jaya Bhiwa	M.	25	H.	,,
692	Mr. Heralal Magansing	F.	25	H.	Nil
693	Ramsing Ramchandra	M.	35	H.	,,
694	Subbaya Vayapira	M.	32	H.	.....
		M.	37	H.	Painter
					Fitter cooly

Place of birth.	Present address.	General Health.	Date of Inoculation. 1st Time.	Date of Inoculation. 2nd Time.	Dose each time.	Remarks.
Rannigunta	Hubli	Good	26th June 1898.	4th July 1898		
,,	,,	,,	,,	,,		
Nandyal	,,	,,	,,	,,		
Nellore	,,	,,	,,	,,		
Hubli	,,	,,	,,	,,		
Guntkal	,,	,,	21st June 1898.	,,		
Madras	,,	,,	24th June 1898.	,,		
Bangalore	,,	,,	,,	,,		
,,	,,	,,	26th June 1898.	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Poona	,,	,,	24th June 1898.	,,		
Tásgaon	,,	,,	,,	,,		
.....	,,	,,	20th June 1898.	5th July 1898		
Karád	,,	,,	26th June 1898.	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Allikati	,,	,,	,,	,,		
Kudchi	,,	,,	,,	,,		
Hubli	,,	,,	,,	,,		
Gadag	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Punjáb	,,	,,	,,	,,		
Hubli	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Madras	,,	,,	,,	,,		
Dhárwár	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Hubli	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Gadag	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Háveri	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Gudgeri	,,	,,	,,	,,		
Hubli	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Dhárwár	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
,,	,,	,,	,,	,,		
Kheda	,,	,,	,,	,,		
Trichanpalli	,,	,,	,,	,,		
Mysore	,,	,,	1st July 1898	,,		
Gunji	,,	,,	26th June 1898.	,,		
Ahmedabad	,,	,,	,,	,,		
Madras	,,	,,	30th June 1898.	,,		
,,	,,	,,	1st July 1898	,,		

No.	Name.	Sex.	Age.	Caste.	Occupation.
695	Bheemaya Venkappa ...	M.	14	H.	Nil
696	Parathasarally Rangaswamy...	M.	22	H.	Lifter
697	Garsi Joseph ...	F.	8	C.	Nil
698	Munuswamy Arunachalum ...	M.	45	H.	Painter
699	Abbaya Chimnaya ...	M.	30	H.	Butler
700	Thomas Aruland... ...	M.	12	C.	Cook
701	Martand Kedari	M.	35	H.	Nil
702	Hanumant Tunachayu ...	M.	16	H.	Student
703	Kondi Soma	M.	30	H.	Trollyman
704	Ashyama Budansab ...	F.	7	M.	Nil
705	Rangswamy Rangswamy ...	M.	40	M.	,,
706	Luxuman Ratanswamy ...	F.	14	H.	Ayah
707	Hamapapadi Ratanswamy ...	M.	6	H.	Nil
708	Velaid Ratanswamy ...	M.	10	H.	,,
709	Tipi Nathoo	F.	30	H.	,,
710	Sabya Bhiwa	M.	10	H.	,,
711	Nathookhan Husenkhan ...	M.	40	M.	Peon
712	Tatya Jagoo	M.	39	H.	Trollyman
713	Bashya Gamapa	M.	25	H.	Peon
714	Shama Matadewa ...	M.	25	H.	Nil
715	Yanopurgao Joseph ...	M.	10	C.	,,
716	Dhondo Dharmaji ...	F.	30	H.	,,
717	Santapa Shetiba	M.	30	H.	Barber
718	Bhanaji Kashinath ...	M.	12	H.	Student
719	Bhimaji Anarow ...	M.	19	H.	
720	Tipoo Narsapa	M.	12	H.	Nil
721	Luxumbai Krishna ...	F.	60	H.	,,
722	Baban Nashiratam ...	M.	40	M.	Farmer
723	Rakhamabai Ramchandra ...	F.	35	H.	Nil
724	Amnakanoo Raja ...	F.	26	H.	
725	Girjabai Venkobarow ...	F.	13	H.	,,
726	Hamaya Bhima	M.	7	H.	,,
727	Shetwa Malleshpa ...	F.	11	H.	,,
728	Gangawa Hanmunta ...	M.	11	H.	,,
729	Tipawa Ballapa	F.	30	H.	,,
730	Ballawa Parshya	F.	8	H.	,,
731	Karyawa Ankarya ...	F.	12	H.	,,
732	Nagawi Adwyapa ...	F.	11	H.	,,
733	Bhagirthi Nagosa ...	F.	10	H.	,,
734	Yelloobai Krishna ...	F.	10	H.	,,
735	Yelloobai Nagosa ...	F.	8	H.	,,
736	Chinawa Basapa	F.	25	H.	,,
737	Luxumavah Adveapah ...	F.	12	H.	,,
738	Parshya Dadappah ...	F.	60	H.	,,
739	Rajgopal Allybux ...	M.	32	H.	Barber
740	Thanga Raju Allybux ...	M.	6	M.	Cook's son
741	Khandoo Khetiwah ...	F.	7	M.	Cook's daughter...
742	Ganappa Keroba... ...	M.	35	H.	Barber
743	Rayavah Fakirgowda ...	M.	50	H.	Farmer
744	Bhimavah Venkappa ...	F.	50	H.	Nil
745	Parashram Daji	F.	50	H.	,,
746	Ramchandra Babaji ...	M.	35	H.	P. Naik
747	Shaik Farid Shaik Ahmed ...	M.	30	H.	P. Constable
748	Dinkar Martand... ...	M.	30	M.	
749	Gangasing Nathasing ...	M.	25	H.	,,
750	Jeewi Panachand ...	M.	25	H.	,,
751	Sadoosing Chandasing ...	F.	30	H.	,,
752	Dhondu Tukaram ...	M.	32	H.	Nil
753	Mr. Veer Raghavrao ...	F.	20	H.	,,
754	A. Gregory	M.	19	H.	,,
755	Chimmapa Timannah ...	M.	20	N. C.	Sub-Inspector
756	Mathyallama Timramah ...	M.	30	H.	Painter
757	Shutwa Tinnamah ...	F.	20	H.	Stone-cutter
758	Luxumavah Tinmah ...	M.	25	H.	Nil
759	Vyankavah Hanmantah ...	F.	30	H.	Stone-cutter

Place of birth.	Present address.	General Health.	Date of Inoculation. 1st Time.	Date of Inoculation. 2nd Time.	Dose each time.	Remarks.
Vellore ...	Hubli ...	Good ...	29th June 1898.	5th July 1898	...	
Bezváda ...	,, ...	,, ...	28th June 1898.	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Tiptur ...	,, ...	,, ...	,, ...	,, ...	...	
Tugli ...	,, ...	,, ...	29th June 1898.	,, ...	...	
Madras ...	,, ...	,, ...	,, ...	,, ...	...	
Tásgaon ...	,, ...	,, ...	,, ...	,, ...	...	
Hubli ...	,, ...	,, ...	26th June 1898.	,, ...	...	
Kondi ...	,, ...	,, ...	,, ...	,, ...	...	
Kurgod ...	,, ...	,, ...	28th June 1898.	,, ...	...	
Banglore ...	,, ...	,, ...	29th June 1898.	,, ...	...	
Mysore ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	20th June 1898.	,, ...	...	
,, ...	,, ...	,, ...	29th June 1898.	,, ...	...	
,, ...	,, ...	,, ...	1st July 1898.	,, ...	...	
,, ...	,, ...	,, ...	26th June 1898.	,, ...	...	
Hubli ...	,, ...	,, ...	29th June 1898.	,, ...	...	
Ramgarrah ...	,, ...	,, ...	26th ,, ...	,, ...	...	
Gova ...	,, ...	,, ...	30th ,, ...	,, ...	...	
.....	,, ...	,, ...	29th ,, ...	,, ...	...	
Kárwár ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	26th ,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Gadag ...	,, ..	,, ...	29th ,, ...	,, ...	...	
Hubli ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Bellary ...	,, ...	,, ...	,, ...	,, ...	...	
Hubli ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
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,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Betgeri ...	,, ...	,, ...	,, ...	,, ...	...	
Madihal ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Dhárwár ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Sátára ...	,, ...	,, ...	29th ,, ...	,, ...	...	
Gova ...	,, ...	,, ...	,, ...	,, ...	...	
Bijápur ...	,, ...	,, ...	,, ...	,, ...	...	
Dhárwár ...	,, ...	,, ...	,, ...	,, ...	...	
Belgaum ...	,, ...	,, ...	1st July 1898...	6th July 1898	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Sholápur ...	,, ...	,, ...	30th June 1898.	,, ...	...	
,, ...	,, ...	,, ...	1st July 1898	,, ...	...	
Láhore ...	,, ...	,, ...	4th ,, ...	,, ...	...	
Ahamlapur ...	,, ...	,, ...	30th June 1898.	,, ...	...	
Multán ...	,, ...	,, ..	4th July 1898.	,, ...	...	
Vita ...	,, ...	,, ...	30th June 1898.	,, ...	...	
Tanjore ...	,, ...	,, ...	29th ,, ...	,, ...	...	
Bangalore ...	,, ..	,, ...	4th July 1898	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Mysore ...	,, ...	,, ...	,, ...	,, ...	...	
Gadag ...	,, ...	,, ...	,, ...	,, ...	...	
,, ...	,, ...	,, ...	,, ...	,, ...	...	
Dhárwár ...	,, ...	,, ...	,, ...	,, ...	...	

Local & Munl. (1897) Department.

CURRENT No. 6137

2 abstract
Print
abstract only

From The Govt of Bombay.

Order

No. 1846 P

Dated 14. } March '99
Received 20. }
Registered 20. }

Enclosures 1

Spare copies 49 s.c of encl

SUBJECT.

Forwarding, with reference to Letter
No. 3397 dtd 31 March 99 from
His Govt, 50 additional copies of Captain Lowman's
Report on plague inoculations at
Hubli -

No.	Names.	Sex.	Age.	Caste.	Occupation.	Place of birth.	Present address.	General Health.	Date of Inoculation. 1st Time.	Date of Inoculation. 2nd Time.	Dose each time.	Remarks.
760	Mutamah Timnanah	F.	10	H.	Nil	Dhárwár	Hubli	Good	4th July 1898	6th July 1898		
761	Hannapah Timnamah	M	30	H.	Stone-cutter	,,	,,	,,	,,	,,		
762	Chimah Govinda	F.	50	H.	Nil	,,	,,	,,	,,	,,		
763	Yellavah Govindappa	F.	20	H.	,,	Hubli	,,	,,	,,	,,		
764	Walliam Jokappa	M.	54	H.	,,	,,	,,	,,	24th June 1898.	,,		
765	Marriama Deruz	F.	35	H.	,,	,,	,,	,,	,,	,,		
766	Ramappa Timnapah	M.	2	H.	,,	,,	,,	,,	29th ,,	,,		
767	Hoosein Buden	M.	34	M.	Fireman	,,	,,	,,	,,	,,		
768	Lala Meheshaik Hamed	M.	25	M.	.....	,,	,,	,,	,,	,,		
769	Hanmavah Narsa	F.	30	H.	Nil	Dhárwár	,,	,,	4th July 1898	,,		
770	Padaji Mahadu	M.	45	H.	Maistry	Poona	,,	,,	24th June 1898.	,,		
771	Dhuninath Padaji	M.	10	H.	,,	,,	,,	,,	,,	,,		
772	Bala Nana	M.	30	H.	Peon	,,	,,	,,	30th ,,	,,		
773	Yeskoo Nana	M.	12	H.	Nil	,,	,,	,,	,,	,,		
774	Suleman Hassan	M.	7	M.	,,	,,	,,	,,	,,	,,		
775	Kishna Phatak	M.	35	H.	,,	Bijápur	,,	,,	,,	,,		
776	Raghavendra Narayen	M.	13	H.	,,	Belgaum	,,	,,	29th ,,	,,		
777	Sultan Palat	M.	10	M.	,,	Guntákal	,,	,,	,,	,,		
778	Suntharsing Marsing	M.	32	H.	,,	Punjáb	,,	,,	,,	,,		
779	Nagulsing Esarsing	M.	35	H.	Boilermaker	,,	,,	,,	6th July 1898.	8th July 1898		
780	Nathoo Khubersab	M.	30	H.	,,	,,	,,	,,	5th ,,	,,		
781	Sadagarsing Budarsing	M.	35	H.	,,	,,	,,	,,	,,	,,		
782	Sandusing Mersing	M.	30	H.	,,	,,	,,	,,	,,	,,		
783	Moulsing Davasing	M.	40	H.	,,	,,	,,	,,	,,	,,		
784	Gurthasing Chanthasing	M.	30	H.	,,	,,	,,	,,	,,	,,		
785	Thayebsing Narayensing	M.	35	H.	Chargeman	,,	,,	,,	6th ,,	,,		
786	Bholanathsing Tulsiram	M.	30	H.	Fitter	,,	,,	,,	5th ,,	,,		
787	Roodsing Magasing	M.	21	M.	Blacksmith	,,	,,	,,	4th ,,	,,		
788	Fathatheen Sirakthen	M.	25	H.	Boilermaker	,,	,,	,,	6th ,,	,,		
789	Ramdas Achanthapur	M.	24	H.	,,	,,	,,	,,	,,	,,		
790	W. Hauller	M.	27	H.	,,	.....	,,	,,	,,	,,		
791	Shankar Jacken	M.	23	H.	Blacksmith	Madras	,,	,,	4th ,,	,,		
792	A. Shyanthram	M.	22	H.	.....	,,	,,	,,	18th June 1898.	,,		
793	Chamappah Timappa	M.	30	H.	Clerk	Kárwár Dist.	,,	,,	5th July 1898	,,		
794	Babaji Genoo	M.	20	H.	Cooly	,,	,,	,,	4th ,,	,,		
795	George Gallyot	M.	12	E.	Cleaner	Dhárwár	,,	,,	,,	,,		
796	Charles Arnold	M.	13	E.	A. S. M.' son	Bangalore	,,	,,	18th June 1898.	,,		
797	William Arnold	M.	9	E.	Dis. son	Bombay	,,	,,	4th July 1898	,,		
798	Tarabai	F.	40	H.	Nil	Sholápur	,,	,,	,,	,,		
799	Bajaballapah Mulkapet	M.	28	H.	,,	Hubli	,,	,,	30th June 1898.	,,		
800	Shaik Amelli Abdul Kader	M.	40	M.	.....	,,	,,	,,	,,	,,		
801	Marysosa Aruland	M.	11 mos.	Ch.	Butler's child	Mab G. Sh.	,,	,,	1st July 1898	,,		
802	Arokeyuswamy Aruland	M.	5	,,	,,	Bangalore	,,	,,	29th June 1898.	,,		
803	Yellaka Herana	F.	29	H.	Sweeper	,,	,,	,,	,,	,,		
804	Pathana Nallapah	F.	35	H.	,,	,,	,,	,,	30th June 1898.	,,		
805	Pallugadru Murri	M.	10	H.	,,	,,	,,	,,	,,	,,		
806	Mylah Sethoo	F.	29	H.	Boilermaker	,,	,,	,,	,,	,,		
807	Basapachena Basapa	M.	30	H.	Malli	Hubli	,,	,,	6th July 1898	,,		
808	Kaweriawa Durgayah	M.	40	H.	Sweeper	,,	,,	,,	4th July 1898	,,		
809	Shiwa Narayen Luxumanraw	F.	35	H.	Contractor	Poona	,,	,,	,,	,,		
810	Pailadsing Shamanlal	M.	18	H.	Carpenter	,,	,,	,,	26th June 1898.	,,		
811	Venkatachulla Kankdusaya	M.	30	H.	Boilermaker	,,	,,	,,	,,	,,		
812	Ramabux Motaba	M.	30	H.	Carpenter	Harihar	,,	,,	6th July 1898	,,		
813	T. R. Sahadewa Naidu	M.	30	H.	Guard	Delhi	,,	,,	,,	5th July 1898		
814	Mutaswamy Taiwam	M.	30	H.	Boilermaker	Bangalore	,,	,,	,,	,,		
815	Dumingi Antony	M.	30	H.	Nil	,,	,,	,,	6th July 1898	,,		
816	Nali Dod Nalya	F.	35	H.	,,	,,	,,	,,	1st July 1898	,,		
817	Vathiavalliamah Sagalino	F.	14	H.	,,	,,	,,	,,	30th June 1898.	,,		
818	Luxumansing	F.	14	H.	Guard	Trichnapolly	,,	,,	,,	,,		
819	Subbayaragoo Krishnapathi	M.	30	H.	Chequer	Bellary	,,	,,	21st ,,	,,		
820	C. Tixera	M.	26	H.	Fitter	.....	,,	,,	6th July 1898	,,		
		M.	32	E.		Kárwár	,,	,,	20th June 1898.	,,		

Number of persons inoculated twice as per above 820
Do. do. once 1,235

Total up to 8th July 1898 ... 2,055

Hubli, 9th July 1898.

G. V. CHENAI, Surgeon,
Medical Officer, S. M. Railway.

B 1555—23

BACK PAPERS.

G.O.	No.	Department.	Date.
	339	Plague	3.3.99

FURTHER PAPERS.

G.O.	No.	Department.	Date.

6127

No. 1846/P. of 1899.

ASSIST SECY TO GOVT
19 MAR 1899
LEGAL MUNL ECL & LEG DEPT

GENERAL DEPARTMENT (PLAGUE).

Bombay Castle, 14th March 1899.

FROM

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

To

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

SIR,

With reference to your letter No. 339 P. Gis, dated the 3rd March 1899, I am directed to forward 50 additional copies of Captain Leumann's Report on plague inoculation at Hubli.

I have the honour to be,
Sir,
Your most obedient servant
Ernest Lands
for Acting Chief Secretary to Government.

X sent by book Post

Copy sent to Press.

Returned for signature. 1/4

Despatched in print. 7/4

Head Again G.O., No. 189 . Date

Current No.

Enclosures to C. No.

Dept. of Government .. .. ..

Letter of Government.

Memorandum with ditto.

Papers not filed up, being meant for despatch in original.

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B = Not to be printed.
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Draw
M. Lees Smith
4/
7/4/14