

Government
of Bengal.

1908

MUNICIPAL
DEPT.

6

SANITATION.

JUNE.

File S. $\frac{2-S}{6}$

Nos. 1—13.

Insanitary condition of the Jharia Coal-fields.

(Investigation into the causes of an outbreak of Cholera.)

बिहार सरकार

मंत्रिमंडल सचिवालय विभाग

(बिहार राज्य अभिलेखागार निदेशालय)

LIST OF PAPERS.

1. From Mr. Haffkine, telegram dated the 6th May 1908, asking for the services of two Medical officers, one clerk and two *chaprasis* for cholera inoculation work in the coal-fields in Bengal.
2. To Mr. Haffkine, No. 99T.—Medl., dated the 8th May 1908, stating that Government is unable to spare any Medical officer asked for by him.
3. To the Sanitary Commissioner, Bengal, No. 113T.—Medl., dated the 8th May 1908, requesting to make an enquiry as to the actual nature and extent of the demand for anti-cholera inoculation at the coal-fields.
- 4-5. To Sanitary Commissioner, Bengal, No. 191T.—Medl., dated the 16th May 1908, enquiring what measures would be taken to supply pure drinking-water in the coal-field areas.

6. From the Secretary, Indian Mining Association, No. 354R., dated the 15th May 1908, suggesting that an investigation should be undertaken into the causes of the outbreak of cholera in the Jherria Coal-fields.
- 7-8. From the Government of India, No. 1225, dated the 21st May 1908, forwarding a copy of the correspondence with Mr. Haffkine on the subject of his visit to the Jherria Coal-fields, and the anti-cholera inoculation performed by him.
9. From the Government of India, No. 1252, dated the 25th May 1908, forwarding a copy of a letter addressed to M. Haffkine regarding anti-cholera inoculation.
- 10-11. From the Sanitary Commissioner, Bengal, No. 530D., dated the 2nd June 1908, submitting report on the nature and extent of demand for anti-cholera inoculation at the coal-fields.
12. To the Secretary to the Government of India, Home Department, No. 366T.—San., dated the 4th June 1908, intimating that this Government is not willing to reintroduce M. Haffkine's system of anti-cholera inoculation in this Province.
13. To the Secretary, Indian Mining Association, No. 488T.—San., dated the 18th June 1908, replying to their letter No. 354R., dated the 15th May 1908.

बिहार सरकार

मंत्रिमंडल सचिवालय विभाग
(बिहार राज्य अभिलेखागार निदेशालय)

3

(8)

INSANITARY CONDITION OF THE JHARIA COAL-FIELDS.

[No. 1.]

[FILE S. $\frac{2-S}{6}$ 22.]

Telegram dated the 6th May 1908.

From—Calcutta,	To—Darjeeling,
From—Haffkine, U. S. Club,	To—Secretary, Bengal, Municipal.

CAN you place under my orders for anti-cholera inoculation in coal-fields two medical officers, one clerk, two *chaprasis*? If so, will be very grateful for these being deputed to me, Calcutta, very urgently, as the work ought to be proceeded with without delay.

[No. 2.]

[FILE. $\frac{2-S}{6}$ 23.]

Telegram dated the 8th May 1908.

From—Darjeeling,	To—Calcutta,
From—Secretary, Bengal, Municipal,	To—Haffkine, U. S. Club.

No. 99T.—Medl.—Lieutenant-Governor regrets that Inspector-General of Civil Hospitals is unable to place any Government medical officers under your orders as proposed, but suggests your applying to Principal, Medical College, for names of qualified passed students.

[No. 3.]

[FILE S. $\frac{2-S}{6}$ 24.]

No. 113T.—Medl., dated Darjeeling, the 8th May 1908.

From—C. E. A. W. OLDHAM, Esq., Secretary to the Government of Bengal,
Municipal Department,
To—The Sanitary Commissioner, Bengal.

I AM directed by His Honour the Lieutenant-Governor to request that you will be so good as to institute enquiry at once, through the Deputy Sanitary Commissioner concerned, as to the actual nature and extent of the demand for anti-cholera inoculation at the coal-fields, and then advise whether Government should take any steps towards such inoculation through the agency of its own officers.

[Nos. 4-5.]

[FILE S. $\frac{2-S}{6}$ 25.]

No. 191T.—Medl., dated Darjeeling, the 16th May 1908.

From—C. E. A. W. OLDHAM, Esq., Secretary to the Government of Bengal,
Municipal Department,
To—The Sanitary Commissioner, Bengal.

IN forwarding, for your information, the enclosed copy of a demi-official letter addressed by Mr. W. T. Griffiths to the Principal of the Sibpur Engineering College, I am directed to request that you will, after consulting the local officers, report, for the information of His Honour the Lieutenant-Governor, what measures you consider ought to be taken for the supply of pure drinking-water in the coal-field area, and to what extent such measures should devolve upon Government, and to what extent upon the Coal Companies.

D.-O. No.

ASANSOL,

The 23rd April 1908.

MY DEAR HEATON,

The cholera epidemic has had such an effect upon the attendances at my lectures, that I decided to give a holiday during Baster week. I have my work well in hand and could afford to do this, as well as deliver my 100 lectures by the end of May.

I do not think that Calcutta people realise the very terrible nature of the scourge this year. At individual mines a hundred natives are carried off in a week, and a large number of collieries are completely shut down. No arrangements for burial being provided nor for cremation, the country-side is covered with corpses. They lie most gruesome objects in *nullahs* and depressions and in the paddy fields, the food of vultures and pariah dogs. As an example, at the adjoining mine to this, which belongs to the Reliance Coal Company, of about 500 miners, there were 70 deaths in three days, and this is a common instance. Even some of the European Managers are getting frightened, and are applying for leave and going away. As an eye-witness, I cannot help but think that it is absolutely necessary that Government should cause, or take measures, to provide a supply of pure water in these districts, so as to prevent the awful wastage of life that takes place periodically.

I propose going around my centres again next week ; but if the attendances do not improve, I am afraid there will be no alternative other than to close for the session.

I am advised that should we have rain in small quantities, matters will only become worse, because the filth from the surface of the soil will be washed into the tanks and *nullahs*: the natives will drink it, and the pestilence will spread. The only thing that can improve matters is a steady fall of 3" to 4" of rain, so as to wash the surface of the earth and carry the poison to the sea.

I hope you have benefitted from your trip to Darjeeling.

Yours sincerely,

W. T. GRIFFITHS.

To B. HEATON, Esq.

[No. 6.]

[FILE S. $\frac{2-S}{6}$ 26.]

No. 354R., dated Calcutta, the 15th May 1908.

From—H. M. HAYWOOD, Esq., Secretary to the Indian Mining Association,

To—The Secretary to the Government of Bengal, Municipal Department.

THE Committee of the Indian Mining Association desire to refer to a matter in connection with the epidemic of cholera which recently broke out in the Bengal Coal-fields, and which continues practically unabated in both the Jherria and the Raniganj districts.

2. The Committee notice that at a meeting which was recently held in Jherria, and at which the Subdivisional Officer and the Civil Surgeon of the district were present, the suggestion was made by Mr. W. M. Haffkine that an exhaustive scientific investigation should be undertaken into the causes of the outbreak; this suggestion appears to them to be so sound that they do not hesitate to strongly support it, and they trust that it will be given effect to by Government. But if such action is to be taken, it is important that no time should be lost, for unless the investigation be undertaken immediately, it will be impossible to have it carried out before the break of the rains, after which nothing can be done. The investigation would include a bacteriological examination of the waters used in the different coal-fields, and a careful study of the various agencies by means of which the disease is believed to be propagated.

3. In venturing to support the proposal, the Committee would merely add that it seems to them to be a matter of the most urgent importance that the searching enquiry suggested should be undertaken at once: the difficulties of determining the causes responsible for the disease are great, and the necessity for full investigation is therefore the greater. It will be within the knowledge of Government that since the outbreak began—about the beginning of April—the number of deaths has been enormous; it is not necessary for the Committee to go into details in regard to the difficulties experienced in connection with the disposal of the corpses, nor to the danger to every one concerned which resulted from the lack of proper facilities for burying or burning. But it would not be amiss to refer to the panic which took hold of the labour on the collieries, the coolies in many cases immediately leaving the districts, at great risk to those with whom they might afterwards come in contact.

4. There are other reasons which might be brought forward in support of the Committee's request: but they do not think it necessary to elaborate their statement. It appears to them that the facts that such an epidemic has occurred this year, that it has wrought such widespread havoc, and that it is liable to occur again at any future time, warrant them in strongly seconding the proposal for an exhaustive enquiry into the cases of the disease.

[Nos. 7-8.]

[FILE S. $\frac{2-S}{6}$ 27.]

No. 1225, dated Simla, the 21st May 1908.

From—SIR HAROLD STUART, K.C.V.O., C.S.I., Offg. Secretary to the Government of India, Home Department,

To—The Secretary to the Government of Bengal, Municipal Department.

I AM directed to forward, for information, a copy of the marginally-noted correspondence with Mr. Haffkine regarding a visit which he made to Jheria, with the object of reviving his system of inoculation against cholera. The previous experiments with Mr. Haffkine's prophylactic against cholera were carried out to a large extent in Bengal, and the present proposal that a special staff should be sanctioned to conduct inoculations in that Province is one which in the opinion of the Government of India can best be dealt with by the Local Government. They will therefore be glad if His Honour the Lieutenant-Governor will consider the matter in the light of the Local Government's past experience of anti-cholera inoculation and will inform them in due course of his decision. If an inoculation staff is appointed as proposed by Mr. Haffkine, I am to say that the condition laid down in the Home Department letter No. 4—169-178, Medl., dated the 28th March 1893, that the operation shall be made only with the consent of the patient or with that of his friends, should be adhered to. I am to add that the Government of India are unable to spare any officers from the Bacteriological Department for this work.

1. Letter from Mr. Haffkine, dated the 18th April 1908.
2. Letter to Mr. Haffkine, No. 1064, dated the 29th April 1908.
3. Letter from Mr. Haffkine, No. 22, dated the 9th May 1908 and enclosures.

Dated Calcutta, the 18th April 1908.

From—W. M. HAFFKINE, Esq., C.I.E.,

To—The Secretary to the Government of India, Home Department.

I HAVE the honour to report that in connection with the severe outbreak of cholera at Jheria, in the coal-fields, East Indian Railway, where several Europeans and a number of natives have been reported to have succumbed to the disease, I put myself in communication with the Doctor in charge, and upon a wire from him received to-day, propose to leave to-morrow on a visit to that place. My object in doing so is to endeavour to revive the work of anti-cholera inoculation interrupted in India some time ago.

I shall not fail to report on the operations which I may possibly be in a position to perform on this occasion. In the meantime I beg to request Government's kind approval and sanction to the above action taken in view of the pressing circumstances of the matter.

No. 1064, dated Simla, the 29th April 1908.

From—P. W. MONIE, Esq., Under-Secretary to the Government of India, Home Department,

To—W. M. HAFFKINE, Esq., C.I.E.

I AM directed to acknowledge the receipt of your letter, dated the 18th April 1908, regarding your visit to Jheria in connection with a severe outbreak of cholera in that place, and to say that the Government of India will be glad to receive the report promised in your letter.

No. 22, dated Calcutta, the 9th May 1908.

From—W. M. HAFFKINE, Esq., C.I.E.,

To—The Secretary to the Government of India, Home Department.

IN continuation of my letter of 18th ultimo, reporting my proposed visit to Jheria, and in reference to your letter No. 1064 of 29th idem, in which you mention that Government will await my further report on the subject, I have the honour to amount the following analysis of the inoculations against cholera performed by me during my stay in the coal-fields.

On the day following my arrival, I inoculated 7 Europeans who were connected with the management of the Jamadoba and Lodna Collieries, with the Bengal-Nagpur Railway, and with the management of the Raja's Estate, and 1 European lady.

Next day 14 natives of India, all males, and 12 Europeans, including 3 ladies, were inoculated. Among the Europeans were officials of the Jamadoba, Jealgora and Lodna Collieries; Mr. A. Scroope, i.c.s., Subdivisional Officer of Gobindpur; Captain Coppinger, i.m.s., Civil Surgeon of Purulia; and Mr. Lunn, Medical Officer of the Indian Mining

Association. The Indians were the Sub-Inspector of Police, the clerks and servants of the Jheria Club and private servants.

On both the above occasions the operations were performed at the Jheria Club.

On the day following, they were carried out in connection with two collieries, the Lodna and that of the Standard Coal Company; 49 Indians, all males, and 4 Europeans submitted to the operation.

The Europeans were 3 Engineers and 1 Colliery Assistant of the Standard Coal Company, Limited. The Indians were—

- 7 private servants;
- Native Doctor of the Standard Coal Company, Limited.
- 3 munshis of the Lodna Colliery, and 6 of the Standard Coal Company;
- 1 contractor and 3 shop-keepers connected with the Lodna Colliery;
- Accountant, cashier, store-keeper, assistant store-keeper and overman of the Standard Coal Company;
- 2 khalassis (engine, drivers), the colliery overman and his assistant of Lodna;
- 3 mason mistris, 2 fitter mistris and 1 carpenter of Lodna;
- 1 sirdar coolie and 5 coolies of Lodna; and
- 1 sirdar coolie and 5 coolies of the Standard Coal Company.

The distribution by religion and caste was as follows:—

15 Muhammadans;	2 Gopes;
10 Brahmins;	1 Bhuian;
3 Kyasthas;	1 Koli;
1 Chuttria;	1 Tanti;
3 Dossads;	2 of the Barber caste (including the Native Doctor);
1 Gowala;	1 Mehtar; and
3 Borhais;	3 Hindus of castes not recorded.
2 Bowries;	

3 On the fourth day, the 24th, the number of Europeans inoculated was 8, and that of Indians 22. The former were represented by an Engineer, a Colliery Manager, and a Mining Assistant of the East India Coal Company; 3 ladies and a baby of 14 months.

Among the Indians there were this time 9 females—3 of them belonged to Sikh families; 1 a Native Christian, 1 a Koli and 4 Haris. The males were—

2 Muhammadans;	1 Dossad;
4 Sikhs;	1 Gowala;
2 Brahmins;	1 Mali and
2 Haris.	

On the fifth day, by the efforts of Mr. John W. Murphy, Manager of the Bagdigi Colliery, I inoculated mining coolies. The inoculated on that day included Mr. Murphy himself, 2 Brahmins and 25 miners: 24 of the latter were of the Bowrie caste, and 1 was a Lahor; 13 were males, and 12 females.

On the sixth day, 6 Indian *purdah* ladies submitted to inoculation. They were: 1 of the Brahmin, and 5 of the Kyastha caste; besides these, 1 European Manager of the Bhowra Colliery, 1 Sikh, 2 Muhammadans, 1 Brahmin, 4 Kyasthas and 2 Kahars got themselves inoculated. The Indians were connected with the Jamadoba Colliery, and included the Native Doctor, a Kayastha by caste.

On the seventh day, the 27th April, the whole of the small number of mining coolies present in the *dhowries* (coolie dwellings) of Mr. Murphy's colliery, notably those who had not been inoculated on the 25th, got themselves inoculated. Their number was 81. Two Anglo-Indian employes and the little daughter of one of them were operated upon on the same occasion. The 81 minors belonged to two castes; 48 were Bowries and 33 Deswalis; 36 of them were females; 24 children under 9, including a baby of 18 months.

With 1 European lady and 5 private servants inoculated on the same day, the number of the operations on the 27th was 91, the largest done in Jheria. Early next morning 1 left for Sejua (some 70 miles distant), where the Europeans were anxious to get themselves inoculated.

On my arrival in the afternoon, 102 persons were operated on. They were 21 Europeans, including 5 ladies; and 81 Indians, of whom 23 were women.

The Europeans were connected with the local collieries. The majority of the natives were private servants. Among the 81, there were—

24 Muhammedans;	2 Kories;
1 Kayastha;	3 Dossads;
2 Kurmi Mahatoes;	1 Bowrie;
2 Gowalas;	2 Malis;
13 Bhoyas;	23 Haris;
2 Jaisowarahs;	1 Mehtar;
1 Chuttria;	1 Turie (?); and
2 Rujwars;	1 Hindu, caste not recorded.

Next day I went out to the small neighbouring village of Titilmuri, and inoculated 24 persons of the Mahato caste, viz., 9 males and 15 females. On the same day 31 others were inoculated, viz:—

8 Europeans, including 2 ladies;	1 Sonhar;
7 Muhammadans;	1 Dossad;
2 Brahmins;	1 Khoria;
2 Kayasths;	2 Kahars;
1 Rajput;	5 Lohars; and
1 Bowrie.	

On the 1st of May were inoculated—

1 European Colliery Manager;	Chuttria;
2 Muhammadans;	6 Kurmi Mahatoes; and
7 Brahmins;	1 Mehtar.

The same night I returned to Calcutta.

I was very badly equipped for these operations, lacked in personal effects, cultivation tubes, trained servants, etc.

I.

On the general question of the preventive inoculation against cholera, I beg to refer to my report of 25th August 1895, submitted to the Secretary to the Government of India in the Home Department, on the operations performed in the United Provinces and Oudh, the Punjab, Lower Bengal and Assam, in 1893—95; to the report of Surgeon-Major (now Colonel) R. Macrae, i.m.s., at the time Superintendent and Civil Surgeon of Gaya district, on the inoculations in the Gaya Jail in 1894; to that of Surgeon-Captain (now Lieutenant-Colonel) Christian Hare, i.m.s., on the inoculations in the Khassia Hill coolies in 1895; to that of Surgeon-Captain (now Lieutenant-Colonel) E. Harold Brown, i.m.s., on the inoculations in the Darbhanga jail in 1896; to the reports published in the *Indian Medical Gazette* of 1895, the *Lancet* of 18th July 1896, and the *Journal of Tropical Medicine and Hygiene*, December 1889, by Dr. A. Powell, on the inoculations in the Assam Tea Estate coolies; and to the report, dated 1st July 1896, of the Health Officer to the Chairman of the Corporation, on the anti-choleraic inoculations in Calcutta in 1894-1896.

At the time of my arrival at Jheria, a large proportion of the native mining population had left the place in consequence of the epidemic, and was not expected to return for some weeks. Part of the collieries were shut down, and the rest were working at a much reduced rate. The Managers were well aware of what the programme of general measures against cholera comprised, and they appeared far more competent than the advocates of those measures generally are as to the degree of practicability and usefulness of those measures. It was obvious that the question of keeping their labour free from disease and panic was of enormous interest to them. The actual conditions in the coal-fields were, however, proof that there was no possibility of arresting the outbreak by any of the measures in stock. Not only was this out of question in regard to the current epidemic, but I was informed that severe outbreaks, and the consequent desertion of the mining population, with all the incidental heavy losses to the mining and railway concerns, were practically annual events in the coal-fields, and the Managers have come to consider the dispersion of the labour as the only possible and really beneficial factor in these occurrences. I believe that these facts are far graver and more telling than any theoretical reflexions and arguments that can be brought to bear on this subject.

I propose that by careful and cautious work, inoculation be introduced into the regions in which such a condition of affairs exists, and that the beneficial effect of this measure be gradually demonstrated by full and accurate enquiry to all concerned. The Managers of the collieries greet this suggestion with eagerness, and prove their earnestness by the attitude which they have adopted with regard to my operations. The inoculation, if gradually brought to the knowledge of, and spread among, the local labour, would reduce the frightful mortality which decimates it, and would counteract the feeling of helplessness and danger which at present sets in at every appearance of the disease.

The series of inoculations reported upon in this letter was undertaken by me in a hurry, and under extremely unsatisfactory conditions.

In the few days of work in the coal-fields, I used up the experimental stock of cultivation materials which existed in my laboratory at the time of leaving Calcutta, and also that which I was able to borrow from my old pupils and assistant in the Health office here. I had to abandon the operations and come down to Calcutta to prepare a new supply.

The vaccine employed for inoculation requires to be kept up to its strength by constant operations on animals. I was unable to do this while away in the districts.

The organization of the inoculation work at the place of the outbreak, the enquiries as to the spread of the disease, the explanations to be given to the people, and the efforts to induce them to accept the measure, and lastly the most important study of the immediate and the protective effects of the operation require a vast amount of care and attention.

The carrying on of the inoculation itself implies the cultivation of a supply of vaccine locally, 24 hours in advance of the injections—

- the microscopic examination of the cultures when ready, *i.e.*, immediately before the operations;
- the preparation of the "lymph," that is, the emulsification of the cultures in sterile fluid under aseptic conditions;
- the manipulations necessary for sterilizing the syringe and keeping it sterile throughout the operations;
- the inoculation of the people; and
- the accurate registration of those inoculated.

In the operations in Jheria and Sejua, I endeavoured to carry out all the above myself or with such accidental help as I was able to obtain from those who happened to be on the spot. In consequence, certain very essential points relating to the nature and preparation of the vaccine used by me could not be attended to, and I acted so much in the dark that the effect of those operations remains for me to a considerable extent a subject of uncertainty and anxiety. Considering that the operations imply an enormous amount of work, and, to the operated on, cause a great deal of trouble and bodily pain and discomfort, the carrying on the work under these conditions is unfair to all concerned.

The following workers are required for these operations:—

- (i) *In a laboratory serving as a centre*—A responsible and trustworthy officer to be specially trained, to keep the vaccine up to the requisite height of efficiency, and to prepare and supply the inoculators in the districts with the proper germs, cultivation material and other necessities; one servant to assist him.
- (ii) *At the place of inoculation*—An inoculating officer of a standing sufficient to inspire confidence and respect in Europeans and Indians; a clerk; and a servant.

I would attend personally to the other problems connected with this work.

I beg to request the favour of Government giving their kind consideration to this matter, and, if possible, appointing the above staff to help in the present urgent circumstances.

II.

I beg further to refer to your letter No. 178 (Sanitary) of the 21st January last, paragraph 5, in which you say that, when occasion requires, I may address the Heads of the Medical and Sanitary Departments, and in doing so I should simultaneously send a copy of my communications to the Government of India in the Home Department.

Possibly the attached letter, dated Jheria, 25th ultimo, addressed by me to Lieutenant-Colonel F. C. Clarkson, *i.m.s.*, Sanitary Commissioner, Bengal, a former assistant of mine in the cholera work in Bengal, comes under the above order. I beg to express regret for not having had with me your letter above quoted, and having overlooked the fact that I was to send to you a copy simultaneously with the letter addressed to the Sanitary Commissioner.

In explanation of the subject-matter of the paper in question, I beg to say that at the time of an outbreak it is only certain categories of water reservoirs that are found liable to harbour cholera germs; and that even among the reservoirs of a category subject to contamination, some will remain persistently free. It is, however, impossible to say, without examination, which of the waters of a locality are bad, and which remain harmless.

Further, the Managers in Jheria had contradictory experiences as to the safety of the water purified by percolation into wells, and by filtration through the so-called "Jewell" filters.

The rest of the matter will, I think, be clear from the attached paper.

MANBNUM.

The 25th April 1908.

MY DEAR CLARKSON,

At the end of a meeting at which, on the invitation of the Deputy Commissioner, Purulia, I was present, and made, on his suggestion, a few remarks, he desired me to write to you the accompanying letter.

If the matter were to be proceeded with, which seems to me very desirable, all the necessary steps would have to be taken very urgently. I return to Calcutta in a couple of days. My address will be the *United Service Club*.

The Colliery Managers of Jheria are prepared to do their best to prevent outbreaks of cholera, and require advice in the matter. It is impossible to give them that advice without a study, and the water is the first indicated for such a study.

2. There are four different kinds of water used in this place:—

- (i) water pumped up from the mines and canalized or piped to various places where it is allowed to sink into the ground: close to such a ground a well is sunk protected by a masonry wall; and the water percolating into the well is used;

- (ii) mine water is filtered through a "Jewell" filter, and distributed for use ;
- (iii) water in ordinary open village tanks is also used ; as well as
- (iv) river water.

3. Much guidance as regards the requisite measures of prevention might be derived from an examination of these waters carried out, while the present exceptional conditions of infection last.

The examination might be done in the following way :—

After a preliminary meeting and discussion, the Colliery Managers in a certain typical section of the district would provide themselves (or would be provided) with, say, 100 sample bottles and labels each.

On an appointed morning the Manager, with assistants if necessary, would make the tour of the respective locality and visit every tank and other water reservoir (well, filter tank, bank of the river) to be found thereon, or as many of them as practicable.

He would then—

- (a) take from each reservoir a sample in the manner demonstrated to him (so as not to contaminate one sample from another) ;
- (b) would label the sample so as to clearly designate the source it comes from ;
- (c) would note down whether, to his knowledge, there have been lately cases of cholera in the immediate vicinity ;
- (d) would place the sample bottle in a box containing some ice and carried with him on his tour ; and
- (e) after completing the tour, would send the ice box to a temporary laboratory in an appointed central place where the examination would be carried out.

4. The latter would have to be started immediately each ice-box arrives. The first examination would take two days. All doubtful cases would then be re-examined ; and those sources of water which, in this first examination, would appear contaminated, would be specially revisited, and samples taken from them with enhanced precautions, and re-examined. This would take another two days. The results would then be compiled. Within a week of the first collection of samples, the results of the survey would be known. Incidentally the various plans used in the place for purifying water would have been tested.

5. Supposing 500 samples are brought at the laboratory for examination, two bacteriologists and half-a-dozen subordinates would be required for one week to carry out the examination. Among the subordinates there should be as many knowing how to inseminate bacteriological cultures and make microscopic specimens, as can be gathered together in a few days.

6. The position of this district as a centre of an important industry in which vast capital is engaged, would justify the making of a special effort to elucidate the origin of its troubles. Further, a survey carried out in this place may yield results throwing light on the conditions in Bengal in general. Lastly, the fact that in this district there is, on a comparatively small area, an exceptional proportion of enlightened residents, all interested in the solution of the question points out this place amongst others for a study like the above.

7. The fall of a heavy shower of rain mixing up the waters of different sources, or the abatement of the epidemic, *i.e.*, the disappearance of infection from certain sources which were responsible for the outbreak, would render the results defective or nugatory. The enquiry as sketched out above, if undertaken, should therefore be started and carried out without delay, say within a week or so of the present date. Can you provide the workers mentioned above ? Still better, can you come down with them and stay part or whole of the time the enquiry lasts ?

If I personally were to help, I would require to be informed urgently by wire, for many preparations must be made. I would require the two Bacteriologists mentioned above to be men experienced in microscopic examination.

I understand that Mr. Coupland, *c.s.*, will write to Government and to you simultaneously with this.

Hoping you are well.

Yours sincerely,

W. M. HAFKINE.

III.

Great embarrassment was caused in the coal-fields by the accumulation of dead bodies. The demand for Domes acting as corpse bearers became so great, that the more indigent families were unable to pay them the high fees that were current ; and whenever they could not, or were afraid to, remove the body themselves, they had to desert the hut in which a deceased was lying and getting offensive. Further, owing to the pressure of work, the Domes carried corpses only short distances from the dwelling-houses and left them by the road in order to attend to other cases. Unburied, or only very superficially buried, corpses, partially devoured by animals, were therefore found in various places. Mr. S. Apear, who was staying in a tent while I was in Sejua, had a human leg brought into his tent by a dog. I was told of another case in which, again, a domestic dog brought a small dead body into a European house.

During my stay in Jheria, the District Officers came into the station twice to attend conferences of the Europeans discussing measures to meet the above condition of affairs. The difficulties were very great.

Compared with the vast demand, there was a great scarcity of Domes; and those that were to be found, exacted exorbitant wages. Efforts were to be made to import parties of them from neighbouring districts, but there were difficulties in inducing them to stay in one place, as they earned much more by wandering about.

By burial, corpses could be disposed of wherever they happened to be found; but the digging of a sufficiently deep grave takes a great deal of time and labour, which could not in the present circumstances be afforded. On the other hand, the collieries offered a ready supply of fuel for burning; but fuel could not be carried to the corpses, and there was no possibility of compelling relatives of Domes to carry corpses long distances to a burning ground when so many cases had to be attended to.

The solution of this question must obviously vary in different places.

Attached letter, addressed by me to Mr. A. Scroope, I.C.S., Subdivisional Officer, Gobindpur, Manbhum, refers to one particular place therein specified. Prompt measures were taken. I am informed to-day from Sejua as follows:—

“Mr. Scroope came to see us *re* the letter you wrote to him. Domes and Police were fetched, and all the unburied bodies were burnt straight away.”

Accompanying photographs have reference to my letter.

SEJUA,

The 1st May 1908.

DEAR MR. SCROOPE,

I went yesterday with Dr. Lunn, Medical Officer, Indian Mining Association, to the Bansjorah *nullah*, north of the East Indian Railway, half-a-mile from the General Manager, Burrakar Coal Company's Bungalow; and upon a space of 200-300 yards found about 150 bodies (we counted 134) brought and disposed of there recently. A proportion of the above bodies were buried, and limbs and skulls could be seen uncovered in some of the graves; one or two bodies were burnt; a number were simply deposited on the ground and covered with the *charpois* or stretchers on which they had been brought; others were lying uncovered, some partly eaten and torn by animals, others yet untouched. A party of Domes were digging a grave for a fresh corpse. The first showers of rain are likely to open most of these graves.

Mr. Veasey, the General Manager, is prepared to provide coal for a pyre, and pay a reasonable salary to a Dome to stay and keep the pyre going. Could you have a policeman stationed in the neighbouring and direct the Domes, as they arrive with corpses, to deposit them in the bon-fire? Of course Muhammadans and others, insisting on digging a grave and burying the body, would not be forced to burn it. The majority would probably be grateful for the pyre.

The plan in this particular instance seems likely to work without any further measures being necessary; and the experiment made here may possibly show how the problem might be solved in some other specially situated places.

Kindly inform Mr. Veasey whether you are in a position to help in the above manner. I return for a few days to Calcutta tonight.

Yours sincerely,

W. M. HAFFKINE.

[No. 9.]

[FILE S. $\frac{2-S}{6}$ 28.]

No. 1252, dated Simla, the 25th May 1908.

Endorsed—By the Government of India, Home Department.

COPY of the following forwarded to the Government of Bengal, in continuation of the Home Department letter No. 1225, dated the 21st May 1908.

No. 1251, dated Simla, the 25th May 1908.

From—P. W. MONIE, Esq., Under-Secretary to the Govt. of India, Home Dept.,
To—W. M. HAFFKINE, Esq., C.I.E., Manbhum.

WITH reference to your letter No. 24, dated the 17th May 1908, I am directed to invite your attention to the circular letter from this Department, dated 28th March 1893, No. 169-178, in which it was laid down that before you inoculated any person against cholera, you should explain the proposed remedy fully to him or to his friends, and obtain his or their consent to the inoculation.

2. The proposals made in your letter, dated the 9th May 1908, are being examined in consultation with the Government of Bengal.

[Nos. 10-11.]

[FILE S. $\frac{2-S}{6}$ 29.]

No. 530D., dated Darjeeling, the 2nd June 1908.

From—LIEUTENANT-COLONEL F. C. CLARKSON, I.M.S., Sanitary Commissioner for Bengal,

To—The Secretary to the Government of Bengal, Municipal Department.

IN accordance with the Government orders conveyed in their No. 113T.—Medl., dated the 8th ultimo, Captain Ross, I.M.S., was detailed to enquire and report on the nature and extent of the demand for anti-cholera inoculation at the coal-fields. His report, a copy of which is herewith forwarded, shows that any attempt to organize an inoculation campaign would result in a general stampede. Moreover, he says that this measure being of temporary benefit, "it cannot be carried out on so large a scale as to raise it to the dignity of a preventive measure of any merit, nor is it in cost, efficiency, practicability or adaptability in any way comparable with the ordinary preventive measures known and practised."

I agree *in toto* with Captain Ross, and would add that such small demand that may exist among European Mine Managers and their superior staff may be met by their making at their own expense their own arrangements for anti-cholera inoculation, which although of some protective value and of use in preventing panic is unnecessary, provided proper precautions as to food and drink are taken.

In this connection, I would draw the attention of Government to the fact that for several years an establishment for preparing the anti-cholera vaccine was maintained by this Department at Purulia for inoculating cooly emigrants, but at the instance of the Chief Commissioner of Assam, who was of opinion that it had 'not been of material effect in obviating epidemics of cholera, while it must have acted as a deterrent to emigration,' it was abolished.

It would in my opinion not be desirable to re-introduce cholera inoculation among the cooly population, as any disorganization of labour either due to cholera itself or to the inoculation would probably be put down to the latter.

No. 75, dated Bankipore, the 27th May 1908.

From—CAPTAIN W. C. ROSS, I.M.S., Deputy Sanitary Commissioner, Bihar and Chota Nagpur Circle,

To—The Sanitary Commissioner, Bengal.

WITH reference to your No. 218D. of 11th May 1908, I have the honour to report that I visited Jheria and the surrounding coal-fields from 18th to 24th May, and found that the epidemic of cholera had almost come to an end. I made enquiries locally from Managers, the subordinate staff and coolies on various collieries with regard to the demand for anti-cholera inoculation, and I collected a conflicting mass of opinions.

A considerable number of Managers have been inoculated, and have got some of their staff and coolies also inoculated. Others have been themselves inoculated, but decline to press the process on their subordinates; and others again will have nothing to do with inoculation. I found it difficult to arrive at a proper estimate of the demand for inoculation, because of the enthusiasm of the devotees of the treatment who largely exaggerated the extent of the demand and the willingness of the subordinate staff, and coolies to undergo the operation, but I am satisfied that there is only a very limited number who would undergo the operations now that the scare is over.

Those who were inoculated, were firstly Europeans (Managers and assistants), and then those of the colliery staff who are most permanently domiciled in the field. The floating cooly population nearly all ran away, and very few of them were inoculated at any time. Many of them who were remaining, threatened to run away, when any attempt was made to press inoculation.

From my own enquiries I am satisfied that both the Babus and coolies distrust inoculation, and will not allow it except in a few cases, and I am confident that any attempt to organise an inoculation campaign would result in a general stampede.

Personally, I am of opinion that while inoculation is of temporary benefit to the individual during an epidemic, it cannot be carried out on so large a scale as to raise it to the dignity of a preventive measure of any merit, nor is it in cost, in efficiency, in practicability or in adaptability, in any way comparable with the ordinary preventive measures known and practised.

The question of cholera prevention is intimately associated with the problems of pure water-supply and conservancy, and I have previously pointed out, in my reports on the Jheria

Coal-fields the deficiencies and the needs which exist, and have warned the collieries to expect the epidemic which has just passed. The epidemic came and spread like wild fire. It has passed now, not because of any measures taken, because in most cases there were none, and in many collieries the disease was deliberately spread by the people on one colliery removing, the cholera corpses to other properties, and throwing them into the villages or tanks there, but it has passed because the living left their dead and fled away, and because a great storm came and washed the land clean.

[No. 12.]

[FILE S. $\frac{2-S}{6}$ 30.]

No. 366T.—San., dated Darjeeling, the 4th June 1908.

From—C. E. A. W. OLDHAM, Esq., I.C.S., Secretary to the Government of Bengal,
Municipal Department,

To—The Secretary to the Government of India, Home Department.

I AM directed to acknowledge the receipt of your letter No. 1225, dated the 21st May 1908, and Mr. Monie's endorsement No. 1252 of the 25th idem—forwarding a copy of correspondence which has passed between the Government of India and Mr. W. M. Haffkine on the subject of the latter's visit to the Jharia coal-fields during the recent cholera outbreak in that locality, with the object of reviving his system of inoculation against cholera. As the result of his visit to the coal-fields Mr. Haffkine is convinced of the desirability of widely extending his system of inoculation, and asks for the following staff to assist him in doing so:—

1 specially trained Bacteriologist.	1 clerk.
1 Inoculating officer.	2 servants.

The Government of India consider that this is a matter with which the Local Government should deal in the light of past experience, and in transmitting the correspondence to this Government, ask to be informed of the action taken.

2. In reply, I am to say, that in pursuance of the orders contained in Home Department letter No. ^{7-Med}₂₆₆, dated the 26th March 1896, every facility was afforded Mr. Haffkine in the prosecution of his enquiries and work in connexion with cholera epidemics in this Province; and certain officers were deputed to assist him on that occasion and at the same time to study the system of anti-cholera inoculation. The system was subsequently tried in Calcutta and in different parts of the Province, and a depôt was established at Purulia which served for the inoculation of coolies proceeding to the labour districts in Assam.

3. In 1900 the question of continuing the experiments was considered by this Government, and on the recommendation of the Inspector-General of Civil Hospitals and the Sanitary Commissioner, who were of opinion that there was no appreciable demand for anti-cholera inoculation in Bengal and that it interfered with the progress of vaccination, it was decided by the late Sir John Woodburn to abandon it so far as the Province generally was concerned, though to meet the requirements of the coolies for Assam the arrangements at Purulia were maintained. These, however, were finally discontinued in 1905, on the representation of the Chief Commissioner of Assam, who after consulting the Indian Tea Association and its branches, was of opinion that the inoculation of emigrants on their way to Assam had not been of material effect in obviating epidemics of cholera, while it must have acted as a deterrent to emigration.

4. Previous to the receipt of the present communication from the Government of India, the Lieutenant-Governor having received an application from Mr. Haffkine for a small staff to assist him in carrying on his inoculation work in the coal-fields, caused enquiries to be made by the Sanitary Commissioner as to the actual nature and extent of the demand for anti-cholera inoculation, in order to decide whether any steps should be taken by Government in the matter. The Sanitary Commissioner has now submitted a report from the Deputy Sanitary Commissioner, Bihar and Chota Nagpur Circle, who, after visiting Jharia and making the fullest enquiry, writes as follows:—

“Those who were inoculated were firstly Europeans (Managers and assistants) and then those of the colliery staff who are mostly permanently domiciled in the field. The floating

cooly population nearly all ran away, and very few of them were inoculated at any time. Many of them who were remaining, threatened to run away when any attempt was made to press inoculation."

"From my own enquiries I am satisfied that both the Babus and coolies distrust inoculation, and will not allow it except in a few cases; and I am confident that any attempt to organize an inoculation campaign, would result in a general stampede."

"Personally, I am of opinion that while inoculation is of temporary benefit to the individual during an epidemic, it cannot be carried out on so large a scale as to raise it to the dignity of a preventive measure of any merit; nor is it in cost, in efficiency, in practicability or in adaptability in any way comparable with the ordinary preventive measures known and practised."

5. The Sanitary Commissioner entirely agrees in the above view, and adds that, in his opinion "it would not be desirable to re-introduce inoculation among the cooly population, as any disorganization of labour, either due to cholera itself or the inoculation, would probably be put down to the latter." The Inspector-General of Civil Hospitals, who has also been consulted, is strongly opposed to the proposals made by Mr. Haffkine, and does not advise the participation of Government in his measures for re-introducing the system of anti-cholera inoculation in this Province.

6. The Lieutenant-Governor has carefully considered the question, and, in view of the experience gained in the past and the adverse opinion now given by both the Inspector-General of Civil Hospitals and the Sanitary Commissioner, has decided not to appoint the staff proposed by Mr. Haffkine. This decision has already been communicated to Mr. Haffkine.

[No. 13.]

[FILE S. $\frac{2-S}{6}$ 31.]

488T.—San., dated Darjeeling, the 18th June 1908.

From—C. E. A. W. OLDHAM, Esq., I.C.S., Secretary to the Government of Bengal, Municipal Department,

To—The Secretary to the Indian Mining Association.

I AM directed to acknowledge the receipt of your letter No. 354R., dated the 15th May 1908, in which, in view of the recent outbreak of cholera in the Bengal Coal-fields, the Committee of the Indian Mining Association recommend that the suggestion made by Mr. W. M. Haffkine, that an exhaustive scientific investigation should be undertaken into the causes of the outbreak, should be given effect to by Government.

2. In reply, I am to say that enquiries have been made by this Government into the causes of the recent outbreak of cholera in the coal-fields. The Lieutenant-Governor has been advised that the outbreak must be attributed mainly to the want of proper and efficient systems of water-supply and conservancy. The attention of the Mining Association has already been drawn to this in my letter No. 1285San., dated the 18th December 1907. The Lieutenant-Governor awaits a report of the action taken by the Association on the suggestion made in paragraph 4 of that letter.

Gobt. of {1908} Bengal.

MUNICIPAL DEPT.

SANITATION.

File S. $\frac{2-S}{6}$

K.-W.—A Proga. for JUNE 1908, Nos. 1-13.

SUBJECT—

*Insanitary condition of the Jharria Coal-fields.**(Investigation into the causes of an outbreak of Cholera.)**Notes and Orders.*22 Telegram from M. Haffkine dated the 6th
May 1908.

M. HAFFKINE asks for the services of two medical officers, one clerk and two *chaprasis*, for cholera inoculation work in the coal-fields. The class of medical officers is not stated, but probably Assistant Surgeons are meant.

The Inspector-General of Civil Hospitals may be asked if he can spare the services of two Assistant Surgeons for his duty. The clerk and *chaprasis* can be entertained by M. Haffkine. A clerk on Rs. 20 and *chaprasis* on Rs. 8 each a month would perhaps suffice.

Financial Department will decide how the cost is to be met.

E. H. P.—7-5-1908.

SECRETARY—

There will be no difficulty about funds. The Inspector-General may be consulted.

S. N. MITRA—7-5-1908.

To Sanitary Commissioner for opinion please.

C. A. OLDHAM—7-5-1908.

SECRETARY—

Beyond a short paragraph in *Capital* last week, I have no knowledge of any demand for anti-cholera inoculations. If there is actually a fairly large demand for it (which I am somewhat doubtful about) two Assistant Surgeons may be sent to assist M. Haffkine in the work. There would be no need for these inoculations, if the coal-owners supplied properly filtered drinking-water. As long as any staff paid for by the Local Government is employed on this work, weekly returns of the inoculations done should be submitted to Government, so that the staff may be withdrawn as soon as the demand becomes small, otherwise the charge will become a permanent one.

F. C. CLARKSON—7-5-1908.

Will Inspector-General of Civil Hospitals please advise.

C. A. OLDHAM—7-5-1908.

SECRETARY—

I consider this a characteristic piece of audacity on M. Haffkine's part, who I notice has been busy advertising himself in various papers during the past week. I have no knowledge of any demand for anti-cholera inoculation at the coal-fields. He has either gone there on his own initiative, or at the request of some coal-owners. In either case, he has gone entirely out of his province in asking for Government Medical officers to do his work for him. As an individual he has no connection with this Province. If he has gone in response to the coal-owners, it is for them to provide him with the help he wants.

He should be informed that Government cannot place its medical officers under his orders. If he desires help for

cholera inoculation and will apply to the Principal of the Medical College, there are many qualified men on his list quite ready to accept employment. (Colonel Lukis tells me that the day previous to his coming here he deputed two College passed men to do duty at the coal-fields, and there are several others ready for work.)

Government has already several officers on Plague and other duties, and cannot spare men for any further special work at present.

Moreover, I foresee trouble brewing ahead in the future, if any countenance is given to M. Haffkine's demands.

R. MACRAE—7-5-1908.

SECRETARY.

S. N. MITRA—7-5-1908.

HIS HONOUR—

Please see the telegram from M. Haffkine and the above notes.

M. Haffkine is a great enthusiast in the matter of inoculation, both for plague and for cholera; and I cannot regard his request as the mere outcome of audacity. We must take a broader view of the matter.

M. Haffkine is not, however, serving under this Government at present. He has gone to the coal-fields apparently of his own motion—perhaps at the request of the local coal men—for the purpose of inoculating, without the sanction of, and without consulting, this Government. He has been impelled to do so no doubt by his ardent faith in inoculation, and with a view to putting to further test one of his most cherished beliefs—the efficacy of inoculation as a prophylactic against cholera.

I understand that medical opinion is not wholly agreed as to the degree of immunity conferred by inoculation in the case of cholera. Colonel Clarkson, who has worked with M. Haffkine on this very inoculation some ten years ago, informs me that a certain degree of immunity is given; but he regards the supply of pure drinking-water as of greater importance. He has already issued a leaflet on the subject of cholera prevention and treatment.

It may be contended that if Government knows inoculation to be of some value, we should encourage its being carried out; that we should in fact do anything in our power to mitigate the scourge.

We should not send a simple refusal, as if Government took no interest in the matter.

If a spontaneous demand for inoculation should arise on the part of the people, I think we should meet it, but under the supervision of our own officers.

M. Haffkine is apparently working in this matter as a private individual. At least India have not informed us that they have authorised him to undertake this work, or to ask assistance from us.

It is quite possible that he will move India in the matter, but they cannot but leave it to our discretion, even if he does.

The history of M. Haffkine's work at Bombay further lends colour to the apprehension expressed in the last paragraph of Colonel Macrae's note.

I propose to wire in reply:—

“Lieutenant-Governor regrets that Inspector-General of Civil Hospitals is unable to place any Government Medical officers under your orders as proposed, but suggests your applying to Principal, Medical College, for names of qualified passed students.”

I think at the same time the Sanitary Commissioner should be requested to institute enquiry at once, through the Deputy Sanitary Commissioner concerned, as to the actual

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Notes and Orders—continued.

nature and extent of the demand for inoculation, and then advise whether Government should take any further steps in the matter.

C. A. OLDHAM—8-5-1908.

I AGREE.

A. H. L. F[RASER].—8-5-1908.

WIRE at once.

Then put up draft to Sanitary Commissioner.

C. A. OLDHAM—8-5-1908.

CALCUTTA,

The 9th May 1908.

DEAR SIR,

I received your wire No. 99T.—Medl. of yesterday's date. I fear Europeans in the districts may not agree to be inoculated by a qualified passed student. I doubt also whether he would be successful in propagating the idea of preventive inoculation among the classes of natives who suffer from the disease.

The anti-cholera inoculation is, however, the only real help which it is possible to render in the present calamity.

Perhaps Medical officers may become available later on. Of course the matter is very urgent now,—the mortality in the districts is far greater than anything that is known.

Very truly yours,

W. M. HAFFKINE.

To C. E. A. W. OLDHAM, Esq., I.C.S.

M. HAFFKINE does not think passed students will answer for inoculation work, and he hopes Government Medical officers will be available later on.

This may be shown to the Inspector-General of Civil Hospitals.

E. H. P.—11-5-1908.

SECRETARY.

S. N. MITRA—11-5-1908.

AWAIT report from Sanitary Commissioner that has been called for.

C. A. OLDHAM—12-5-1908.

*PERHAPS Medical Department had better see Mr. Griffith's order No. 191 Medl., dated the 16th May 1908, demi-official dated the 23rd April 1908.

W. S. MILNE—14-5-1908.

THIS may be shown to the Sanitary Commissioner, and he may be asked to submit a full report on the state of things described by Mr. Griffiths.

E. H. P.—14-5-1908.

SECRETARY—As proposed.

S. N. MITRA—15-5-1908.

MAKE a copy of Mr. Griffith's letter and submit to me separately, and then I shall write to Sanitary Commissioner. Return General Department file.

C. A. OLDHAM—15-5-1908.

COPY of Mr. Griffiths' letter put up.
File returned to the General Department.

B. B. M.—16-5-1908.

E. H. P.—16-5-1908.

23 Telegram to M. Haffkine, No. 99T.—Medl., dated the 8th May 1908.

24 To Sanitary Commissioner No. 113T.—Medl., dated the 8th May 1908.

Demi-official from M. Haffkine dated the 9th May 1908.

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(बिहार राज्य अभिलेख)

Notes and Orders—continued.

Serial
No.

SECRETARY.

S. N. MITRA—16-5-1908.

Issue my letter to Sanitary Commissioner.

C. A. OLDHAM—16-5-1908.

THE Sanitary Commissioner may be consulted. He has already been asked in Government order No. 113T.—Medl., dated the 8th May 1908, to report what steps, if any, should be taken by Government to promote anti-cholera inoculation in the coal-fields; and in Government order No. 191T.—Medl., dated the 16th idem, what measures he considers ought to be taken for the supply of pure drinking-water in the coal-field area.

E. H. P.—21-5-1908.

SECRETARY—As proposed.

S. N. MITRA—22-5-1908.

To Sanitary Commissioner for favour of very early opinion.

C. A. OLDHAM—22-5-1908.

M. HAFKINE's advice is that an exhaustive scientific investigation should be undertaken into the causes of the outbreak of cholera in the Jharia Coal-fields. This proposal consists in employing two or three Bacteriologists with several qualified assistants to promptly examine some 500 samples of water collected by Managers and their assistants on an appointed day from every source of water-supply in a certain specified area, with a view to discover which are and which are not infected with cholera. Now, this sort of enquiry seems to me not only useless, but may lead to erroneous ideas as to the safety of certain water-supplies. Should certain of these waters be found infected with cholera, we are then no further advanced than we were before; and should certain of them be found free from the cholera germ, this might induce the belief that such were safe sources of drinking-water-supply; whereas no evidence could be possibly obtained that such waters are incapable of breeding the cholera germ, except by artificially infecting the water—a step which would be criminal.

There is very abundant evidence of a most conclusive character collected in all parts of India as well as in European countries that large epidemics of cholera are traced to polluted drinking-water, and no bacteriological investigation such as that proposed is needed to labour this point. Though insanitation in other matters may permit cholera infection to be conveyed to food by flies, etc., the cases from this cause are usually sporadic, and all our experience points to the fact that where water free from suspicion is solely used for drinking purposes, epidemics of cholera will not occur.

The present epidemic of cholera was foretold by this Department in 1906, if the water-supply was not taken in hand, and the warning has been justified. The scheme for a general water-supply for the whole of the coal-fields has fallen through as impracticable. It therefore remains for each Coal Company to provide its own filtered or boiled water-supply, either individually or in small combinations of mines. I believe, where a Coal Company has had the foresight to provide a filtered water-supply, there has been little or no cholera, and no disorganisation of labour; but no precautions can prevent ignorant coolies from drinking contaminated tank water, which in many cases they seem to prefer, and any new Act concerning village sanitation should deal with this point. The practical point is the provision of the best potable water available, either boiled or filtered, and the question whether such water can best be obtained from wells, river, mine water or protected tanks

To Sanitary Commissioner, Bengal,
No. 191T.—Medl., dated the 16th May
1908.

25

Letter from the Secretary, Indian Mining
Association, No. 354R., dated the 15th
May 1908.

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Notes and Orders—continued.

must be decided in each case locally, both as regards quality and continuity of supply.

F. C. CLARKSON—25-5-1908.

27 Letters from the Government of India,
& Home Department, Nos. 1225, dated the
28 21st May 1908 and 1252, dated the 25th
May 1908.

SUBMITTED for orders. Please also see two fresh letters received from the Government of India, with which they forward for information a copy of correspondence with M. Haffkine, on the subject of his visit to the Jharria Coal-fields and the anti-cholera inoculations performed by him there. M. Haffkine proposes to revive his system of inoculation against cholera, and asks for the following staff to assist him:—

- (1) a specially trained Bacteriologist;
- (2) an Inoculating officer;
- (3) a clerk; and
- (4) two servants.

The Government of India have no officer to spare for this work, and leave it to the Local Government to decide whether, in view of past experience of the system, the proposal should be adopted or not; the decision to be communicated to them. If the proposal is entertained, the Government of India consider that the condition laid down in their letter No. ^{4-Medl.}₄₇₁, dated the 29th March 1893, viz., that the operation should be performed only with the consent of the patient or that of his friends, should be adhered to.

Please see the papers put up which deal with the previous history of anti-cholera inoculation in this Province. The notes to Medical A Proceedings for June 1900, file ^{3-C}₁₀, Nos. 11—19, show the view that was taken of it at that time. The scheme for carrying on the operations on a general scale was abandoned under Sir John Woodburn's orders. The inoculation of emigrant coolies proceeding to Assam was continued till 1905, when it was found to have no material effect in obviating epidemics of cholera, and was abolished under the orders of the General Department, No. 763, dated the 13th February 1905.

The Inspector-General of Civil Hospitals is against countenancing M. Haffkine's scheme, (*vide* his note dated the 7th May 1908, on pages 1 and 2 of these notes), and the Sanitary Commissioner recommends attention to improving the local water-supply, rather than promoting inoculation. The latter officer has been asked in Government order No. 113T.—Medl., dated the 8th May 1908, to report what demand there is for inoculation, and to advise if Government should undertake it through the agency of its own officers. His reply is awaited.

For orders.

E. H. P.—29-5-1908.

SECRETARY.

S. N. MITRA—29-5-1908.

C. A. OLDHAM—29-5-1908.

Ask for immediate reply from Sanitary Commissioner as to the demand for inoculation.

A. H. L. F[ASER].—1-6-1908.

TAKEN up. See His Honour's order. Despatch my demi-official to Colonel Clarkson, keeping copy.

C. A. OLDHAM—1-6-1908.

Notes and Orders—continued.

D.-O. No. 8T.—P.

DARJEELING,
The 2nd June 1908.

MY DEAR CLARKSON,

His Honour has passed the following order on the file about M. Haffkine's application for special staff for inoculation work and bacteriological examination of waters :—

"Ask for immediate reply from the Sanitary Commissioner as to the demand for inoculation."

Will you please see my letter No. 113T., dated the 8th May 1908, and send an urgent wire to the Deputy Sanitary Commissioner, if you have not already received his report.

I am,

Yours sincerely,

C. A. OLDHAM.

To F. C. CLARKSON, Esq.,

Sanitary Commissioner, Bengal.

THE Sanitary Commissioner now submits a copy of a report by Captain Ross, Deputy Sanitary Commissioner, Bihar and Chota Nagpur Circle, in which the latter records his opinion after full enquiry that the natives distrust inoculation, and "any attempt to organize an inoculation campaign would result in a general stampede." Colonel Clarkson does not recommend any steps being taken to re-introduce cholera inoculation either generally or among the coolie population.

For orders.

E. H. P.—2-6-1908.

HIS HONOUR—

Please see Sanitary Commissioner's letter and its enclosure.

Also please see M. Haffkine's demi-official received by me to-day.

With His Honour's permission, I propose to wire at once to M. Haffkine that this Government has decided not to adopt his proposals, so as to save him the trouble of coming all the way up here. I shall then put up a draft to India for His Honour's approval.

C. A. OLDHAM—2-6-1908.

A. H. L. F[RASER].—2-6-1908.

I HAVE WIRED—

"Your letter received yesterday. This Government has decided not to appoint staff proposed by you."

Mr. Pascal will please take up the draft to India after consulting me.

C. A. OLDHAM—3-6-1908.

HIS HONOUR—Draft to India for approval.

C. A. OLDHAM—4-6-1908.

A. H. L. F[RASER].—4-6-1908.

No orders have yet been passed on the Association's letter No. 354R., dated the 15th May. The Sanitary Commissioner, who was consulted, did not recommend the suggested investigation. His opinion is recorded on pages 4 and 5 of these notes.

The Association may be informed that enquiries have been made* into the causes of the recent outbreak of cholera in the coal-fields, and that it has been attributed mainly to the want of proper systems of water-supply and conservancy. The attention of the Mining Association has already been drawn to this in

* Vide Captain Ross' letter No. 75 dated the 27th May 1908.

Demi-official to Sanitary Commissioner,
No. 8T.—P., dated the 1st June 1908.

From Sanitary Commissioner No. 530D.,
dated the 2nd June 1908.

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CALCUTTA,

The 31st May 1908.

DEAR SIR,

The Government of India have kindly informed me that the proposals concerning the carrying on of anti-cholera inoculation are being examined in consultation with the Government of Bengal, and have sent me a copy of this letter to your No. 1225, Home Department (Sanitary), of 21st instant.

I propose to come for a day or two to Darjeeling to confer on the subject with you and the Heads of the Medical and Sanitary Departments of Bengal, and lay before you certain facts concerning it.

I write, therefore, to request that, if possible, the consideration of the matter and His Honour the Lieutenant-Governor's decision be kindly delayed for a few days.

Yours sincerely,

W. M. HAFKINE.

The Hon'ble Mr. C. E. A. W. OLDHAM,

Secy. to Govt. of Bengal,

Municipal Dept.

To Government of India, Home Department, No. 366T.—San., dated the 4th June 1908.

Reminder from Secretary, Indian Mining Association, No. 411R., dated the 12th June 1908. (Not printed.)

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Notes and Orders—concluded.

Government order No. 1285San., dated the 18th
A. Proceedings for January 1908, December 1907, and Govern-
ment awaits a report of
File S. $\frac{28}{8}$, Nos. 1 to 22. the action taken by them
on the suggestion made
in paragraph 4 of that letter.
E. H. P.—16-6-1908.

SECRETARY—

As proposed. The Commissioner of Chota Nagpur has
already been asked in Government order No. 400T.—San.,
dated the 12th June 1908, to invite the attention of the
Association to the necessity for providing a good system of
water-supply.

S. N. MITRA—17-6-1908.

HIS HONOUR—As proposed.

C. A. OLDHAM—17-6-1908.

A. H. L. F[RASER].—17-6-1908.

31 To Secretary, Indian Mining Association,
No. 488T.—San., dated the 18th June
1908.

बिहार सरकार
मंत्रिमंडल सचिवालय विभाग
(बिहार राज्य अभिलेखागार निदेशालय)

REFERENCE TO FORMER CASES. ,

FILE S. $\frac{2-8}{6}$, A Progs. FOR JANUARY 1908, Nos. 1-22.

REFERENCE TO LATER CASES.

बिहार सरकार

मंत्रिमंडल सचिवालय विभाग
(बिहार राज्य अभिलेखागार निदेशालय)

KEEP-WITH.

Office notes (printed).