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Local & Munl. (1897) Department.

INDEXED

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G.O., No. 308 M.

DATED 26-2-97

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[Despatch Abstract.]

Bubonic plague

Comm^r. & Chn. Mun^l.: Comm^rs. Madras. & all Mun^l. Councils, local boards & Others. Letter from Govt. of India, forwarding Correspondence in Connection with the Surgeon Major Cheghoos visit of medical inspection to Bombay & Karachi regarding the —— & the remedial means that had been adopted in those places.

BACK PAPERS.

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

FURTHER PAPERS.

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

Government {1897} of Madras.

LOCAL AND MUNICIPAL.

Proof for approval

Recd. } 1897. *Enclosures*

Regd. } *Spare copies*

G.O., No. 318 M., 26th February 1897.

FEBRUARY.

Bubonic Plague.

Communicating to the Municipal Commissioners, Madras, and to all Municipal Councils, Local Boards and Collectors letter from the Government of India forwarding correspondence in connection with ~~the~~ Surgeon-Major-General Cleghorn's visits of medical inspection to Bombay and Karachi regarding the — and the remedial means that had been adopted in those places.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper:—

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, Home Department (Sanitary), to the Secretary to the Government of Madras, Local and Municipal Department, dated Calcutta, the 6th February 1897, No. 3, Sany.—371.

I am directed to forward, for the information of His Excellency the Governor in Council, a copy of the papers noted in the margin connected with Surgeon-Major-General Cleghorn's visits of medical inspection to Bombay and Karachi and the remedial measures that have been adopted in those places.

Home Department, No. 45, dated the 19th January 1897, to the address of the Government of Bombay.
Memorandum on the outbreak of plague in Bombay by Medical Practitioners of Bombay.
Note by the Sanitary Commissioner with the Government of India on the outbreak of plague in Karachi.

2. It will be observed that the view of Dr. Cleghorn and of other qualified medical gentlemen who have studied the subject is that the incidence of the disease is to a large extent due to local causes, and that it is at present only slightly epidemic or contagious in the ordinary accepted sense of these words. They are also of opinion that the best practical means of checking the increase of the plague has been found to be the abandonment and thorough disinfection of infected houses and localities, and the removal of the inhabitants to camps constructed in the open. The authorities at Karachi have been particularly successful in the construction of these camps and in securing the removal of the inhabitants of the infected quarters to them.

ENCLOSURES.

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department, dated Calcutta, the 19th January 1897, No. 45.

I am directed to forward, for the information of His Excellency the Governor in Council, a copy of a memorandum signed by some of the principal European and Native Medical Practitioners of the City of Bombay and Members of the Special Research Committee regarding the bubonic plague in that city and measures for arresting its progress. This memorandum has been presented to the Government of India by Surgeon-Major-General Cleghorn, Sanitary Commissioner with the Government of India, on return from his visit to Bombay, which formed the subject of the telegraphic correspondence with the Government of Bombay cited in the margin. Dr. Cleghorn shares in full the views recorded in the memorandum.

Home Department telegram, No. 1, dated 2nd January 1897.
Bombay Government telegram, dated 4th January 1897.

2. His Excellency in Council will observe that the view is expressed that the bubonic plague now prevailing in the City of Bombay is under certain conditions only slightly contagious or infectious; that its incidence is largely due to local causes, and that the only effective way of dealing with the outbreak and of arresting the progress of the disease is to insist on the evacuation of houses in which cases of plague have occurred. The gentlemen who have signed the memorandum consider that there will be no difficulty in providing sufficient and suitable accommodation for people removed

from infected houses, and that it only requires the concurrence and sympathy of the leaders of the different sections of the community to render the plan proposed by them a success.

3. The Government of India regard this influential medical opinion that the plague is not at present either generally epidemic or contagious as of very great importance. The history of previous outbreaks of the disease shows, however, that it has a strong tendency to epidemicity. There has already been very grave loss of life in the population of the city, and the consequences to the trade of Bombay already very serious, promise to be disastrous unless the plague can be speedily reduced. Should it assume a more severe epidemic form, the whole of India may be affected. The Government of India are therefore of opinion that there should be no hesitation in taking the strongest measures to prevent its spreading, even though they may be once distasteful to the people affected. The particular measures advocated in the memorandum, namely, the removal of all persons from infected houses and the thorough disinfection of those houses, appear to the Government of India to be well calculated to check the progress of the disease, and the vigorous action that has been taken to clean and disinfect the infected parts of the city having failed to arrest its progress, it appears to the Government of India to be necessary that they should be adopted. Dr. Cleghorn has also reported to the Government of India that the nature of the buildings in which a large proportion of the inhabitants of Bombay dwell, make it specially important to remove all persons from infected houses and to allow the officers of the Health Department to thoroughly cleanse and disinfect such houses. He points out that in the large and ill-lighted and ill-ventilated houses or chawls occupied by so many as 500 to 1,000 individuals, means of disinfection and cleansing can only be effectually carried out by the complete evacuation of the tenement in which a case of plague has occurred.

4. I am to say that the Governor-General in Council commends the suggestions contained in the memorandum to the earnest attention of the Government of Bombay, and trusts that the Governor in Council may find it possible to act upon them. Should the Government of Bombay concur in thinking that the removal of all persons from infected houses is the best practical method for checking the progress of the plague, the Governor-General in Council will be glad to learn in due course the measures which are adopted to bring the plan into general effect.

It will, no doubt, commend itself to the Government of Bombay that convenient temporary accommodation suitable to the families to be removed should be got ready before measures for evacuation are taken. It seems to the Government of India desirable that, unless the Governor in Council sees objection to this course, the memorandum should be made public. The Government of India would be also glad to know whether the Government of Bombay consider it necessary to strengthen the building regulations of the city and to take increased power to prevent overcrowding in the chawls.

5. Dr. Cleghorn has suggested that two of the Deputy Sanitary Commissioners serving under the Government of Bombay should be placed at the disposal of the Health Officer free of cost to the Corporation. I am to request that this suggestion may receive the consideration of His Excellency in Council.

6. In conclusion, I am to say that the Governor-General in Council has learnt with the greatest satisfaction of the untiring energy which has been displayed by the local authorities in the thorough and systematic cleansing and disinfection of the infected parts of the city. The liberal measures sanctioned by the Corporation towards these ends, and the energy displayed by the executive officers of the Corporation, *viz.*, Mr. Snow, Municipal Commissioner, Brigade-Surgeon-Lieutenant-Colonel Weir, Executive Health Officer, and Mr. James, Executive Engineer, and their subordinates, are appreciated by the Governor-General in Council as they are, no doubt, also by the Government of Bombay. It is in the opinion of the Government of India only by continuing and extending these efforts unremittingly, and by supplementing them by even stronger measures such as that which is suggested in this letter, that the spread of the disease can be successfully and effectively arrested.

Memorandum on the plague by Medical Practitioners of Bombay.

We, the undersigned Medical Officers and Members of the Special Research Committee, are of opinion that the bubonic plague now prevailing in the City is, under certain conditions, only slightly contagious or infectious, and the facts observed in connection with individual cases and those associated with the general progress of the disease, warrant us in concluding that its incidence is greatly due to local conditions.

We are emphatically of opinion that the only practical method of dealing with the outbreak and of arresting the progress of the disease is by the removal of the inmates from those houses in which a case of the disease occurs.

We quite appreciate the practical difficulties attending the adoption of this proposal, but in such an emergency as the present, these difficulties can and must be overcome. The Municipal Corporation will no doubt provide suitable huts, free of rent, for the accommodation of the different classes, and we understand that Mill Companies and other employers of labour are prepared to erect huts for their different employés. The experience gained in the melas at Allahabad and Hurdwar will be available as to construction and arrangement of the huts.

There will thus be no difficulty experienced in providing sufficient and suitable accommodation for the evicted, and it requires only the concurrence and sympathy of the leaders of the different sections of the native community to render the scheme a success. If houses in healthy localities are available for occupation, there is no reason why they should not be utilized.

The steps leading up to removal would be the report to the Health Officer of a case by a duly qualified Medical Officer. The Health Officer would then notify the occurrence to the Municipal authorities, and would at the same time submit his recommendations for the removal of the inmates in the particular home and if he considered it necessary of those also in the immediate neighbourhood. The Municipal authorities would then take the necessary action and indicate the huts available. Carts, if necessary, should be provided free of cost, for the removal of the goods and chattels of the inmates.

The person attacked would either be removed to hospital or remain in the house with his or her relatives until recovery or death took place. The house would then be completely vacated and taken possession of by the Health Officer for purposes of cleaning and disinfection, and he should be invested with full powers, in consultation with the Executive Engineer, for removing all partitions, erections or portions of house walls which impede or obstruct ventilation. After an interval to be determined by the Health Officer, the house would be re-occupied.

There can be no question as to the necessity for the adoption of the measure we now advocate, and we trust that, in the interests not only of Bombay, but also in those of the whole of India, it will be at once accepted and acted upon, more especially as the untiring energy displayed in the thorough and systematic cleaning and disinfection of the affected parts of the city has as yet failed to arrest the progress of the disease.

K. N. Bahadurji.
James Arnott.
Temulji Bhicaji Nariman.
Ismail Jan Mahomed.
Bhalchandra Krishna.
E. H. Hankin.
L. F. Childe.
Accacio G. Viegas.

N. F. Surveyor.
Thomas Blaney.
Henry Cook, M.D., *Surgn.-Major-Genl.*
James Cleghorn,
Director-General,
Indian Medical Service.
T. S. Weir.
Sydney Smith.

I am of the opinion that, as there are facts showing that the plague is spread by people coming from infected localities, the measures compelling the inhabitants to leave those localities ought to be accompanied by others calculated to control their further movements.

(Signed) W. H. HAFFKINE.

Note by Director-General, Indian Medical Service, on the outbreak of bubonic plague at Karachi.

The first case of the disease was reported to, and observed by, Dr. Kakar, the Health Officer, on the 10th December. The individual attacked was a cook to a Hindu merchant, whose house was situated in the Bunder quarter of the city. He was said to have landed from Bombay on the 8th or 9th December, but the evidence on this point is certainly not clear, was attacked with fever on the latter date and died on the 10th, with all the symptoms of plague. When the fever declared itself, the man was removed from the house in the Bunder quarter, to another in the Ranchore quarter, where he died. No other case has occurred in either of these houses.

The second observed case appeared on the 11th December in the Old Town quarter in the person of a broker, whose office is in the Bunder quarter in close proximity to the house in which the first case occurred, but his residence was situated in the Old Town quarter.

Beyond the above there appears to be no clear and distinct evidence of the importation of the disease into Karachi by human intercourse, but it is admitted that cases may have occurred previous to those noted, although not reported.

As in Bombay, the appearance of the disease was followed by a great mortality among rats.

The population of the City of Karachi according to the census of 1891 amounted to 98,195, one-fifth of that number may be added for natural increase, which will bring the present population up to 117,834.

The town excluding cantonments and harbour is divided into 31 quarters or wards and up to 24th January 606 deaths have been reported from fourteen of these wards; the remaining seventeen have been entirely free. The incidence of these deaths in the fourteen wards was as follows:—

No.	Quarters.	Number of deaths.	Estimated population.
1	Ranchore	5	8,986
2	Old Town	407	11,489
3	Machi Miani	66	3,721
4	Market	49	8,107
5	Bunder	22	1,277
6	Napier	18	10,274
7	Lyari	13	27,056
8	Serai	2	4,916
9	Garden	10	7,494
10	Sadar Bazar	1	9,087
11	Ramswamy	1	1,777
12	Rambagh	1	3,758
13	Civil lines	1	1,394
14	Jail (the quarter so called)	10	4,565
	Total ..	606	....

The worst parts of the town are the quarters named Old Town, Machi Miani, Market and Bunder, where the greatest mortality has occurred. The two former face the bed of a dry stream, extending backwards until they become contiguous with the other quarters. Many of the houses I visited in the quarters above named were quite unfit for human habitation, there were no openings for the admission of air and light, the rooms were overcrowded, and the inmates lived in complete darkness. The Old Town is the worst in these respects, but the overcrowding in houses and of ground area is common to all.

Of the 59 ascertained deaths from plague which were reported up to 31st December, 49 or 83·1 per cent. occurred in the Old Town, and of the total 606 deaths, 407 or 67·1 per cent. were reported from the same quarter.

It must also be noted that many of the deaths reported from other quarters occurred in fugitives from the Old Town.

The death-rate from plague in Karachi City has, therefore, been only 0·52 per cent. of estimated population, and in the worst quarter, where the greatest mortality has occurred, only 3·5 per cent. on the estimated population of that quarter. This, I think, proves that the disease, as in Bombay, can only be slightly, if at all, either contagious or infectious in the common acceptation of these terms, and the following additional facts warrant me, I think, in coming to the conclusion that the incidence of the disease is due to local conditions :—

1. No death has as yet been reported from any of the houses on the exposed edge of the town, *i.e.*, on the one with a frontage to the dry bed of the stream.

2. Comparatively slight extension in the other quarters, and that only in the worst houses.

3. Lyari, a suburb containing an estimated population of 27,000, locally said to be 30,000, situated a quarter to half a mile from the Old Town, Mianimachi, and Market, is in constant communication with these quarters and receiving fugitives from them. Only 13 deaths up to 24th January. The houses in this suburb are scattered over a large area and are, as a rule, of small size. There are numerous gardens and open spaces in the area.

4. Khudder, a village with a population of 2,000, chiefly fishermen, situated half a mile from the town—women of the village proceed daily to the town to sell fish, but there were only two deaths up to 26th January. The village consists of huts, each occupied by a single family.

5. Kemari, a village near the port with a population of 2,378. No deaths from plague.

6. No deaths reported among coolies connected with the shipping.

7. Eighty police employed in the city during the 24 hours. No deaths.

8. The immunity enjoyed by officers and subordinates of Health Department.

The houses in which a death has occurred are marked thus + , and the mark is repeated for each death. In visiting all parts of the city with the officers of the Health Department, I was struck with the localization of these marks and their absence from the better class of houses.

The measures which have been taken, and are still in progress towards arresting the spread of the disease, are cleansing and disinfection of houses in which a death has occurred, greater attention to general cleanliness and, when possible, removal of the healthy from infected houses.

On the 11th January the construction of mat huts on a large space of open ground near the town was commenced, but the people could not be induced to occupy them until the 24th, when the headmen of the Hindus living in the Old Town agreed to the exodus. On the 27th January, there were nearly 400 huts erected which were then occupied by 2,500 to 3,000 people.

The huts are built separately and arranged along wide streets, water is laid on and all sanitary arrangements are attended to.

The Muhammadans and Kutchers have also agreed to turn out of their houses, and huts are now in course of construction for their occupation.

A population living under these conditions will require careful supervision, and a civil officer has been detailed for the duty. I also recommend that the Deputy Sanitary Commissioner, Dr. Arnim, now in Karachi, should be placed in medical charge of the different camps.

The Bombay Government might be informed that, if further medical assistance is required, officers can be supplied on application to Government of India.

A house evacuated is not to be re-occupied until its interior has been thoroughly cleansed, disinfected and whitewashed, and these measures should be extended to the other houses in the city.

In addition to these measures it appears to me to be necessary for the future safety of the city that all houses declared by the local medical authority to be unfit for human habitation, should be demolished, and the ground acquired by the municipality.

That the local authorities should be authorised to refuse permission to the re-occupation of a house or room until it is placed in a proper state for habitation, and a law should be passed to prevent overcrowding in houses and rooms.

It is, I think, generally accepted that the limit of incubation of the plague in a human being is eight to nine days. The facts which have come to my notice support this view, and I would recommend that quarantine should be limited to ten days.

It was suggested to me when in Karachi, that as the Municipal Committee is making such great endeavours to stop the progress of the disease, their efforts might be frustrated by allowing passengers from Bombay to land immediately on arrival of the ships, and they think that a quarantine of ten days from date of departure from Bombay, when no case has occurred on board, might be imposed on all arrivals.

The cargo to be landed in the ordinary course. This appears to be appropriate and justifiable, but Mr. Wingate, the Commissioner, declines to recommend its adoption until it can be clearly proved that arrivals are followed by fresh importation of the disease.

The inward passenger traffic by rail is carefully watched by medical subordinates on the main line, and on those to Quetta and Hyderabad, but I think it advisable that a Commissioned Medical Officer should inspect at Karachi City station and accompany the train to the cantonment station and inspect passengers who may enter at that station.

This Medical Officer would be under the orders of the Commissioner or Magistrate, and would be available for any other duty connected with the plague.

The arrangements now being made at Karachi will be watched with interest, as if the removal of a whole or portion of the inhabitants to huts proves ultimately successful, the procedure may be followed with advantage elsewhere.

2nd February 1897. (Signed) J. CLEGHORN.

Order—No. 318 M., dated 26th February 1897.

Communicated to the Municipal Commissioners, Madras, and to all Municipal Councils, Local Boards and Collectors.

(True Extract.)

Secretary to Government.

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

Exd. C. M. Thumbuswamy.

Local & Munl. (1897) Department.

CURRENT No. 585

Re Plague

Order No. 318 M 26-2-97 23/2/97 A.S.H. 25.2.97

Communicated to the Municipal Commissioner, Madras and to all municipal councils and Local Boards & Collectors.

F.R. 23/2/97 S.F. 28/2/97

From

The Secy. to the Govt. of India
Home Dept.

No. 3 Sany
371-

Dated 6-2-97

Received 12-2-97.

Registered 13-2-97.

Enclosures 2

Spare copies

SUBJECT.

Forwarding correspondence in connection with Surgeon Major-Genl. Cleghorn's visits of medical inspection to Bombay & Karachi regarding the Bubonic plague & the remedial measures that had been adopted in those places &c.

Note - The Regulations recently issued embody all the recommendation of Dr. Cleghorn, except the removal of inhabitants of towns to huts erected outside municipal limits. This point may however be considered later on should the necessity for it arise.

Mr. This point received very close consideration, but Govt was on the whole not prepared to include it in the Regns at present. But shd. the plague really appear here in an epidemic form

To

The President, municipal commissin, madras
all chairmen of municipal councils
.. Presidents of District Boards
.. Collector
The Sanitary Commissioner
.. Public Department
.. Bombay Govt

Copies 9/3/97

16/3/97. 4/3/97

that course will no doubt have to be taken. I think unnecessary alarm wd be generated by laying down a rule now. Colmore is establishing camps wh wd take all such cases at the beginning of an outbreak. S.F. 23.2.97

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

LOCAL & MUNICIPAL DEPT.
CURRENT No. 585 M

3 Sany
No. 341

CHIEF SECRETARY
12-FEB 1897
GOVERNMENT OF MADRAS

FROM

J. P. HEWETT, ESQ., C.I.E.,
Secretary to the Government of India,

To

The Chief Secy. to the Govt. of Madras.

Home Department.
Sanitary.

Calcutta, the 6th February 1897.

SIR,

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I have the honour to be,

SIR,

Your most obedient Servant,

J. P. Hewett

Secretary to the Govt. of India.

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G. I. C. P. O.—No. 1419 H. D.—8-2-97—280.—P. K. B.

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JAMES ARNOTT.
TEMULJI BHICAJI NARIMAN.
ISMAIL JAN MAHOMED.
BHALCHANDRA KRISHNA.
E. H. HANKIN.
L. F. CHILDE.
ACCACIO G. VIEGAS.
N. F. SURVEYOR.
THOMAS BLANEY.
HENRY COOK, M. D., *Surgeon-Maj.-Genl.*
JAMES CLEGHORN.
Director General,
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W. M. HAFFKINE.

Note by Director General, Indian Medical Service, on the outbreak of bubonic plague at Karachi.

The first case of the disease was reported to, and observed by, Dr. Kakar, the Health Officer, on the 10th December. The individual attacked was a cook to a Hindu merchant, whose house was situated in the Bunder quarter of the city. He was said to have landed from Bombay on the 8th or 9th December, but the evidence on this point is certainly not clear, was attacked with fever on the latter date, and died on the 10th, with all the symptoms of plague. When the fever declared itself, the man was removed from the house in the Bunder quarter, to another in the Ranchore quarter, where he died. No other case has occurred in either of these houses.

The second observed case appeared on the 11th December in the Old Town quarter in the person of a broker, whose office is in the Bunder quarter in close proximity to the house in which the first case occurred, but his residence was situated in the Old Town quarter.

Beyond the above there appears to be no clear and distinct evidence of the importation of the disease into Karachi by human intercourse, but it is admitted that cases may have occurred previous to those noted, although not reported.

As in Bombay, the appearance of the disease was followed by a great mortality among rats.

The population of the City of Karachi according to the census of 1891 amounted to 98,195, one-fifth of that number may be added for natural increase, which will bring the present population up to 117,834.

The town excluding Cantonments and Harbour is divided into 31 quarters or wards and up to 24th January 606 deaths have been reported from 14 of these wards; the remaining 17 have been entirely free. The incidence of these deaths in the fourteen wards was as follows:—

No.	Quarters.	Number of deaths.	Estimated population.
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12	Rambagh	1	3,758
13	Civil lines	1	1,394
14	Jail (the quarter so called)	10	4,565
	TOTAL	606	...

2/585-Aug-1897

The worst parts of the town are the quarters named Old Town, Machi Miani, Market, and Bunder, where the greatest mortality has occurred. The two former face the bed of a dry stream, extending backwards until they become contiguous with the other quarters. Many of the houses I visited in the quarters above-named were quite unfit for human habitation, there were no openings for the admission of air and light, the rooms were overcrowded, and the inmates lived in complete darkness. The Old Town is the worst in these respects, but the overcrowding in houses and of ground area, is common to all.

Of the 59 ascertained deaths from plague which were reported up to 31st December 49 or 83·1 per cent. occurred in the Old Town, and of the total 606 deaths, 407 or 67·1 per cent. were reported from the same quarter.

It must also be noted that many of the deaths reported from other quarters occurred in fugitives from the Old Town.

The death-rate from plague in Karachi City has, therefore, been only 0·52 per cent. of estimated population, and in the worst quarter, where the greatest mortality has occurred only 3·5 per cent. on the estimated population of that quarter. This, I think, proves that the disease, as in Bombay, can only be slightly, if at all, either contagious or infectious in the common acceptation of these terms, and the following additional facts warrant me, I think, in coming to the conclusion that the incidence of the disease is due to local conditions.

1. No death has as yet been reported from any of the houses on the exposed edge of the town, *i.e.*, on the one with a frontage to the dry bed of the stream.

2. Comparatively slight extension in the other quarters, and that only in the worst houses.

3. Lyari, a suburb containing an estimated population of 27,000, locally said to be 30,000, situated a quarter to half a mile from the Old Town, Mianimachi and market, is in constant communication with these quarters and receiving fugitives from them. Only 13 deaths up to 24th January. The houses in this suburb are scattered over a large area and are, as a rule, of small size. There are numerous gardens and open spaces in the area.

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proceed daily to the town to sell fish, but there were only two deaths up to 26th January. The village consists of huts, each occupied by a single family.

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6. No deaths reported among coolies connected with the shipping.

7. Eighty Police employed in the city during the 24 hours. No deaths.

8. The immunity enjoyed by officers and subordinates of Health Department.

The houses in which a death has occurred are marked thus ⊕, and the mark is repeated for each death. In visiting all parts of the city with the officers of the Health Department I was struck with the localization of these marks and their absence from the better class of houses.

The measures which have been taken, and are still in progress towards arresting the spread of the disease, are cleansing and disinfection of houses in which a death has occurred, greater attention to general cleanliness and, when possible, removal of the healthy from infected houses.

On the 11th January the construction of mat huts on a large space of open ground near the town was commenced, but the people could not be induced to occupy them until the 24th, when the headmen of the Hindus living in the old town agreed to the exodus. On the 27th January, there were nearly 400 huts erected which were then occupied by 2,500 to 3,000 people.

The huts are built separately and arranged along wide streets, water is laid on and all sanitary arrangements are attended to.

The Mahomedans and Kutchers have also agreed to turn out of their houses, and huts are now in course of construction for their occupation.

A population living under these conditions will require careful supervision, and a Civil Officer has been detailed for the duty. I also recommend that the Deputy Sanitary Commissioner, Dr. Arnim, now in Karachi, should be placed in Medical charge of the different camps.

The Bombay Government might be informed that if further medical assistance is required, Officers can be supplied on application to Government of India.

The Reports issued by the Govt provide only for ~~the~~ persons attached with the plague. & for persons who ~~do~~ have been taken up by the local authorities. - Vide Rep^n 8 Madras city also Rep^n 4 of 8?

Vide Rep^n 8.

A house evacuated is not to be re-occupied until its interior has been thoroughly cleansed, disinfected and whitewashed, and these measures should be extended to the other houses in the City.

In addition to these measures it appears to me to be necessary for the future safety of the city that all houses declared by the local medical authority to be unfit for human habitation, should be demolished, and the ground acquired by the Municipality.

That the local authorities should be authorised to refuse permission to the re-occupation of a house or room until it is placed in a proper state for habitation, and a law should be passed to prevent overcrowding in houses and rooms.

It is, I think, generally accepted that the limit of incubation of the plague in a human being is 8 to 9 days. The facts which have come to my notice support this view, and I would recommend that quarantine should be limited to 10 days.

It was suggested to me when in Karachi, that as the Municipal Committee is making such great endeavours to stop the progress of the disease, their efforts might be frustrated by allowing passengers from Bombay to land immediately on arrival of the ships, and they think that a quarantine of 10 days from date of departure from Bombay, when no case has occurred on board, might be imposed on all arrivals.

The cargo to be landed in the ordinary course. This appears to be appropriate and justifiable, but Mr. Wingate, the Commissioner, declines to recommend its adoption until it can be clearly proved that arrivals are followed by fresh importation of the disease.

The inward passenger traffic by rail is carefully watched by medical subordinates on the main line, and on those to Quetta and Hyderabad, but I think it advisable that a Commissioned Medical Officer should inspect at Karachi City station and accompany the train to the cantonment station and inspect passengers who may enter at that station.

This Medical Officer would be under the orders of the Commissioner or Magistrate, and would be available for any other duty connected with the plague.

The arrangements now being made at Karachi will be watched with interest, as if the removal of a whole or portion of the inhabitants to huts proves ultimately successful, the procedure may be followed with advantage elsewhere.

2nd February 1897. J. CLEGHORN.

G. I. C. P. O.—No. 1375 H. D.—6-2-97.—40.

Government {1897} of Madras.

LOCAL AND MUNICIPAL.

Recd. } 1897. *Enclosures*

Regd. } *Spare copies*

G.O., No. 318 M., 26th February 1897.

FEBRUARY.

Bubonic Plague.

Communicating to the Municipal Commissioners, Madras, and to all Municipal Councils, Local Boards and Collectors letter from the Government of India forwarding correspondence in connection with Surgeon-Major-General Cleghorn's visits of medical inspection to Bombay and Karachi regarding the — and the remedial means that had been adopted in those places.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper:—

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, Home Department (Sanitary), to the Secretary to the Government of Madras, Local and Municipal Department, dated Calcutta, the 6th February 1897, No. 3, Sany.—371.

I am directed to forward, for the information of His Excellency the Governor in Council, a copy of the papers noted in the margin connected with Surgeon-Major-General Cleghorn's visits of medical inspection to Bombay and Karachi and the remedial measures that have been adopted in those places.

Home Department, No. 45, dated the 19th January 1897, to the address of the Government of Bombay.
Memorandum on the outbreak of plague in Bombay by Medical Practitioners of Bombay.
Note by the Sanitary Commissioner with the Government of India on the outbreak of plague in Karachi.

2. It will be observed that the view of Dr. Cleghorn and of other qualified medical gentlemen who have studied the subject is that the incidence of the disease is to a large extent due to local causes, and that it is at present only slightly epidemic or contagious in the ordinary accepted sense of these words. They are also of opinion that the best practical means of checking the increase of the plague has been found to be the abandonment and thorough disinfection of infected houses and localities, and the removal of the inhabitants to camps constructed in the open. The authorities at Karachi have been particularly successful in the construction of these camps and in securing the removal of the inhabitants of the infected quarters to them.

ENCLOSURES.

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department, dated Calcutta, the 19th January 1897, No. 45.

I am directed to forward, for the information of His Excellency the Governor in Council, a copy of a memorandum signed by some of the principal European and Native Medical Practitioners of the City of Bombay and Members of the Special Research Committee regarding the bubonic plague in that city and measures for arresting its progress. This memorandum has been presented to the Government of India by Surgeon-Major-General Cleghorn, Sanitary Commissioner with the Government of India, on return from his visit to Bombay, which formed the subject of the telegraphic correspondence with the Government of Bombay cited in the margin. Dr. Cleghorn shares in full the views recorded in the memorandum.

Home Department telegram, No. 1, dated 2nd January 1897.
Bombay Government telegram, dated 4th January 1897.

2. His Excellency in Council will observe that the view is expressed that the bubonic plague now prevailing in the City of Bombay is under certain conditions only slightly contagious or infectious; that its incidence is largely due to local causes, and that the only effective way of dealing with the outbreak and of arresting the progress of the disease is to insist on the evacuation of houses in which cases of plague have occurred. The gentlemen who have signed the memorandum consider that there will be no difficulty in providing sufficient and suitable accommodation for people removed

from infected houses, and that it only requires the concurrence and sympathy of the leaders of the different sections of the community to render the plan proposed by them a success.

3. The Government of India regard this influential medical opinion that the plague is not at present either generally epidemic or contagious as of very great importance. The history of previous outbreaks of the disease shows, however, that it has a strong tendency to epidemicity. There has already been very grave loss of life in the population of the city, and the consequences to the trade of Bombay already very serious, promise to be disastrous unless the plague can be speedily reduced. Should it assume a more severe epidemic form, the whole of India may be affected. The Government of India are therefore of opinion that there should be no hesitation in taking the strongest measures to prevent its spreading, even though they may be once distasteful to the people affected. The particular measures advocated in the memorandum, namely, the removal of all persons from infected houses and the thorough disinfection of those houses, appear to the Government of India to be well calculated to check the progress of the disease, and the vigorous action that has been taken to clean and disinfect the infected parts of the city having failed to arrest its progress, it appears to the Government of India to be necessary that they should be adopted. Dr. Cleghorn has also reported to the Government of India that the nature of the buildings in which a large proportion of the inhabitants of Bombay dwell, make it specially important to remove all persons from infected houses and to allow the officers of the Health Department to thoroughly cleanse and disinfect such houses. He points out that in the large and ill-lighted and ill-ventilated houses or chawls occupied by so many as 500 to 1,000 individuals, means of disinfection and cleansing can only be effectually carried out by the complete evacuation of the tenement in which a case of plague has occurred.

4. I am to say that the Governor-General in Council commends the suggestions contained in the memorandum to the earnest attention of the Government of Bombay, and trusts that the Governor in Council may find it possible to act upon them. Should the Government of Bombay concur in thinking that the removal of all persons from infected houses is the best practical method for checking the progress of the plague, the Governor-General in Council will be glad to learn in due course the measures which are adopted to bring the plan into general effect.

It will, no doubt, commend itself to the Government of Bombay that convenient temporary accommodation suitable to the families to be removed should be got ready before measures for evacuation are taken. It seems to the Government of India desirable that, unless the Governor in Council sees objection to this course, the memorandum should be made public. The Government of India would be also glad to know whether the Government of Bombay consider it necessary to strengthen the building regulations of the city and to take increased power to prevent overcrowding in the chawls.

5. Dr. Cleghorn has suggested that two of the Deputy Sanitary Commissioners serving under the Government of Bombay should be placed at the disposal of the Health Officer free of cost to the Corporation. I am to request that this suggestion may receive the consideration of His Excellency in Council.

6. In conclusion, I am to say that the Governor-General in Council has learnt with the greatest satisfaction of the untiring energy which has been displayed by the local authorities in the thorough and systematic cleansing and disinfection of the infected parts of the city. The liberal measures sanctioned by the Corporation towards these ends, and the energy displayed by the executive officers of the Corporation, *viz.*, Mr. Snow, Municipal Commissioner, Brigade-Surgeon-Lieutenant-Colonel Weir, Executive Health Officer, and Mr. James, Executive Engineer, and their subordinates, are appreciated by the Governor-General in Council as they are, no doubt, also by the Government of Bombay. It is in the opinion of the Government of India only by continuing and extending these efforts unremittingly, and by supplementing them by even stronger measures such as that which is suggested in this letter, that the spread of the disease can be successfully and effectively arrested.

Memorandum on the plague by Medical Practitioners of Bombay.

We, the undersigned Medical Officers and Members of the Special Research Committee, are of opinion that the bubonic plague now prevailing in the City is, under certain conditions, only slightly contagious or infectious, and the facts observed in connection with individual cases and those associated with the general progress of the disease, warrant us in concluding that its incidence is greatly due to local conditions.

We are emphatically of opinion that the only practical method of dealing with the outbreak and of arresting the progress of the disease is by the removal of the inmates from those houses in which a case of the disease occurs.

We quite appreciate the practical difficulties attending the adoption of this proposal, but in such an emergency as the present, these difficulties can and must be overcome. The Municipal Corporation will no doubt provide suitable huts, free of rent, for the accommodation of the different classes, and we understand that Mill Companies and other employers of labour are prepared to erect huts for their different employés. The experience gained in the melas at Allahabad and Hurdwar will be available as to construction and arrangement of the huts.

There will thus be no difficulty experienced in providing sufficient and suitable accommodation for the evicted, and it requires only the concurrence and sympathy of the leaders of the different sections of the native community to render the scheme a success. If houses in healthy localities are available for occupation, there is no reason why they should not be utilized.

The steps leading up to removal would be the report to the Health Officer of a case by a duly qualified Medical Officer. The Health Officer would then notify the occurrence to the Municipal authorities, and would at the same time submit his recommendations for the removal of the inmates in the particular home and if he considered it necessary of those also in the immediate neighbourhood. The Municipal authorities would then take the necessary action and indicate the huts available. Carts, if necessary, should be provided free of cost, for the removal of the goods and chattels of the inmates.

The person attacked would either be removed to hospital or remain in the house with his or her relatives until recovery or death took place. The house would then be completely vacated and taken possession of by the Health Officer for purposes of cleaning and disinfection, and he should be invested with full powers, in consultation with the Executive Engineer, for removing all partitions, erections or portions of house walls which impede or obstruct ventilation. After an interval to be determined by the Health Officer, the house would be re-occupied.

There can be no question as to the necessity for the adoption of the measure we now advocate, and we trust that, in the interests not only of Bombay, but also in those of the whole of India, it will be at once accepted and acted upon, more especially as the untiring energy displayed in the thorough and systematic cleaning and disinfection of the affected parts of the city has as yet failed to arrest the progress of the disease.

K. N. Bahadurji.
James Arnott.
Temulji Bhicaji Nariman.
Ismail Jan Mahomed.
Bhalchandra Krishna.
E. H. Hankin.
L. F. Childe.
Accacio G. Viegas.

N. F. Surveyor.
Thomas Blaney.
Henry Cook, M.D., *Surgn.-Major-Genl.*
James Cleghorn,
Director-General,
Indian Medical Service.
T. S. Weir.
Sydney Smith.

I am of the opinion that, as there are facts showing that the plague is spread by people coming from infected localities, the measures compelling the inhabitants to leave those localities ought to be accompanied by others calculated to control their further movements.

(Signed) W. H. HAFFKINE.

Note by Director-General, Indian Medical Service, on the outbreak of bubonic plague at Karachi.

The first case of the disease was reported to, and observed by, Dr. Kakar, the Health Officer, on the 10th December. The individual attacked was a cook to a Hindu merchant, whose house was situated in the Bunder quarter of the city. He was said to have landed from Bombay on the 8th or 9th December, but the evidence on this point is certainly not clear, was attacked with fever on the latter date and died on the 10th, with all the symptoms of plague. When the fever declared itself, the man was removed from the house in the Bunder quarter, to another in the Ranchore quarter, where he died. No other case has occurred in either of these houses.

The second observed case appeared on the 11th December in the Old Town quarter in the person of a broker, whose office is in the Bunder quarter in close proximity to the house in which the first case occurred, but his residence was situated in the Old Town quarter.

Beyond the above there appears to be no clear and distinct evidence of the importation of the disease into Karachi by human intercourse, but it is admitted that cases may have occurred previous to those noted, although not reported.

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Of the 59 ascertained deaths from plague which were reported up to 31st December, 49 or 83·1 per cent. occurred in the Old Town, and of the total 606 deaths, 407 or 67·1 per cent. were reported from the same quarter.

It must also be noted that many of the deaths reported from other quarters occurred in fugitives from the Old Town.

The death-rate from plague in Karachi City has, therefore, been only 0·52 per cent. of estimated population, and in the worst quarter, where the greatest mortality has occurred, only 3·5 per cent. on the estimated population of that quarter. This, I think, proves that the disease, as in Bombay, can only be slightly, if at all, either contagious or infectious in the common acceptation of these terms, and the following additional facts warrant me, I think, in coming to the conclusion that the incidence of the disease is due to local conditions :—

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4. Khudder, a village with a population of 2,000, chiefly fishermen, situated half a mile from the town—women of the village proceed daily to the town to sell fish, but there were only two deaths up to 26th January. The village consists of huts, each occupied by a single family.

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It was suggested to me when in Karachi, that as the Municipal Committee is making such great endeavours to stop the progress of the disease, their efforts might be frustrated by allowing passengers from Bombay to land immediately on arrival of the ships, and they think that a quarantine of ten days from date of departure from Bombay, when no case has occurred on board, might be imposed on all arrivals.

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This Medical Officer would be under the orders of the Commissioner or Magistrate, and would be available for any other duty connected with the plague.

The arrangements now being made at Karachi will be watched with interest, as if the removal of a whole or portion of the inhabitants to huts proves ultimately successful, the procedure may be followed with advantage elsewhere.

2nd February 1897. (Signed) J. CLEGHORN.

Order—No. 318 M., dated 26th February 1897.

Communicated to the Municipal Commissioners, Madras, and to all Municipal Councils, Local Boards and Collectors.

(True Extract.)

G. S. FORBES,
Secretary to Government.

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

Exd. C. M. Thumbuswamy.

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ued for signature. 6-3-97

patched in print. 9-3-97

AIN G.O., No. 189 DATED

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