

Local & Munl. (1897) Department.

MISCELLANEOUS.

G.O., No. 1003 M

DATED 28. 4. 97.

[Despatch Abstract.]

Bubonic plague. Recording letter from the Govt of India forwarding for information copy of memorandum by Surgeon Major Warburton on a visit of inspection to certain plague inspection stations on the lines of Ry. leading from Bombay to Calcutta and Northern India.

BACK PAPERS.

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

FURTHER PAPERS.

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

L.S.M.
[1,000-11-11-96.]

Local & Munl. (1897) Department.

CURRENT No. 5004

His

order No 1003. Mms d/28-4-97

From

The Govt. of India
Home Departt.

Recorded.

25/4/97

No. 1281

Dated 13th April 1897

Received 21st " "

Registered 22nd " "

Enclosures 2

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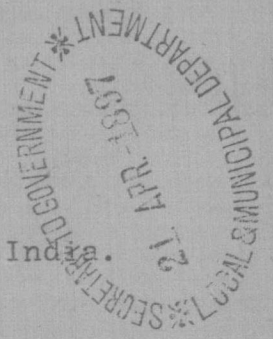
SUBJECT.

Forwarding for information
Copy of memorandum
by Surg. Major Warburton
offg. Sanitary Commission
with the Govt. of India
on a visit of inspection
to certain plague inspec-
tion stations on the lines
of Ry. leading from Bombay to
Calcutta and Northern India

Copy to the P.W.D. (Rail. Branch) Prop 1-5-97
Surg. Genl. Prop 1-5-97
Sanit. Commr.
Officer in charge of
Plague camp, Guntakal Prop
do. do. Adikar Prop
do. do. Kandapalli Prop
P.S. Police Prop
Bodanur - make a copy

L J M Dept. C No 5
5074

No. 1281



From

J. P. Hewett, Esq., C. I. E.,
Secretary to the Govt. of India.

To

The Secretary to the Govt. of Madras,
Local (Municipal) Deptt.

Home Department.
(Sanitary)

Simla, the 13th April 1897.

Sir,

I am directed to forward for the information of the Government of Madras, a copy of a Memorandum by Surgeon Major-General Warburton, Officiating Sanitary Commissioner with the Government of India, on a recent visit of inspection to certain of the principal plague inspection stations on the lines of railway leading from Bombay to Calcutta and Northern India.

I have the honour to be,

Sir,

Your most obedient Servant,

Phashan

For Secretary to the Government of India.

Phashan

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Note of inspection by Surgeon-Major-General Warburton, Officiating Director-General, Indian Medical Service, unofficial No. 331, dated 4th April 1897.

I beg to submit the following note on my recent visits to first class plague inspection stations :—

1. *Khana*.—I arrived at 5-11 P.M. and left at 6-20 P.M. on 24th March. Surgeon-Captain Dyson, Sanitary Commissioner, Bengal, and Surgeon-Captains Calvert and Jay-Gould and Surgeon-Lieutenant Peck, the three officers posted here for inspection duty, met me at the station and showed me over the segregation camp, a very accurate description of which, together with inspection and disinfecting arrangements, etc., is given in the accompanying note by Surgeon-Captain Dyson. The distribution of water by pipes and more efficient steaming arrangements will shortly be completed.

There had been 364 admissions to date and there were 22 suspects in the camp at the time of my visit, two of whom were in hospital, one suffering from pneumonia and the other from chicken-pox.

I saw the passengers in the 6-20 P.M. train inspected and was satisfied with the thoroughness of the inspection. Seven first and second class and 363 third class passengers were examined, and no complaints were made.

So far no cases of plague have been discovered.

The lowest number of passengers inspected on any one day was 1,799 and the highest 4,067.

The lighting arrangements were defective, but electric light will soon be in operation at a special inspection platform which was nearly completed and at which only trains from up-country will stop.

2. *Manikpur*.—I reached this station at 6 P.M. on the 25th and remained there till 9-14 the next morning.

Only two trains from the Bombay direction—one at 7-24 A.M. and the other at 7-5 P.M.—are examined each day. There are no night trains. I was present at the inspection of two trains, the total number of passengers examined being 360, of whom about 15 per cent. were from the Bombay Presidency.

The examining staff consists of one Commissioned Medical Officer, Surgeon-Lieutenant Dawes, and a native female nurse; the former examines all the men and feels the pulses of the females, whose examination is completed by the nurse. The examinations were carefully made. There were no purdah women and no complaints.

One hospital assistant is in charge of the segregation camp and is present at inspections to take over any suspects or plague cases that may have to be detained. The camp consists of tents and huts for Europeans and natives with hospitals properly isolated, but as only two suspects had so far been detained; the hospital assistant has had little to do. The small number of "suspects" at this station is probably due to effective inspections at Jabbulpur and Itarsi.

The drinking water is here the great difficulty. Europeans get theirs from Allahabad and natives use water from the railway well and a neighbouring tank, both of which are drying up. The station is badly lighted.

The medical officer keeps no diary. I have directed him to do so, entering the number of passengers examined each day, especially noting the number from Bombay and to send a copy of the diary each week to his superior officer.

The staff is sufficient and no new passenger is allowed to enter the train till the inspection is completed.

3. *Itarsi*.—Surgeon-Colonel Hutcheson, Sanitary Commissioner, Central Provinces, joined me at Jabbulpur, where I learned there is a

platform inspection of all passengers from the Bombay direction, conducted by a Native Assistant Surgeon and hospital assistant, but I did not consider it necessary to remain and see how it was done. We reached Itarsi at 6-45 A.M. on 27th and left again at 9-40 A.M.

The staff here consists of a Commissioned Medical Officer, Surgeon-Captain Bourke, a female hospital assistant for examining passengers, a Native Assistant Surgeon and hospital assistant for camp and other duties. Hospital and segregation arrangements for Europeans and natives are sufficient, except that a hospital for women is required, and the camp is well situated and water-supply satisfactory. There is an incinerator for the destruction of excreta and other infected substances. There are no means of disinfecting clothing or bedding except by boiling, but so far suspected articles of this kind have been burned. I have suggested that some clothing and bedding should be kept in stock to replace any destroyed.

There were 10 men and 3 women suspects in camp and since 17th February, when Dr. Bourke assumed charge, 49 have been detained; none of these have developed into plague cases, though a plague case, which proved fatal, was taken out of the train on February 16th. Before that 10 or 12 cases are said to have occurred, but the information is not reliable and there are no records.

Three trains are examined here daily, at 8-10 A.M., 4-35 P.M. and 9-49 P.M., so that there is no night duty. Dr. Bourke calculates that about 500 passengers are examined daily. I saw the examination of the 8-10 train in which were 121 passengers and was satisfied with it. I was also examined on my return on 30th in the 4-35 P.M. train. On this occasion the carriages had not been locked at the last stopping place, and passengers were able to get out before examination. I drew attention to this.

I discovered at this station that passenger carriages are attached to goods trains on various railway lines and not being scheduled the passengers thus conveyed are likely to evade inspection.

4. *Bhusawal*.—I reached at 5-3 P.M. on 27th and I remained there till 9-35 P.M.

Four trains are inspected daily—at 8-20 and 9-16 A.M. and 6-40 and 9-5 P.M. No night trains. About 700 passengers are examined each day.

The staff consists of one Commissioned Medical Officer, two Military Assistant Surgeons and five hospital assistants, and I found hospital assistants assisting at the inspections. I saw the two evening trains examined. The inspections were carefully performed.

I also visited the segregation camp, where there was accommodation for 20 plague cases and 5 suspects. There were 2 suspects under observation and three cases recovering from plague under treatment: 11 other cases of plague, making 14 in all, of whom 7 had died and 4 had been discharged cured.

The water-supply was said to be satisfactory, but the roofs of the huts were too thin to be a protection against the sun. This was about to be remedied.

The staff I considered unnecessarily large, but I learned afterwards at Kalyan that the Commissioned Medical Officer and two hospital assistants were under orders for transfer. One of the remaining hospital assistants might with advantage be replaced by a female hospital assistant as there is none here. I was examined here on the 30th in the 9-16 A.M. train. The examination appeared sufficient.

5. *Nagpur*.—We arrived here at 8 A.M. and left at 7-20 P.M. on the 28th. Three trains are examined here daily, at 8 A.M., 4-30 P.M. and 10 P.M. and from 400 to 500 passengers inspected.

The staff consists of a Commissioned Medical Officer, Surgeon-Lieutenant Hammond, a Native Assistant Surgeon, female hospital

assistant, and an hospital assistant. I saw the examination of the train in which we arrived and was satisfied with it.

I also visited the segregation camp which had been opened on 15th February with accommodation for 24 men and 8 women. At the time of my visit there were six cases under observation with four dependants. One case in hospital suspected to be plague but diagnosis not confirmed. Before the opening of the camp there had been two cases of plague with one death and one recovery, but no cases had occurred since.

There is a good water-supply and the huts suitable and well situated.

6. *Kalyan*.—As I found I had a day to spare, I decided to visit Kalyan and wired accordingly to the Surgeon-General with the Bombay Government. I arrived there at 6 P.M. and left again at 11-40 P.M. on the 29th.

I was by the courtesy of the Surgeon-General, to whom my thanks are due, met by Surgeon-Major Street, D. S. O., Deputy Sanitary Commissioner, and Surgeon-Captain Prall, Acting Secretary to the Surgeon-General, also by the two Commissioned Inspecting Medical Officers, Surgeon-Lieutenants Walton and Dixon, and shown over the segregation camp. The morning report showed that there were 15 persons in the observation sheds and 19 cases in the plague sheds. From 13th February to 29th March 301 passengers have been detained. Of these 250 were suspects. About 98 appear to have been plague cases with 63 deaths, 16 discharged cured and 19 remaining under treatment. The above figures are, perhaps, not quite accurate as some deaths from other causes appear to have been mixed up with those from plague.

Twenty scheduled trains have to be examined daily, but I could not find out the number of passengers inspected.

The staff consists of two Commissioned Medical Officers, two Military Assistant Surgeons and nine hospital assistants, besides six sepoy attendants. There are 11 policemen in charge of the camp. An additional Commissioned Medical Officer is under orders to join, as the inspection work here is necessarily very hard and trying. I was present at the examination of three trains and found them carefully and properly conducted.

The camp is on ground which will become a swamp in the rains, and I am told that the only suitable position in the neighbourhood is the military encamping-ground.

Efforts are being made to arrange for proper disinfecting apparatus.

The water-supply from a well is said to be good.

I learned here that another first class inspection station is about to be started at Munmar, the junction of the Dhond and Manmad Railway.

There is, I understand, ample room for a large segregation camp here, and should it be found necessary to detain all passengers from Bombay, this would be a suitable place for such detention.

7. *Jhansi*.—I arrived here at 2-55 A.M. and left before 4 A.M. on 31st, and I saw Surgeon-Lieutenant Robertson make a very thorough inspection of the passengers in my train. Five trains are inspected here daily—at 1-45 A.M. and 2-55 A.M. from Bombay, 3 A.M. and 12 noon from the Gwalior direction and 9-30 A.M. from Manikpur. Dr. Robertson has been here since February 8th.

The arrangements made for preventing passengers booking at Jhansi from entering the train before the inspection is completed are defective. I have drawn the attention of the Inspector-General of Civil Hospitals to this, and some other defects observed.

W. P. WARBURTON.

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W. P. WARBURTON.

Note on the arrangements in connection with the Plague Observation Camp at Khana Junction on the East Indian Railway.

The accompanying plan of the quarantine encampment will explain how it has been laid out.

It will be seen that it is divided into three portions, viz., (1) the plague hospital; (2) the contact camp; and (3) the suspect camp.

The plague camp consists of—

- (a) two structures, 45' X 16", which are the native plague hospitals,
- (b) six rooms, 10' X 10", for the families of the patients, and
- (c) eight rooms, 8' X 10", for the hospital attendants.

There is also a small pukka house for European cases, and accommodation for mehters and domes with a separate clear water tank for their use.

A Horbury's iron latrine is provided, also Larymore's stool incinerator, and there is a pure water-supply from iron tanks. The water for these tanks is obtained from a pukka well, carefully covered in, by a lift and force pump, and is thence distributed to the tanks by iron pipes. Each tank is fitted with a brass turncock, and provided with a wash-out plug for purpose of cleaning and disinfection and a covered-in manhole. There is accommodation for 40 plague cases. The beds are of iron, and thus can be quickly disinfected with a paraffin torch. *Thalas* and *battis* made of iron (Jail pattern) have been supplied for feeding purposes, as they also can be quickly disinfected by heat.

In the contact camp there are 75 huts (68 completed to date), 10' X 8", for two persons. There is thus accommodation for 150 persons. This camp also is provided with a Horbury's latrine and an iron tank for water-supply. It is surrounded by barbed wire fencing.

The suspect camp—75 huts, 10' X 8", at two persons per hut—provides accommodation for 150 persons. The camp is provided with a Horbury's latrine, and a pukka well is being rapidly constructed. The camp is surrounded with a barbed wire fencing.

Quarters for the Hospital Assistants and other officers are in course of construction.

A new shop for the *bunniah* is being built between the suspect and contact camps.

All the huts in the contact and suspect camps are numbered for convenience of registration.

Inspection.—The inspecting staff consists of two medical officers of the Indian Medical Service and two lady doctors.

One medical officer and one lady doctor are on duty together. Owing to the number of trains passing through at night, no arrangement can give more than one night in bed out of every two. Hence the duty is very severe, and the inspecting staff will have to be increased, or a breakdown may be expected.

Daily roster.—The following table will show how the 24 hours are divided into watches so as to give each inspecting officer one night's rest out of two:—

Daily roster.

9th March 1897...	...	8 A.M. to 12 noon	...	{ Dr. Calvert. Miss Lander.
		12 noon to 8 P. M.	...	{ Dr. Peck. Miss Anthoni.
		8 P. M. to 8 A. M.	...	{ Dr. Calvert. Miss Lander.

10th March 1897	...	8 A. M. to 12 noon	...	{ Dr. Peck. Miss Anthoni.
		12 noon to 8 P. M.	...	{ Dr. Calvert. Miss Lander.
		8 P. M. to 8 A. M.	...	{ Dr. Peck. Miss Anthoni.

Trains.—The following time-table gives the time and number of trains to be examined (Madras time is kept):—

Number of trains.	Time of arrival.	Number of 1st and 2nd class passengers.	Number of other class.	Plague cases.	Contact cases.	Suspect cases.	Medical officer's signature.	Lady doctor's signature.
1	2	3	4	5	6	7	8	9
12 Down passenger	0-3	9	178	...	...	...	J. T. C.	H. L.
2 " mail	3-33	12	75	...	...	...	J. T. C.	H. L.
134 " express	4-35	15	176	...	...	...	J. T. C.	H. L.
6 " passenger	6-10	4	972	...	...	1	J. T. C.	H. L.
10 " mail	8-5	2	334	...	...	...	J. T. C.	S. L. A.
52 Local passenger	9-58	2	492	...	...	...	E. S. P.	S. L. A.
4 Down "	14-2	16	496	...	...	5	J. T. C.	H. L.
122 Local mixed	16-50	...	89	...	...	...	J. T. C.	H. L.
8 Down passenger	18-17	4	478	...	...	...	J. T. C.	H. L.
Total	...	64	3,295	...	...	6		

Examination.—Pending completion of the new platform, the examination of passengers takes place at the station. All passengers are required to alight and be examined—males by the medical officers and females by the lady doctors. A European stationmaster, a European police sergeant, two head constables and nine constables attend each train. Of these, three constables are stationed on the up-platform to see that no person gets out on the wrong side of the train. In addition there are a number of railway *khalasis* present to open locked compartments, assist passengers to alight, etc. If any one is contumacious and declines to submit to the examination, time is not wasted arguing with him, but he is locked in and the carriage is cut off, and put into a siding, he being liable to the railway company for any loss or inconvenience they may sustain on this account. On the arrival of the train, ropes with hooks attached are fixed on to both ends of the first carriage and are held taut by the police. Male passengers are ranged in one or two rows nearest the ropes and facing the train. Female passengers are ranged on the platform near the train and facing it; their backs are thus turned towards the men. It has, however, been decided to examine them in future between *purdahs* or *kanats*, so as to shield them altogether from the public gaze. Care is taken to avoid wounding their feelings in any way, and the police are not allowed to handle them at all. The police sergeant or stationmaster having reported that the compartments are empty, inspection of each passenger and his ticket begins. In a large number of cases their axillæ femoral, inguinal regions, and parotid glands are examined, and the temperature of all suspicious cases is taken. Whilst the inspection of carriage No. 1 is being made, carriage No. 2 is emptied and the passengers prepared for inspection, and so on. After inspection passengers re-enter their compartments, women going first. No one is allowed to wander up and down the platform.

Suspects from Bombay.—Passengers' tickets are examined at Asansole. As a result of that examination, the Sub-Inspector of Railway Police, Asansole,

wires in advance to the medical officer and the Inspector of Police at Khana Junction the number of Bombay passengers, the class in which they are travelling, and in the case of third-class passengers, the number of their carriage. The tickets of third-class Bombay passengers are made over to the guard of the train, and they themselves are put in the last carriage for easy disposal. Passengers from Bombay, Poona, or other infected centres "suspected" by the medical officers are detained, and with their baggages are handed over to a constable for safe custody until the examination of the train is completed. If the medical officer has any serious doubt about a case, he orders the carriage from which it is taken out to be cut off and immediately disinfected. On the departure of the train, the medical officer takes charge of the suspect's ticket, notes down the name, age, sex, caste, place of residence, and infected place from whence the "suspect" has come, and the number of train from which he was removed. The station-master on duty hands the Inspecting Medical Officer a slip, showing the number of passengers examined (a) 1st and 2nd, (b) all other classes, (c) total. The inspection is then complete, and the train is allowed to go on.

Railway carriage or compartment from which suspects are taken might be rapidly disinfected before being allowed to proceed. This need not take many minutes.

W. P. W.—13-3-97.

Disposal of suspects.—The "suspects" and their effects are then handed over to the European police sergeant on duty with any special instruction the medical officer may desire to give, and the latter arranges for their escort to the camp.

The camp staff consists of—

1 Military Assistant Surgeon.

3 Civil Hospital Assistants and menial staff—cooks, bhists, mehters, etc.

On arrival at the camp the "suspects" are made over by the police constable to the Assistant Surgeon in charge, who tells them off to their proper camp, locates them in a numbered hut, provides them with bedding, *i.e.*, straw, mat, or *takta-posh* as desired, explains the rules of the camp, and finally leaves them in charge of the Hospital Assistant in charge of that particular camp. The Hospital Assistant examines them, takes their temperature, and is responsible that the first signs of any illness are reported, that they are present on various parades, and that their wants as regards water, food, etc., are attended to without hurting their caste prejudices. The information regarding the "suspects" noted by the Inspecting Medical Officer is made over to the camp clerk and duly entered in the "release diary" of the officer in charge of the camp, and their tickets are duly filed until their release.

Camp.—The camp is under the immediate control of the Assistant Surgeon, who parades the menial servants, tells them off for duty, inspects the latrines, trenching ground, water-tanks, etc., daily supervises the morning and evening roll-call of all quarantined persons, keeps a daily register, giving the names of all admissions, the camp and the number of the hut in which they have been placed, the date on which their clothes were disinfected, and how the suspects were finally disposed of. He also brings before the medical officer in charge each morning the persons who are to be discharged that day for a final examination by that officer, and finally hands them over after discharge with their baggages and tickets duly countersigned to the Inspector of Police for escort to the railway station. He is also in charge of all stores and equipments and their issue, brings to the notice of the medical officer persons who are destitute and have to be fed at Government expense. He keeps a daily report book for the information of the medical officer in charge. The medical officer in charge being on inspection duty every other night and part of each day has to rely greatly on the Assistant Surgeon in looking after the camp. He, however, personally each morning, having given orders the previous evening, examines all suspects paraded for discharge, and, after satisfying himself as to their health, countersigns their railway tickets which have been filed in the office at the time of admission. Subsequently he inspects the camp in company with the Assistant Surgeon and Hospital Assistant, and sees all quarantined persons, listens to complaints, etc., etc. At the time of his parade all suspects are

summoned by a gong and stand in front of their huts. To facilitate these orders being carried out by persons unaccustomed to discipline, the *bunniah's* shop is closed during this parade and open again immediately after it.

At present the camp contains no plague cases, and therefore also no contact cases, but it contains a number of coolies doing construction work. Under the above circumstances very strict quarantine cannot be enforced. Once, however, construction is finished, the various camps can, at any moment, be strictly segregated and communication stopped. On completion of the new *bunniah's* shop between the "suspect" and "contact" camps, separate hours will be fixed for the occupants of each camp to obtain their daily supplies. With a view to keeping the camps as dry as possible, suspects are not supplied with bathing water, but are allowed to bathe in the large tank at two separate ghâts, constables being stationed over each ghât to prevent any water (which is not fit for consumption) being carried away for drinking or cooking purposes.

Police.—The police force on duty consists of—

- 1 European Inspector of the Bengal Police.
- 2 Sergeants of the Railway Police.
- 2 Constables of the Railway Police.
- 11 Head Constables of the Bengal Police.
- 72 Constables of the Bengal Police.

Of these, 2 sergeants, 4 head constables, and 18 constables are employed on platform duty in two batches, 3 head constables and 21 constables are employed on sentry duty in camp, and the remainder on miscellaneous duty, on escort, arms, lines and reserve. Only one escape has taken place up to date. This suspect absconded on the 5th instant, was arrested at Dum-Dum on the 7th instant, and was back in camp in custody on the 8th instant.

Statistics.—Inspection began on the 15th February, and the average daily number of passengers examined is 3,027.

The total number of suspect passengers who have been detained in camp up to date is 273, and the maximum number quarantined on any one day was 135. These figures are largely due to the followers of the Gloucestershire Regiment, 71, and to two ships' crews paid off in Bombay, *viz.*, 43 and 33 respectively.

Disinfecting apparatus.—Pending the arrival of a more elaborate disinfecting apparatus, which will be ready by the end of the month, the following arrangements have been made. A steam-boiler has been set up in which steam up to 50 lbs. to 100 lbs. pressure can be generated. Steam from this boiler is passed into an iron tank, in which the clothes to be disinfected are hung on iron rods. This is a "current steam" disinfector only, the tank not being made to stand pressure. The clothes are steamed for 20 minutes. Since the bacillus of plague is non-mobile, non-sporing, and is killed by exposure to a temperature of 60° C. for 5 minutes (Klein) or by exposure to a temperature of 80° C. Kitasato, I believe the above procedure to be sufficient, provided too many clothes are not introduced into the tank at once. In practice it has been found that, owing to the trying nature of the work, the tank becomes very hot. The Hospital Assistant who has been placed in charge of the disinfection is inclined to overload it with clothes, so as to finish his work quickly and get away from the heat surrounding the engine and boiler. If the number of suspect cases should increase, we will probably have to obtain the loan of the services of a European non-commissioned officer or other European who may be trusted to implicitly carry out the orders given him, since the disinfection of clothes is important, and should be thoroughly carried out, and this under native supervision must always be a matter of doubt.

I attach copies of the general rules which have been prescribed for the guidance of medical officers in charge of quarantine camps in Bengal, and also for the disinfection of infected railway carriages.

CALCUTTA;

The 12th March 1897.

H. J. DYSON, F.R.C.S.,

Sanitary Commissioner, Bengal.

General rules to be observed by medical officers in charge of quarantine plague camps.

1. The camps are to be divided into three parts, *viz.*—

1. The plague camp.
2. The contact camp.
3. The suspicious camp.

2. The plague camp, as its name implies, should be used as a hospital for actual cases of plague. In the vicinity of this camp there are huts for the accommodation of relatives and attendants of the sick.

3. In the contact camp all persons found travelling in the same railway carriage with a plague case should be segregated.

4. In the suspicious camp all persons who appear to be ill, but in whose cases a diagnosis cannot be arrived at immediately, should be segregated and their symptoms carefully watched.

5. In the event of a considerable number of people being segregated, care should be taken to keep each day's batch separate from the others.

6. Quarantine will last for seven days; the date of departure from an infected locality should be taken into consideration in this calculation.

7. The Inspecting Officer will meet all trains from up-country and will carefully inspect all the passengers. The railway compartments should be opened one by one, and the persons travelling in it should be locked in it again before examination of the next compartment is made. In this respect, however, the Inspecting Officer will exercise his discretion with regard to 1st and 2nd class passengers.

8. Rope barriers will be found useful for examination purposes.

9. An infected carriage must be cut off at once and thoroughly disinfected after the removal of the passengers to the various camps. The carriage should first be scraped down with soap and water, and then washed over with a solution of hyd. perchloride, 1—2,000.

10. All infected clothing, bedding and articles which cannot be readily disinfected must be burnt.

11. Registers must be kept in each camp showing the date of admission, name, age and sex, daily condition, treatment and, finally, the result, and a daily abstract of this should be submitted to the Sanitary Commissioner, Bengal.

12. On the death of any person the medical officer will make a careful inventory of any property he may have, and shall forward the same to the District Magistrate after thorough disinfection, if there is no relative at hand. Foul clothing should be burnt. The medical officer should use his discretion in this respect.

13. The excreta plague should be carefully disinfected with a solution of perchloride of mercury, 1—2,000. Sawdust should be added in sufficient quantity to allow of its being burnt.

14. Care must be taken to see that the dead are properly and completely disposed of.

15. The medical officer should understand that he is responsible for all arrangements—medical as well as sanitary—and in addition to the above rules, which are only given for his general guidance, he should exercise his discretion in all matters not provided for here.

16. He should listen to any reasonable complaints from the people who are segregated, and do all he can to rectify their grievances.

17. He is also responsible and should therefore see personally to the quality of the food and water-supply for the persons detained at the plague camps.

CALCUTTA;

The 10th February 1897.

H. J. DYSON, F.R.C.S.,

Sanitary Commissioner, Bengal.

Rules for disinfection of railway carriages.

1. Any carriage in which a case of plague has been detected, after being cut off, should be thoroughly washed with soft soap and lime-water. After an interval of two to three hours this should be washed off with plain water, and then the following disinfecting solution should be thoroughly sprayed all over the interior as well as the exterior of the carriage by means of a syringe:—

Corrosive sublimate	...	$\frac{1}{2}$ oz.
Hydrochloric acid	...	1 "
Water	...	3 gallons.

This solution should be allowed to dry on the carriage. Special care must be taken to direct the solution into all the cracks and crevices and jilmills.

2. After disinfection, the carriage should be kept out in the open for 48 hours. It can then be brought into use again.

3. In the case of 1st and 2nd class carriages, which afford greater facilities than 3rd class apartments for the harbouring of plague germs, it will be necessary, if the carriage is contaminated, to burn the cushions and to disinfect the wood-work in the manner indicated above and repaint the interior.

4. Any compartment in which a suspicious case has travelled should be sprayed with the above disinfecting solution before being allowed to proceed; this can be done very rapidly and need cause no detention.

H. J. DYSON,

Sanitary Commissioner for Bengal.

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