1925

KENYA

C.O. 41897/17

15 SEP 25

		Date
G. DENHAM	COMP. 137	18th August 1925.

Colonies

SMALLPOX, RE: OUTBREAK AT MOMBASA.

Fwds report on the outbreak. India is the most dangerous source of infection and measures as stated have been taken to restrict the landing of unvaccinated persons.

U.S. of S.

U/S. of S.

Secretary of State.

Previous Paper

MINUTES

Subsequent Paper

[illegible] 17-9-25

[illegible] T.O.

[illegible] Wt.17813/38 Cp. 140 50000 12-24 W & S Ltd.

Please supply ... duplicate ... of
dispatch (... dated ... 1925)

WD

Mr. Dobree

Duplicate supplied

[illegible]

Please circulate the duplicate despatch and invite the [illegible] remarks

WD
18.11.25

Extract from Minute of the 211th Meeting of the Colonial Veterinary Medical and Sanitary Committee held on the 14th November, 1925

The Committee had no remarks to offer and recommended that the remarks of the Professional members should be communicated to the Governor.

Mr Bottomley.

Draft for consideration herewith

JJ Dobree
24.11.25

COLONIAL ADVISORY MEDICAL AND SANITARY COMMITTEE.

Circulated for Remarks

KENYA.

SMALLPOX

Report on the recent outbreak of

REMARKS.

Dr. Rutherford.

Received. 23.9.25

Passed. 29.9.25

This is an excellent detailed report

Dr. Reid.

Received. 24.9.25

Passed. 25.9.25

A very good enthusiastic report. It would seem that all concerned - especially the Medical Officer - deserve much credit for the work accomplished. The recommendations made appear to be sound. I am glad to see that the [illegible] employed apparently with considerable success.

Sir William Prout.

Received. 26.9.25

Passed. 9.10.25

I am glad to note that effective action is to be taken with the registration of births in the [illegible]. The remarks on page 30 &c. should be supported.

This report illustrates the usual [illegible]. I shall [illegible] Dr. Horn.

Received. 10.10.25

Passed. 11.10.25

[illegible] the vaccination. I shall [illegible] [illegible] com of Dept. [illegible] very [illegible] expenditure.

The work was well organised & carried out and credit is due to all concerned. The recommendations in the report should be carefully carried out before sailing

Sir James Kingston Fowler.

Received. 23.10.25

Passed. 26.10.25

I agree

The report reflects great credit on [illegible] all concerned. It is very interesting to note the effect upon the native mind of the success which has attended the vaccination of natives.

Sir William Beveridge.

Received. 27.10.25

Passed. 30.10.25

The prevention measures were exceptionally well organised. Effort should be paid to the recommendations on page 34, without [illegible] any [illegible] further [illegible] may be [illegible].

Lt. Col. S. P. James.

Received. 4/11/25

Passed.

When circulation is completed please return to
The Clerk, C.A.M.S. Committee.

KENYA

No 137.

CONFIDENTIAL.

GOVERNMENT HOUSE,
NAIROBI,
KENYA. 1.9

41897

18th August, 1925.

Sir,

I have the honour to transmit for your information a report by Dr. H. S. de Boer, M.C., Medical Officer of Health Mombasa together with the covering memorandum of the Principal Medical Officer on the recent outbreak of bubonic plague at Mombasa.

2. The report discloses excellent work by the Medical Officer of Health and the Medical Officers who assisted in dealing with the outbreak both in Mombasa and the Coast generally and Dr. de Boer in particular and the Medical Department in general are to be congratulated on the prompt and effective measures which were taken to control the outbreak, the assistance rendered by Missionaries and the Press to which Dr. de Boer refers on page 10 of his report is very gratifying.

3. As regards the lessons to be learnt from this outbreak there is no doubt that the most dangerous source of infection is India and on the advice of my Executive Council I approved in March last the principle that action shall be taken where necessary under Sections 62 and 64 of the Public Health Ordinance 1921 to restrict the landing in this Colony and Protectorate of persons who have not been vaccinated - such action to be taken in each case on the recommendation of the Health Authorities by Proclamation by the Governor-in-Council. In this connection I would refer to correspondence ending with Mr. Churchill's Confidential despatch

1925/7/21

RIGHT HONOURABLE
LIEUTENANT COLONEL L.C.M.S.AMERY, P.C., M.P.,
SECRETARY OF STATE FOR THE COLONIES,
DOWNING STREET, LONDON S. W.

despatch of June 28th 1922.

4. I have for some time had under consideration the possibility of enforcing the registration of births in townships by the African population and anticipate that the necessary legal action towards this end will be published at an early date. The other measures suggested by Dr. de Boer in the last paragraphs of his report are at present under consideration.

5. It is gratifying to note that vaccinations were in no cases associated with serious results; this speaks highly for the care and organisation and consequent cleanliness with which the work was carried out.

I have the honour to be,

Sir,

Your most obedient, humble servant,

[signature]

ACTING GOVERNOR.

P. O. Box No. 541.
Telephone No. 420.

No.San.652/44.

MEDICAL DEPARTMENT.
HEAD OFFICES,
NAIROBI. 24th July, 1925

The Honourable,
The Acting Colonial Secretary,
NAIROBI.

Sir,

Re Sam./Mox. at Mombasa.

Ref. your No. S/M.1078/1/2 d. 18th March.

I have the honour to submit herewith a report on recent outbreak of Anthrax at Mombasa, and the steps taken to deal with it.

2. I would draw special attention to the Medical Officer of Health's Report, as I consider that he is to be congratulated upon the way in which he dealt with the epidemic and upon the energetic and general report which he has rendered.

3. I attach also a short note which has been prepared by the Senior Bacteriologist with regard to the steps which were taken at that institution in order to meet the increased demands for calf lymph, which were made as a result of the outbreak.

4. With regard to the outbreak in Mombasa the salient points which should be noted in the Medical Officer of Health's Report are as follows:-

(a) That Mombasa a town of between 40,000 and 50,000 inhabitants had for practical purposes been/

been free from Smallpox for about five years.

(b) That on the above account and on account of the changing nature of the population the vaccinal condition of the inhabitants was at the beginning of the year unsatisfactory.

(c) That the infection was probably introduced from India early in January.

(d) That within a week of the discovery of the first case of Smallpox on 23rd January over 5,000 persons had been vaccinated, that by the 25th of April over 59,752 persons had been vaccinated in the township, and that this Campaign was carried out without any opposition on the part of the population.

(e) That only one person was admitted to hospital as the result of ill effects following vaccination.

(f) That at the date of writing (4 July) Mombasa has been entirely free from Smallpox since the 6th of June.

(g) That adequate facilities for the treatment of cases under the supervision of trained European Nursing Sisters were provided for the members of all races.

5. As was to be expected the infection did not remain confined to Mombasa and a number of small outbreaks have occurred in other districts. As no general epidemic of Smallpox had occurred in the Colony since the epidemic of 1916 - 1918 and the vaccinal condition of the general native population was unsatisfactory the possibility that a serious epidemic might be occasioned gave rise to considerable anxiety. Such fortunately has not so far occurred and it may be of interest to give a short account of the steps which have been taken to deal with the outbreaks/

breaks that have come to notice and with the general [illegible] situation.

6. Outbreaks of Smallpox resulting from the Occurrence of the Disease in Mombasa.

I. A number of cases occurred in the Mainland Districts in the neighbourhood of Mombasa. A Medical Officer was sent on tour throughout these districts and [illegible] visited between 4th February and 25th [illegible]

II. An outbreak involving some 20 cases occurred in the Teita District. A Medical Officer was despatched, remained in the area for a month and vaccinated over 13,000 persons.

III. On the 13th of April a case of Smallpox was [illegible] in the South Nyeri District of Kikuyu Province and a few days later further cases came to notice. The occurrence of Smallpox in this area were likely to very considerable anxiety in the Province in question is very densely populated. An energetic vaccination campaign was at once commenced by the Medical Officer of the District Mr. R. A. W. Procter and the Assistant District Commissioner Mr. Marchant and by the end of May 60,284 vaccinations had been carried out. The number of cases was limited to 34 with 9 deaths and no case has occurred since the middle of May. Mr. Procter and Mr. Marchant are to be congratulated on the efficient and rapid manner in which they secured the vaccination of practically the entire population of a very thickly inhabited district.

IV. A small outbreak involving 19 cases occurred on ~~Lamu~~ Pate

Patta on Lamu Island on the Coast towards the end of March which was dealt with by the Asst. Surgeon Lamu.

7. At the date of writing the Colony would appear to be free from Smallpox, while in the Protectorate the only area where the infection remains is the thinly populated Kipini-Witu area some 25 miles south of Mombasa from which a few cases have recently been reported. The outbreak is being dealt with by a European Sanitary Officer who has been posted there to supervise the vaccination of the population.

8. Since the first outbreak of the disease in January vaccination campaigns have been carried out in all the townships of the country and a mobile epidemic section consisting of an European Overseer and 2 native vaccinators with a Ford chassis has been assembled with a view to carrying out a continuous campaign in the native reserves. The total number of vaccinations carried out from the beginning of January to the end of December was 226,776. The total number of cases of Smallpox which occurred in the country between the same dates was 77.

9. A marked fall in connection with the various outbreaks which have occurred has been the comparative ease with which it has been possible to carry out the vaccination of large numbers of persons both in townships and in the native reserves provided the operations were under the supervision of an European Officer and with the co-operation of the local Administration obtained. Frequently an average of over 1,000 vaccinations per day was maintained in any particular district or town for days on end. It is highly improbable that vaccination on this scale would have been possible more than a few years ago and it would appear that the comparative readiness to accept vaccination which the native/

124A

the native population has shewn is in considerable part due to the confidence in European methods of medicine which has resulted from the success which has attended the anti-yaws campaign of the past few years. Though Smallpox may be quiescent for the moment and nearly quarter of a million persons have been recently vaccinated the point to be remembered is that of a total population of two and a half millions some two and a quarter millions remain unprotected. To ensure the protection of this large number with the present staff is not feasible and the necessity for the increases which have been advised for the year 192[illegible] is obvious. A further point of importance is that since it has been proved that provided staff be available the native population can be made to attend for vaccination in very large numbers it will be necessary in future always to maintain a much larger supply of vaccine lymph ready for use than has been considered necessary in the past.

I have the honour to be,

Sir,

Your obedient servant,

PRINCIPAL MEDICAL OFFICER.

REPORT ON THE LABORATORY OUTPUT OF CALF LYMPH DURING THE SMALLPOX EPIDEMIC Jan. - April 1925.

---oo---

The average number of doses of calf lymph supplied to the various stations from 1921 to 1924 had been 9,500 per month. To maintain this supply and a bi-monthly stock of 100,000 doses in reserve, ten calves per month were vaccinated on the average.

The calf lymph buildings were two corrugated iron sheds, the first being used for newly vaccinated vaccination, and for those already vaccinated and awaiting return to the native reserve. The second shed contained three rooms, a preparation room, a vaccinating room, and a room containing four stalls for vaccinated calves. There were also two stalls in the first shed for use in emergencies.

The staff consisted of one Indian Laboratory Assistant (Lt. Poma) who did this work in addition to superintending the culture media. One boy cleaned the sheds and fed the calves, and three other boys who helped when required in addition to their other duties. The preparation of lymph was controlled and supervised by one of the Bacteriologists. The maximum possible output of calf lymph from these buildings and with this staff was 60,000 doses per month.

Following the outbreak of smallpox in Mombasa, there was a greatly increased demand for lymph from every station in the country. Further outbreaks occurred in the Voi district in March, and in Fort Hall district

in

in April.

The total number of doses supplied to all stations during the four months January to April 1925 has been 260,000, or 65,000 per month, or seven times the normal output.

Nembaca district received 107,150 doses from January to April, 44,650 being supplied between 26th January and 10th March. The district was supplied with 25,000 between 10th March and 4th April. Fort Hall district was supplied with 49,000 doses between 12th April and 6th May.

In all 192,700 doses were supplied to the epidemic centres, and 79,250 doses to the rest of the country in four months.

To maintain this supply 350,000 doses of vaccine lymph have been prepared from January to April 6th. One hundred calves have been vaccinated, with an average yield of 3,500 doses per calf. The present reserve stock is 50,000 doses. The reserve stock in January was 32,820 doses. There was a small [illegible] as the supply of calves was very limited [illegible] end of the year 1924. The Chief Sanitation Officer has asked for a supply of 30,000 doses per week to be guaranteed, in addition to the amount issued as a routine to outstations in non-epidemic areas.

The following steps have been taken to maintain this supply.

1. CALVES.

A greatly increased number of calves was required, application was made to the District Commissioner Kyambu and the necessary supply has arrived regularly. In

this

this connection Major Orr's help has been invaluable and without his assistance the supply of calf lymph could not have been maintained.

2. BUILDINGS.

Additional accommodation was required. With the existing buildings it was possible to keep pace with the demands of epidemic and to increase the supply to the other stations. It was not possible to maintain a reserve supply, and in the event of a large outbreak that calf lymph could not have been produced. A calf shelter which accommodates forty calves has been erected, this is used for waiting calves and those already vaccinated. The shed previously used for this purpose has been converted into a shed for vaccinated calves, and there are now stalls for 14 calves. The maximum output of calf lymph per month has now increased from 90,000 doses to 175,000 doses, and it is hoped that in a few months it will be possible to maintain a reserve supply of 500,000 doses, which in the light of the experience gained from this epidemic is the minimum reserve to be kept for emergencies.

3. STAFF.

The staff employed has had to be increased owing to :-

(1). The larger number of calves to be cared for and vaccinated.

(2). Many orders for lymph arrived daily, this meant that packing and despatching went on continuously instead of lymph being sent out on regular days, as previously.

(3) The

(3). The number of capillary tubes to be sealed was greatly increased. A Bacteriologist and the [illegible] Assistant had to devote practically all [illegible] to sealing tubes. [illegible] culture media required had in most cases to be refused. The other work in the laboratory also suffered, owing to lack of supervision and lack of staff, as frequently every available boy spent the greater part of the day sealing capillary tubes. Three new boys have been engaged, and since the structure of the new shed the Indian Laboratory Assistant has been his whole time preparing [illegible]

[signature]

Junior Bacteriologist

SMALL POX OUTBREAK AT MOMBASA - 1925.

R E P O R T

B Y

MEDICAL OFFICER OF HEALTH.

MOMBASA, 28:5:25.

Box No. 74.
No. 15.

No. 7/4/187

HEALTH OFFICER, 193
M O M B A S A.
28th May, 1925.

The Chief Secretary,
Nairobi.

Sir,

SMALL-POX AT MOMBASA

Reference your No. Gen. 652/98 of 21/5/25 and Secretariat No. S/A. 1928/1/2 of 28/3/25. In forwarding the attached report I regret I am not able yet to state that Mombasa is clear of small-pox.

The last case known to have developed the disease on the Island was discovered on the 17th inst., a case developing within the township, but on the Mainland at Freretown was admitted on the 24th inst.

The chart attached is completed only up to the 20th April and takes note of all cases admitted into hospital up to that date.

A more complete chart will be forwarded at a later date.

I have the honour to be,
Sir,
Your obedient servant,

MEDICAL OFFICER OF HEALTH.
M O M B A S A.

HISTORY AND DETAILS OF AN EPIDEMIC OF SMALL-POX IN MOMBASA

PAST HISTORY OF SMALL-POX IN MOMBASA

In 1904, twenty one years ago, the first Annual Health Report was produced in Mombasa. In 1904 up to 1908 no small-pox is known as occurring on the Island.

In the 1908 Report twelve cases are recorded and it is stated 2,168 vaccinations were done. Although this is the first small-pox in Mombasa recorded on Health Office files, there is no doubt that small-pox was known in the Island previous to this, and from information collected from Swahili and Arab residents it is clear that serious epidemics occurred from time to time claiming numbers of deaths and affecting great part of the unprotected population.

There is no evidence that vaccination with calf lymph was performed here before the arrival of the British, but inoculation from mild cases was resorted to and was evidently fairly popular.

No cases of small-pox were reported in 1910 and 1911, but in 1912 a serious outbreak was recorded 295 cases being notified. The outbreak lasted almost all through the year and 33,150 vaccinations are reported as having been done, native vaccinators being employed to do the vaccinations. The disease that year was first discovered in March and it was presumed that the infection had been imported from Arabia. In March over 4,000 vaccinations were done, but the disease continued to smoulder, a few cases being reported each month and becoming epidemic in August and September when 71 and 126 cases respectively are recorded.

That case was removed to isolation and was followed by no further cases.

Last year was remarkable because not only did Mombasa remain free, but as far as was known no small-pox was reported anywhere in the districts around.

II. THE VACCINAL CONDITION OF THE POPULATION PRIOR TO THE OUTBREAK

The records given above show that there have been large vaccination campaigns in Mombasa in the past, especially in 1916 when it is reported 76,114 vaccinations were done in the Island and the districts around, and again in 1919 and 1920 when 12,414 and 27,192 vaccinations were reported performed respectively.

In spite of all these campaigns there existed at the time of the present outbreak a very large number of people in Mombasa unprotected, due chiefly to the following reasons:-

(1) There is no compulsory Birth Registration and hence no vaccination of Infants carried out.

(2) The population is in the main lethargic and will not inconvenience themselves or their children by bringing them for vaccination unless there is a scare of small-pox.

(3) A large section of the population in Mombasa is a changing one, and consists of numbers of Africans from all over the country, who come here in search of work, and after a year or longer return to their Reserves, a few, however, remaining permanently. A vaccination campaign at any time catches the natives in the town at that time, but needs to be repeated wholeheartedly the next year if the population is to be maintained protected.

III. THE PRESENT EPIDEMIC

(A) First Case Found

On the evening of the 23rd January, an African native, with a marked papular rash was brought to the notice of Assistant Surgeon Nair of this Office.

Mr. Nair diagnosed the case as small-pox, and had the boy removed to the Infect a Deseases Hospital, reporting action taken to me immediately it was co ed. I proceeded to Infectious Diseases Hosp al at once and confirmed the diagnosis, case although such a mild in Character and distribution, Invited Dr. Massey, Senior Medical Officer, and confirmed our opinion.

The patient a Kikuyu adult g e the following history.-

He was a servant to Gul. Hussen Jemal, an Indian belonging to the Khoja Ismaili Communi and lived with his master's family in a building at the Ndia Kuu end of Commercial Street.

He stated that on the 19th as he had been feeling very ill for a day, he asked and obtained permission to leave his master's house and go out to live with a friend of His, also a Kikuyu, at the Rest House of the Indian Lohana Community off Kakupa Road. While living with his friend his condition got worse and on the 20th he noticed a fine rash on his body, which steadily became more marked. He was nursed in his illness while lying up at the Rest House by his friend and two other Africans, but as his condition was, if anything growing worse, he returned on the 23rd with his friend to his master's house and reported; his master at once sending word to Assistant Surgeon Nair. He had never been vaccinated.

The night being well advanced no further action was taken, but the next morning accompanied by the Assistant Surgeon, I visited the premises in Commercial Street, which is one of the most congested portions of the densely populated Old Town. The boy's master appeared just as mystified as ourselves where the infection had come from, and could give us no information bearing on the question. He and his family were vaccinated and ordered to report daily at the Health Office. The building in which the case occurred was one of a big block of buildings, and was occupied by several families. A room to room search for other cases was carried out, but no evidence of any infection could be found. All residents in the building were vaccinated.

The Lohana Rest House was next investigated, but here as expected no evidence bearing on the source of the infection could be obtained. The three Africans mentioned before were the only people who appeared to live on these premises, and these were vaccinated and removed to the Infectious Diseases Hospital and kept under observation there; it is interesting to note that none of these boys developed small-pox, although two of them were presumably unprotected before being vaccinated.

(B) FURTHER CASES AND EVIDENCE THAT THE DISEASE WAS ALREADY WELL ESTABLISHED IN MOMBASA.

The second case of small-pox was discovered on the 27th., this time again in an African, a native of the Rabai District, who was found after sunset wandering around the congested area in front of the Khoja Ismailia Mosque. This boy too was in the papular stage and was judged to be in about the fifth day of the disease. He stated that he had only left Rabai on the 25th., walking to Mazeras and coming from there to Mombasa by train and arriving here at night. He further stated that he only began to feel ill on the 25th., the rash appearing the

The next cases were discovered on the 30th., and these, which will be detailed, gave us positive proof that the disease was well established in the Town and made us suspect that the outbreak was Indian in origin, and that the first case must have occurred or came into the Township very early in January.

Before a body can be buried in Mombasa it is necessary for the relatives to obtain a permit from the Police, who issue such only on the receipt of a death certificate issued by a Medical Practicioner, if no Medical Practicioner has seen or treated the case prior to death, a death certificate is usually asked for from Civil Office, and is issued by the Assistant Surgeon or Surgeon after the body has been inspected. A request received on the 30th. for a death certificate as above, revealed to my Assistant Surgeon that an Indian child had died of haemorrhagic small-pox. This case was in a house not very far removed from the house from which the first African had come. Questions asked from the parents of this first Indian case revealed that it was known that further cases of small-pox existed amongst Indians, and although no definite information as to where these cases were, could be obtained, after a search through a number of houses three further cases were discovered. The first of these cases was an Indian child eight years of age, who when found was in the early pustular stage i.e. about the eighth day of the disease. This case was a mild one as were the other two found, and in none of the cases could the source of infection be traced and not one had been out of the Island recently; two of the cases were found in buildings not far removed from the house of the first case, ~~it will be remembered~~, but the third was in the Kibokoni area a little removed, but mentioned by our third African case. The second of these cases an Indian girl of twelve was in the vesicular stage or about the

sixth day of the disease, while the third an Indian boy of five years, was well advanced in thedrying up stage, and in him the disease could not have been less than fourteen days old.

It was evident that not any one of these cases discovered could have given rise to the general infection and therefore it was presumed that earlier cases existed - and as it was that the last case found developed the disease about the 16th of January, the infection here must have occurred somewhere between the 2nd and 4th of that month. Later a case developing about that date was discovered.

From the 30th of January a short break occurred which lasted until the 7th of February, when the two-and-a-half year old brother of the first Indian case found dead was admitted. Vaccination in this case had been too late to save the child developing small-pox. The attack, however, was of a mild character.

On the 8th of February a further contact in the Infectious Diseases Hospital, the two-and-a-half year old brother of the Indian girl of twelve developing a very mild attack. This case had only twelve papules. Vaccination in this case was early enough to make the attack mild, but too late to prevent it.

On the 8th also was fetched in a case of small-pox in a contact of the second case amongst the Indians. This family had been allowed to remain at their house under surveillance, the original case having been removed to the Infectious Diseases Hospital. The family, however, broke their surveillance and departed to the Mainland, but their departure being discovered they were brought back the next morning by car. This case too was mild in type. A further contact of case No.I. of the Indians was moved across to the wards on the 9th., this case too proving very mild, vaccination about the sixth day of incubation not protecting altogether.

On the 10th February our first definite case from the Mainland was received. This was in an African and was brought in from Bungu, a settlement four miles from Likoni Ferry, the disease being in the fifth or sixth day. Here history of daily contact with Mombasa Island was obtained.

On the same day a further Indian child was admitted in about the fifth day of disease from a different section of the Old Stone Town.

On the 11th further evidence, that the problem before us was to be aggravated by concealment of cases by certain sections of the population, was forthcoming in the discovery of nine Indian cases and one African in a house amongst the Shambaa at Makupa. This house was evidently being used as a hospital with very poor effort at isolation. These cases similar to the first Indian case were only discovered on a death certificate becoming necessary following the death from haemorrhagic small-pox of an Indian child.

After the 11th February cases were discovered almost daily, the total number of cases admitted during the month to the Infectious Diseases Hospital being fifty-seven Asiatics and Africans and one European.

(C) DISCOVERY OF THE SOURCE OF THE INFECTION.

It was not until the 24th February that it was possible to find the cases which it is considered started our epidemic of small-pox. On this day a notice on anonymous information received at the Office, a search was made in a religious Rest House situated off Old Kilindini Road, and here were discovered four cases of small-pox in Indians and one in an African. The Indian cases were all convalescent or nearly so, the African was in the papular stage. The history obtained from the parents of one of the Indian patients was as follows:-

The Parents with their children came off the B.I.S.N.Co's S.S. "Karapara" on the 2nd of January. The family were fit and well on landing, but a on that same evening one child aged one-and-a-half years, developed a fever, the family put up in a religious Rest House attached to a mosque at the India Row end of Commercial Street. Here the infant developed a rash and the family remained until the night following the search made in the opposite block of buildings by the Assistant Surgeon and myself on the discovery of the first African case. During their stay in the religious house another child had developed the disease, and the whole family including now two cases of small-pox had departed on the 24th January to the Rest House off Old Kilindini Road. The other two Indian cases found were still later developments in other families in the same Community. The African case was in a woman living in the garden attached to the Rest House.

The earliest case found previous to these cases viz; that of the Indian child infected between the 2nd and 4th of January was infected presumably from this case as also the first African case found, which must have been infected about the 7th of the same month.

The proof that our presumption is correct is that the first Indian case came from the next house and the African from the house opposite the first Rest House occupied.

Accepting this case from the S.S. "Karapara" as being the first case, and there is every reason to believe it was, the infection was imported into the Island from Bombay. That this has not happened before is surprising as small-pox is endemic in Bombay and the incubation period of the disease is longer than the time taken by ships in doing the journey from Bombay to Mombasa.

Further evidence of the constant danger that exists in Mombasa of small-pox being introduced unsuspectedly from Bombay was available on the 24th when a case of small-pox in about the 7th or 8th day of the disease was discovered in an Indian child, one-and-nine-twelfths years of age, who had only come off the S.S. "Karagola" from Bombay on the 14th. The disease had developed two days after arrival here.

It might with some justification be presumed that even if Mombasa had been fortunate enough to have escaped the case from the "Karapara" this case from the Karagola" might easily have started an epidemic.

(D) THE CASE OF SMALL-POX IN AN EUROPEAN

The only European case that has occurred during the epidemic up to date was in an employee of Messrs. Paulings Ltd., who was transferred from the European Hospital where he had been admitted on the 24th complaining of fever. The patient had only been vaccinated two days before and no source of infection could be proved. The case was haemorrhagic in type and ended fatally.

(E) THE CONTINUATION OF THE EPIDEMIC

The appendix giving details of cases will show how the cases continued to come in, the numbers of infections occurring, dropping considerably as the vaccination campaign developed and the general population became protected.

The continuance of cases right into May is proof positive that,-

(1) The whole population is not yet vaccinated. Individuals having avoided vaccination, but paying the penalty by contracting the disease.

(2) That our efforts to maintain a vaccinated population is negatived by the African population of the time being a continuously changing one. A considerable unprotected population arrive daily from the various native Reserves in the country.

Total number of cases admitted to the I.D.Hospital in

January 6

February 58

March 46

April 18

May 1st to 15th 5

Total number of cases discovered after death

January 1

February 2

March 1

April 1

May 1st to 15th Nil

Total cases in Epidemic up to May 15th

N.B.

On the 23rd of May when this report is being completed, no cases have been reported for a week and it would appear that the epidemic is fast dying out.

IV. THE METHODS OF CONTROL AND TREATMENT ADOPTED

(A) Campaign of Vaccination

On the discovery of the first case, this office realised at once the danger that existed of an epidemic of some magnitude occurring unless immediate action was taken to protect the general population.

The first case, it will be remembered, had come from the much overcrowded Stone Town, where families live in the closest contiguity, and most buildings are of two or more storie[illegible] each serving as residence for several families. Conditions are such in this area, that any infectious disease is easily spread.

The history given by the [illegible] showed that he had been moving about the Town in an infectious state, and therefore the infection could not be considered limited to only one area.

It was not known for many days who the disease originated, and although on general principles I suspected [illegible] nothing could be found at the time to confirm our opinion.

The discovery of the second and third cases and the stories told by them further confused us, and hampered considerably for a time our efforts to deal with the outbreak. The general mentality of the people this office has to compete with in attending to public health matters will be appreciated from these incidents as also the fact that no public health conscience exists amongst such as indicated by the wilful concealment of cases. The above is not an indictment of the whole population, but of certain sections of it, who by their ignorance and habits constitute a grave danger to the public health.

On the discovery of small-pox in the Town it was decided that besides attempting to protect the general population in the vicinity of the infected area, it was necessary to take all steps to insure as little

interferance as possible with the working of the Port on which the life of the Town practically depends. It was considered this last could best be insured by enforcing the vaccination of all working in connection with it.

Under ordinary conditions, this Office maintains a stock supply of five hundred doses of fresh lymph from the Nairobi Bacteriological Laboratory. Two hundred and fifty doses of fresh lymph are received weekly, and the remaining lymph from the fortnight old supply destroyed or returned. On the 24th day of January, the Five h[illegible] doses were available, and on the next day our stock was increased by the arrival of a further two hundred and fifty doses. On the 24th a telegram was despatched addressed "LABORATORY NAIROBI" for increased supplies of lymph, but unfortunately the telegrams were delivered to the Veterinary Laboratory, Kabete, and although further telegrams were sent they met with the same fate and it was four days before any telegrams from here reached the Bacteriological Laboratory, and twenty four hours after that before lymph in quantity began to reach us.

The Vaccination Campaign actually began by the protection of people, who were known to have been in contact with the first case.

This completed, the whole Staff of the Office and Infectious Hospital were instructed in the technique of vaccination, this being done by practising on each other ensuring at the same time the protection of all employed, who were likely to come into contact with the disease.

The population of Mombasa is officially estimated at over 41,000, but generally this is considered a conservative estimate, and it is thought that the figure is nearer 50,000.

The Vaccination Campaign started out with the intention of vaccinating this population as rapidly as possible.

The Staff having been trained, the next step in our campaign was to get the people to submit themselves to

Vaccination. It must be remembered that the population is mainly Oriental or African, difficult to move and with fatalistic views on disease generally.

As a first step in getting at the people, the Heads of every Asiatic and Arab Community were approached by the Medical Officer of Health personally and urged to induce their people to have themselves protected. Vaccination was offered at any time and place that could be arranged for, provided people were collected in sufficient numbers.

Missionaries were approached and asked to help by recommending vaccination to their congregations.

Principals and School-Teachers were seen, and offers of vaccination were made to them for children attending their schools.

The various Government Departments e.g. Police, Prison, Public Works Department etc., employing large staffs were written to and vaccination offered.

The African Wharfage Co., The East African Lighterage Co., and Messrs. Paulings Ltd., all of whom employ large staffs were approached and their assistance requested in our campaign.

Last but not least, Mr. Delvin, the Editor of the Local Paper (The Mombasa Times) was approached and invited to aid us.

The pressing demands for vaccination during the next few days, more than repaid this Department for the time expended, for one and all asked assisted to their utmost, and soon our difficulties were firstly, with our limited Staff to cope with the demands made, and secondly, to keep ourselves provided through Nairobi with a sufficient supply of lymph.

At the biginning of the campaign our supplies often ran out and vaccinations arranged for had to be postponed. This was unfortunate, but could not be avoided

was the output of lymph from the Laboratory was limited.

Vaccination parties sent out to work always consisted of an European or the Assistant Surgeon and two Africans. Sanitary Inspectors were taken temporarily off all possible routine work, and the Health Visitor was employed almost entirely in the vaccinating of women and children.

The G.M.C. European Hospital offered to deal with Europeans - this offer was accepted thankfully.

As the demands for vaccination from organised bodies and institutions decreased, vaccinating teams took up stands in suitable centres and induced all in market centres, the neighbourhood of factories, [illegible] to be vaccinated. [illegible] were very popular and for some days [illegible] with a [illegible] rushing high, or anywhere falling, house to house vaccination was attempted, but was found to be unproductive of results.

At the Port area in vaccinating all labour working ships or around the docks, we were assisted by the Lighterage and Wharfage Co., who refused to employ as casual labour any person not protected, and also by the Captains of ships in the harbour, who refused to allow any [illegible] vaccinated from on board their vessels. In order that working should be interfered with as little as possible, all labour was inspected prior to being taken on both at morning and night shifts, and all unprotected labour found was vaccinated on the spot. For working after dark The African Wharfage Co., kindly provided lights.

On the 11th February, Dr. W.H. Fisher arrived from Nairobi to assist this Office in carrying out a vaccination campaign on the Mainland. This up to then had only been attempted in the portions of the Mainland in the immediate vicinity of Mombasa by Sanitary Inspectors, who went out for a day into areas

from which small-pox was reported. The arrival of Dr. Fisher made a systematic campaign possible, and working with the Administration and with Staff and lymph supplied from here, he dealt with the following districts:-

Pungu, Changanwe, Meritini, Mazeras, Rabai, Kaloleni, Tiliri, Thakaungu and Kwale.

By the 19th of February after nearly three-and-a-half weeks vaccination, it was appreciated that still about one-half of the population remained unprotected and that the disease had now taken a fair hold in the Town, and that if unprotracted a large epidemic was to be prevented action compelling the remainder of the population to be vaccinated was necessary.

After consultation with the Resident Commissioner, it was decided to take such action under para. 2 of section 106 of the Public Health Ordinance 1921, which states that - "in the event of the existence or threatened outbreak of small-pox in any area the Local Authority may require all persons within an area defined to attend at certain centres according to instructions issued and to undergo inspection vaccination or re-vaccination as circumstances may require".

Notices were published in the Local Press both in English and Gujerati, and the Town-crier was sent round shouting out the order in Swahili. The order which was signed by both the Resident Commissioner and Medical Officer of Health, who constitute the Local Authority, demanded that all not vaccinated since the 23rd of January should present themselves at the Health Office between the dates 21st to 24th February, at the hours 8 a.m. to 12 noon and 2 p.m. to 4 p.m. The penalties for failing to carry out the order were pointed out viz: A fine not exceeding twenty five pounds and three pounds for each day of continuance of default.

When the notice was published ten thousand 6 doses of lymph were available at this Office, and it was considered that this would be sufficient. It was soon evident, however, that while members of the general population were apparently not afraid of contracting small-pox, they certainly did not intend to run the risk of being fined. The number vaccinated at the office during the four days mentioned in the Order was 9,468, while a further 2,767 were done on the morning of the 25th, when the lymph ran out, the Office had to be closed down for vaccination until the next morning, when fortunately a further supply reached us from Nairobi. It is interesting to note that on the 23rd, 4,321 vaccinations were done. It must be remembered in considering these figures and all other figures given - that they only record vaccinations done and do not show the numbers of persons seen on the various occasions and exempted as having been recently protected or as showing definite marks of previous small-pox. A conservative estimate of the people exempted would be twenty per-cent of the total vaccinated.

During the period of compulsory vaccination numerous requests were received from various Asiatic Communities for vaccination to be provided at various Mosques and Religious Institutions, these requests could not all be attended to in the time, but were dealt with as soon as pressure at the Office grew less.

By the 11th March, 43,169 vaccinations had been performed in the Town and allowing another 10,000 for exemptions and vaccinations done by various Medical Practicioners of which no record was received, it was considered that the population was well protected and that now no fear of an epidemic existed.

The Sanitary Inspectors were after this, taken off vaccinations and allowed to return to their ordinary duties, which in all districts had accumulated.

Vaccination, however

Vaccinating, however, was not allowed to drop altogether, and the Assistant Surgeon with his team was sent to various districts carrying out vaccinations as required, and making house to house visits.

The continuance of the epidemic into May is very disappointing after our efforts at vaccination, but the majority of the cases now occurring amongst people who have come in to the Island since our big campaign, and have not been to the trouble of getting themselves protected.

From the 23rd April, we attempted to stop people coming on to the Island unprotected by placing teams of African vaccinators at each of the ferries. It was not possible to provide an European for each team, but the Sanitary Overseer was put in charge of the whole with instructions to visit each team at least twice daily. During the three weeks these teams have been working, and up to the time of writing 3,358, 1,742 and 2,013 vaccinations have been performed respectively, giving some indication of the numbers of people coming daily to the Island. At the same time as Ferries were obstructed European Sanitary Inspectors were instructed to endeavour to carry out the vaccination of all unprotected people arriving by train, meeting whenever possible the trains at Kilindini and Mombasa Stations. Unfortunately with the Staff available it was not found possible to undertake the meeting of all passenger trains. In all, up to date of writing 12/5/25, fifty five thousand, nine hundred and ninety eight vaccinations and re-vaccinations have been done within the Township, and twenty eight thousand, five hundred and twenty four in the districts around.

TECHNIQUE OF VACCINATIONS.

All vaccinations by this Department were done with either an ordinary straight surgical needle or straight packing needle. The needles being sterilized between each vaccination by being first dipped in methylated spirit and then flamed at a spirit lamp maintained alight. Arms were all cleaned before being operated on with either soap and water, a nail brush being used, or with spirit.

As a general rule three vaccination marks were made on each person dealt with four straight parallel cuts each about ½" long going to make one mark. In doing mass vaccinations it was found most advisable to have one Orderly cleaning arms and another assisting in the sterilizing of needles getting ready the lymph and putting the lymph on as the scratches were made.

Six to twelve needles were always kept in use by any one team, the person vaccinating picking up a sterile needle for each case and dropping it into a special receptacle as soon as finished with. The Orderly in charge was responsible for the sterilizing of used needles and theplacing of them ready for use.

1494

RESULTS OF VACCINATION.

In a campaign conducted on such a large scale, it was not possible to collect figures of results. While in the majority of cases in which unprotected people were vaccinated the results were good, it is unfortunately true that there were a few failures. A few individuals are known, who failed to take on the first vaccination, but gave good results on re-vaccination. A study of the details of cases shown in the Appendix will also show that small-pox occurred in a certain number of people, who were vaccinated, but on whom the operation failed to give a positive result.

No definite reason can be offered for individual failures, but one or all of the following were possibly factors in the various cases.

(1) The deliberate rubbing off or washing out of the lymph from the scratches made. This I personally have seen attempted by all classes - on one occasion by an European.

(2) Accidental rubbing off before lymph has dried or been absorbed.

(3) Immediate exposure to direct sunlight.

(4) The vaccination of an arm cleansed by spirit before the spirit has quite dried off. This unfortunately does happen when mass vaccinations are being done and a long queue is waiting.

(5) Non-potent lymph in tubes used due to

(a) Non-potent lymph arriving.
(b) Exposure to the sun of Mombasa while being used.

It is interesting to be able to record that the vaccinations performed were in no cases associated with serious results. The S.M.O. Native Civil Hospital reports that about twenty Africans and Indians attended as out-patients to have their vaccination marks dressed and that in most of these definite histories of self contamination were obtained. Only one person was admitted

into hospital as an in-patient with a septic arm following vaccination and he cleared up rapidly.

In several cases this Office was informed that the general re-action following the development of the pustules was marked and associated with a rise in temperature. A few Europeans were admitted into Hospital but in all these cases the vaccinations had evidently set alight a latent Malaria.

In two cases brought to my notice a general urticaria like rash appeared following the vaccination. Both these rashes cleared up rapidly.

No case of general vaccinia was seen.

A study of the details of cases of small-pox admitted will show that no case occurred amongst people protected by recent vaccination, although quite a considerable number of cases occurred in people vaccinated during the incubation period.

The following figures of small-pox occurring in people vaccinated during the incubation period are interesting.

ed stage of ion when ted	No. of cases occurring	No. of cases very mild.	No. of cases severe	No. of cases confluent	Deaths	No. of Deaths to cases
2nd Day	I.	I.	-	-	-	Nil
3rd "	I.	I.	-	-	-	Nil
4th "	3.	I.	-	2	-	Nil
5th "	4.	I.	2.	I.	I.	25%
6th "	5.	I.	2.	2.	-	Nil
7th "	II.	-	8.	3.	2.	18%
8th "	6.	-	5.	I.	-	Nil
9th "	4.	-	3.	I.	I.	25%
10th "	-	-	-	-	-	-
11th "	2.	-	I.	I.	-	Nil
12th "	2.	-	I.	I.	I.	50%
	39	5	22	I2	5	I3%

During the period 23rd January to 21st March seventy two cases of small-pox in people unprotected by recent vaccination were admitted, and seventeen deaths occurred amongst these i.e. the percentage of deaths to cases in unprotected people was 24% against 13% in cases protected in the incubation period, but developing small-pox.

It is unfortunate that no figures are available of the number of people protected in the incubation period and not developing small-pox at all. There has been evidence available that a certain number of mild cases of small-pox amongst children occurring during the vaccination campaign was never reported to us. A couple of such cases were discovered by the Health Sister soon after convalescence, but are not included in the above figures.

Before closing this chapter on the vaccination campaign, I should like to place on record in this report my appreciation of the great assistance rendered by Mr. Ling Senior Sanitary Inspector and his team of Sanitary Inspectors, Miss Reardon Nursing Sister, Mr. Nair Assistant Surgeon, and all the African Staff, who worked untiringly in making it a success.

(B) HOSPITAL ACCOMMODATION AND TREATMENT 151

Administration of Small-pox Hospital

All cases of small-pox discovered in the Town were removed to the Infectious Diseases Hospital, the buildings existing there at the time of the outbreak being

(1) Three permanent general wards, each capable of taking eight beds, but provided with broad verandahs that could be used for patients if required in any but monsoony weather.

(2) Three temporary blocks built of mud and coral chips, one with a tiled roof, and the others with makuti or thatched roofs.

Each of these blocks consisted of a series of rooms, the one roofed with tiles of four rooms, each intended for one patient, but capable of being used for two. The other blocks could each house about fifteen patients.

(3) There were twelve tents available each capable of taking two patients.

(4) An European block with accommodation for about three.

When the first case of small-pox was admitted the various blocks in the hospital were occupied by cases of the following:- Tuberculosis, Dysentery, Typhoid Fever, Cerebro-spinal Fever and Mumps, there being in all 24 patients in hospital.

The first cases admitted were placed in the tiled temporary block and contacts, as brought in, in tents pitched in that portion of the hospital compound.

As further cases began to arrive, and it was apparent that an epidemic was to be expected, steps were taken to discharge all cases of other diseases or to transfer them to the Native Civil Hospital; Dr. Massey S.M.O. assisting us by arranging for their accommodation there, and further, taking

responsibility for diseases other than small-pox occurring in the Town. 132

Staff at the I.D.H. at the biginning of the Epidemic

Ward Master	- Capt. Whittonbury.
Dressers	4.
Cook	I.
Sweepers	I.
Water Carriers	I.
Guards (Askaris)	2.
Messenger Boy	I.

While the above staff was sufficient for the ordinary routine work of the hospital, when on the average there were never more than four to five patients at all seriously ill, it did not suffice for the care of a large number of patients all seriously ill and one and all needing individual care and attention.

By the 14th February, twenty five cases of small-pox had been admitted, the number going up to forty-three by the 21st.

The staff had in February to be increased. In Africa there are as yet no Training Centres for Nursing Orderlies, which can be drawn on in an emergency, and so any available boy had to be engaged as dressers, these naturally had no experience in the nursing of the sick and practically no knowledge of small-pox. The Ward Master in charge was now completely occupied in administration and could not afford the time necessary to supervise the Orderlies, much less train them. The M.O.H. with the preventative campaign on his hands could only find time to visit the Institution on an average twice daily. Medical Headquarters Nairobi were requested to provide a Nursing Sister, and on 17/2/25, Miss Biggar Nursing Sister, who had just returned from home leave was attached to this Department for duty at the Hospital.

With the arrival of Miss Biggar, the whole working of the hospital was re-organised, the dressers old and new were trained and supervised in their work, and the Stores available were overhauled, urgent indents being dispatched for numerous things necessary. As accommodation available was being used up, and it was feared further cases might be expected the P.W.D. were authorised on 21/2/25 to erect a temporary makuti ward capable of taking twenty patients. This was put up as rapidly as possible, and was later found to be of use for the housing of patients during convalescence.

Miss Biggar, up to the 27th February lived in the Town and visited the Hospital daily, but on that date as a case of small-pox in an European was admitted, she, with Miss Reardon Health Sister, were accommodated in the Hospital, and divided the work between themselves. An European Sister being on duty both night and day.

At the end of February the Staff of the Hospital had been increased by the following:-

European Nursing Sisters	2.
Dressers	8.
Phobies	2.
Cooks	1.
Police	4.
Disfecting Gang	4.

To assist in the case of the sick.

Assistant Surgeon Nair was during the month instructed to visit the Hospital each morning between 9 a.m. and 12 noon, and assist the Nursing Sisters as required. Captain Whittenbury for the time being was relieved of nursing duties and instructed to keep the records and attend to administration. Mr. Morgan Sanitary Overseer, was made available to supervise disinfections as required.

The general improvement in Hospital administration that occurred, firstly, on the arrival of Miss Bigger, and secondly, on the two Sisters going into residence in the Hospital was very marked, and as the person most relieved by their assistance and help, I would like to take this opportunity of expressing my gratitude to them for the whole-hearted and tactful manner in which they tackled their problems, and for the care they showed in the nursing of the patients, and aiding our efforts generally by making the hospital a popular institution.

It is feared that amongst the general public in Mombasa there existed before this a dread of the Infectious Diseases Hospital, and it is possible that this dread might in some little degree have accounted for the comparatively few cases that occurred at the beginning of the epidemic. With the re-organization of the hospital any cause for complaint was removed, the patients and contacts receiving every possible attention and care.

In February, when most of the Indian cases were admitted, most of them in children, the administration was complicated because the children were always accompanied to the hospital by parents and other members of the family taxing our available accommodation, and further in creating difficulties by reason of cast prejudices, which existed among the various sects, necessitating not only careful division of the accommodation available, but also tactful handling of cooking and feeding arrangements.

The feeding was eventually solved either by the issue of rations, families being allowed to cook for themselves, or by permitting food to be brought in from outside at the patients' expense.

The Type of Small-pox occurring

The disease all through the epidemic was severe in type, only very few mild cases occurring in people not protected. Although in several cases a history of severe pains in the back and high temperature could be obtained, quite a few gave no such history.

The diagnosis of small-pox before the appearance of the rash was at all times difficult, even in modern centres, as [illegible] cases of this disease are often preceded with pains in the back, headache etc. Differential diagnosis here is dependent on blood examination for the finding or otherwise of the Malarial parasite. [illegible] were [illegible] of a rise of temperature, but more frequently they had not arrived to be cases of malaria.

The rash on all cases shown in the appendix except three cases called, was profuse [illegible] in most cases confluent in the face.

Only cases in which the rash was confluent over the whole of the body, are shown as confluent, and these were generally associated with small haemorrhages in and around the papules.

Death occurred in practically all cases associated with haemorrhages, death in these cases being early and due to the toxaemia of the disease.

In haemorrhagic cases the rash developed slowly. The temperature remained high throughout and the patient never appeared to get over his primary toxemia. The nursing of such cases was difficult as the epidermis was easily rubbed off. One severe case was associated with haematuria.

Treatment Adopted

All patients were treated on beds, the supply available being augmented by indents on Medical Stores Nairobi.

For the general care of all cases a routine treatment was laid down. Mild cases were bathed twice daily with a lotion of permanganate of potash. In the severer cases every care was taken to maintain the temperatures of patients at or below 101. F.

Any rise of temperature above this was tretaed by sponging with a tepid solution of potassium permanganate, the solution being made as strong as the dresseers hand would permit. If the patients case permitted, the sponging was done in a long bath containing this solution.

In the confluent cases associated with small [illegible] and pte[illegible] not to wear [illegible] ore [illegible] main [illegible] one [illegible] with [illegible] top [illegible] free [illegible] the [illegible] dryness [illegible] in mild cases, and prev[illegible] the [illegible] of the [illegible] by the patient. [illegible] protect the [illegible] cake [illegible] in American.

On cases generally [illegible] positive [illegible] showing [illegible] they were smeared [illegible] with vaccine oil and this treatment was continued in until all scabs had fallen off.

After the middle of February, [illegible] carbolized vaccine in [illegible] oil, known popularly as sweet oil was used, [illegible] oil [illegible] being added. This [illegible] application, [illegible] less [illegible] and much cheaper.

Stimulants were not given until indicated. When required brandy and a mixture containing digitalis and strychnine were administered.

In all cases eyes, ears and mouth were carefully attended to, the Nursing Sisters themselves paying special attention to the eyes and seeing that these were cleaned at frequent intervals.

In quite a number of the earlier Indian cases eye trouble had started before the patients came under our care, and although these cases were treated with eye shades and atropine, corneal scars could not be avoided.

Only two cases developed ulcers on the ~~cornea~~ cornea after arrival in the hospital. These cases too terminated with

corneal opacities.

Mortality.

Up to the end of April 127 cases of small-pox were treated in the Infectious Diseases Hospital, and of these 30 ended fatally, giving a case of mortality of 23.6%. Besides [illegible] occurred after [illegible] up [illegible] 32.

Unrecognised cases

It is probable that all cases occurring did not come under our notice especially the mild cases occurring in children and adults partially protected by vaccination in the early incubation period of the disease. As stated before, children visited the Health Sister at her Clinic showing signs [illegible] very from a mild form of small-pox.

It is also extremely probable that a few cases occurring on the Mainland [illegible] as pneumonia if [illegible] is not difficult and deaths here not to be reported.

(C) DISINFECTION OF PREMISES AND ARTICLES INFECTED

On the discovery of small-pox in any building steps were immediately taken by this office to have the premises cleansed as [illegible] and disinfected by spraying [illegible].

All infected articles that could be removed were taken to the Infectious Diseases Hospital and put through the Thresh disinfector or soaked in disinfectant.

Disinfection of Patients' Effects & Hospital Linen &c

On admission patients were put into hospital clothing, their own clothing being put through the Thresh and then washed and stored for re-issuing on discharge.

Fresh clothing, bed linen and blankets were issued as frequently as required, the soiled articles being disinfected and cleansed before being re-issued.

(D) ISOLATION OF CONTACTS

Only when it was considered no proper supervision could be exercised on contacts was isolation of these insisted on. This practice was undoubtedly risky, but was decided on for the following reasons : -

1. Accommodation in the hospital was limited and it was feared might all be required for patients.

2. With the disinfection of premises and articles infected, it was considered contacts in themselves, even if incubating the disease constituted no danger to the public, until the disease began to appear, and being kept under surveillance could be controlled immediately that happened.

3. From experience gained in dealing with other epidemics, it was known that much of the concealment and opposition to the efforts of the Health Department were due to the fear that all possible contacts would be isolated. Parents, etc., usually risked not reporting cases, and the penalties that might entail, rather than put up with the inconvenience or being isolated and the possible disorganisation of their business or which they took for granted would follow on the reporting of the case.

In only one of the cases was the trust placed on families unjustified. This family on the appearance of the disease in a further member of the family fled to the mainland. The departure of this family was discovered almost immediately and they were fetched back, and one and all placed in quarantine.

(E) COST OF EPIDEMIC

159

It is a matter of the greatest difficulty to reduce to shillings and cents the cost of this epidemic to Mombasa or the Country as a whole.

Firstly, it is impossible to estimate what the [illegible] would have been had no [illegible] been undertaken, particularly [illegible] who contracted the disease.

Secondly, it is impossible to estimate the value of time and inconvenience caused to members of the General Public in little matters associated with the control of the disease, although every effort was made to cause as little interference as possible with business.

Thirdly, no estimate can be made of the time and energy expended by members of my staff, who one and all worked right through the campaign at all hours of the day and even after dusk of necessity arose, this work being in addition to the ordinary routine of the office, which had to be and was maintained throughout.

As regard to the actual control of epidemic in Mombasa, Government responsibility, the cost of staff, equipment, drugs etc., was met from Government funds. A full estimate of money expended from Medical Votes could not be given from this Office, as equipment, stores etc., are supplied from Headquarters, who alone could estimate what all these cost. It is interesting, however, to compare the expenditure under a few of the votes of which records exist in this Office with the expenditure under these votes over the same period in 1924.

	1924 Jan: to April		1925 Jan: to April	
	Shs.	Cts.	Shs.	Cts.
intenance of Inf: Diseases Hospital	1,964	40.	6,610.	41.
idemics	2,459.	00.	3,477.	09.
...ruggerats	2,940.	00.	3,750.	00.
...ling Allowance				00.
TAL....	7,363.	40.		

Total Increase on Estimate under above Hd. ... Shs. 10,772 00.

For most of the period Febru... to ...ll the Staff of this ...partment was assisted by one extra Medical Offr. and one Nursing ... , and while these persons were already on the Government ...tablishment, their appointments to Mombasa was due to the epidemic, and ...refore, their salaries during the period covered ought to be charged ...ainst it. Further, the cost of production of extra lymph ought to be ...ken into consideration with this estimate.

Business in the town generally was badly hit by the ...demic. Mombasa being a sea-port town, a very large population exist ...depend either wholly or partly for their business on trade with ...sels putting in to the harbour. Amongst this class must be included ...

1. Hotel Keepers.
2. Boatmen.
3. Taxi-drivers and Owners.
4. Shopkeepers.
5. Ship's Chandlers.
6. Laundry men or Dhobies.
7. Baggage and other Agents.
8. Dealers in Curios.
9. Casual Labour.

Since small-pox broke out in the Town, practically all ships calling at the port to safeguard themselves worked while here in voluntary quarantine, not allowing crew or transit passengers ashore, and generally having as little contact as possible with the Township. 161

After discussing the subject with various business people, I am of opinion that a very conservative estimate of the loss of business to the Town by the working of ships in quarantine is about £100 per ship and working on an average of 30 ships per month calling at this port in three months £9,000 worth of business was lost to the Town.

Lessons to be learnt from this Epidemic.

This epidemic of small-pox, which it is to be regretted, would have served an useful purpose if from it we learnt how future epidemics might be prevented or if unfortunate enough to occur controlled and took steps to enforce always what measures we have learnt are necessary.

1. That danger exists of small-pox being imported from Bombay or India generally. It is absolutely necessary if further epidemics are to be prevented to ensure either that all passengers from that country leave there protected or enforce some system of quarantining at this end, so as to be sure that no one incubating small-pox is admitted.

2. The earliest cases in this epidemic was an Indian infection, and later in the campaign a case was discovered, which had developed the disease two days after landing in the Country from a ship from Bombay. At this stage in its development, Mombasa or Kenya Colony and Protectorate can little afford to have any further epidemics of a similar nature, and hence must not take risks of importing further cases of small-pox.

Besides the ships bringing unknown to us at the time the two cases mentioned above, four other British India boats have left Bombay this year with persons incubating small-pox; cases developing in three before arrival in Mombasa, while in the last vessel a case of small-pox developed in a member of the crew after leaving this port, a further case appearing in a contact on the return journey from Durban.

2. That a very fair proportion of the population of Mombasa is constantly changing, and that if a population protected against small-pox is to be maintained on the Island or township, vaccination campaigns will have to be conducted every year. The law compelling vaccination exists. This law must be enforced and legal action taken as necessary to punish individuals failing to obey it.

The Police have powers to insure that all vehicles etc., are licensed and also powers to inspect registration certificates of all male African adults. Surely, it is not too much to ask that powers be given to make all persons produce evidence of recent vaccination when called on to do so.

With regard to motor licenses, the power is given to insure that revenue is collected, in the second case the power is given for other reasons. I would urge that for the protection of the public health, that the powers be extended to ensure vaccination.

3. That it is absolutely essential that Birth Registration should be made compulsory, if for no other reason than to enable the Sanitation Department to carry out infant vaccination.

That this is necessary is proved by the number of Indian children developing small-pox.

Until Birth Registration is enforced or some other legislation as suggested above, we shall always have growing in this Town an unprotected population.

4. The existing legislation is not sufficiently simple to insure the effective punishment of all persons found concealing a disease such as small-pox. The Public Health Ordinance 1921, makes the failing to notify an offence, but the penalty is only £3, and the offender would appear to be prepa[illegible] the [illegible] himself liable. He it is [illegible] risk [illegible] the penalty can heavier. [illegible] is more [illegible] desired [illegible] action needs to be taken under the Criminal Penal Code, under which a conviction is not easy to obtain and a conviction takes time, such as a Medical [illegible] of Health could [illegible] afford.

NOTES ON ATTACHED CHART

Chart No. I.

This shows -

164

I. The number of vaccinations done from day to day, and the number of people in Mombasa protected by vaccination as our campaign developed.

2. The number of cases of small-pox in the infective stages known to have been outside the hospital [illegible] [illegible] [illegible] [illegible] either [illegible] into hospital or [illegible]

[illegible] the number [illegible] people [illegible] estimated [illegible] infection on the [illegible] [illegible] developed the disease.

Twelve days is taken as the incubation period [illegible] disease and hence infection is assumed [illegible] [illegible] before the primary fever appeared.

Although [illegible] of infection [illegible] [illegible] [illegible] [illegible] claim that the [illegible] [illegible] [illegible] have [illegible] the period of infectivity [illegible] include all stages of the disease [illegible] the appearance of any symptoms at all. The period of incubation has not been considered infectious.

This basis for my calculations has been adopted, because in some of the earlier cases it would appear that allowing twelve days for the minimum incubation period of the disease, infection must have occurred presumably from a case in its earliest stages. Further, from experience gained during this epidemic, I would venture to suggest that the stage of initial symptoms, such as fever, pains in the back etc., is not easy to divide from the stage in which the rash appears.

It must be admitted that incubation in a few of the cases might have been slower than twelve days, but

in the absence of other evidence an average period had to be taken.

In Chart No. I. an attempt has been made 165
show how with the starting and development of the vaccination campaign, the number of cases infected and developing the disease dropped considerably, although the campaign began at a time when [illegible] in the [illegible] various [illegible] were [illegible].

The vaccination campaign apparently stopped [illegible] was threatening to develop into a serious epidemic.

TABLE OF VACCINATIONS PERFORMED

Period	Nos. done in Township	Nos. done in District.
Feb. - 23rd.	22.	-
24th - 3rd.	5,564.	-
4th - 7th	7,448.	-
8th - 14th	5,858.	-
15th - 20th	4,856.	-
21st - 25th.	12,235.	-
26th - 4th March	4,974.	-
5th - 11th	2,212.	-
12th - 18th	1,041.	10,000.
19th - 25th	1,031.	-
26th - 1st April	1,474.	-
2nd - 8th	910.	5,000.
9th - 15th.	671.	-
16th - 22nd.	589.	3,965.
23rd - 29th.	2,359.	-
30th - 5th May.	1,242.	7,869.
6th - 11th.	2,013.	1,690.
12th - 18th.	1,826.	637.
19th - 25th.	1,518.	158.
TOTAL.....	59,752.	29,319.

GRAND TOTAL .... 89,071.

STAFF OF THE HEALTH OFFICE AT TIME OF OUTBREAK AND AVAILABLE FOR VACCINATIONS.

1. Medical Officer of Health
2. Senior Sanitary Inspector, Mr. A. P. Ling
3. Sanitary Inspector, Mr. Williams
4. -do - Mr. Bunker
5. -do - Mr. Taylor
6. -do - Mr. Wadsworth
7. Chief Clerk & Supt. Mr. Hair
8. Nursing Sister. Miss Hoorden
9. Sanitary Overseer, Mr. Morgan
10. -do - Mr. Parnell.

Artizan staff used for vaccinations.

Chemical ... 1
Asbaris ... 3
Laboratory Boys ... 2
Mosquito Inspectors ... 5.

No. of Men employed.	Date of employment.	Date of discharge
1 vaccinator	16/2/26	Still in employ
1 " recording unit	16/2/26	" " "
1 " " "	16/2/26	14/3/26
3 " "	21/4/26	Still in employ
2 "	22/4/26	do.

-:-:-:-:-:-:-:-:-

LIST OF SMALL-POX CASES.

Number	Name	Date	Nationality	Age	Sex	Area from which case was brought.	Vaccinal condition	State of disease on admission.	Date of presumed infection	Type of disease.	Result.
1.	Muchoki wa Mamau	23:1:25	Kikuyu	Adult	Male	Commercial Street	Unvaccinated	5th day of disease	6th January	Confluent	Died, 1:2:25
2.	Chhipa Bin Shaba	27:1:25	Murabai	"	"	Rabai, Mainland	"	- do -	10th "	"	Died 2:2:25
3.	Ali bin Juma	29:1:25	Kikuyu	"	"	Mazeras, " (Kibikoni)	"	8th day of disease	9th "	"	Died 4:2:25
4.	Babu Chattur Bhuj	30:1:25	Banyani Ind.	Child	"	Commercial Street	"	12th "	6th "	Discrete	Recovered
5.	Narandbhai Patdri	"	"	5 yrs.	Female	Kibikoni	"	7th "	11th "	"	"
6.	Magnildi Mobichand	"	"	2½ "	Male	Commercial Street	"	14th "	4th "	"	"
7.	Chhaganlal Patel	9:2:25	Patel Class	1½ "	"	contact of case 4.	"	3rd "	22nd "	"	"
8.	Valmji K.P. Patel	8:2:25	Patel Class	Child	"	Kibikoni, contact of case 5.	"	8th "	19th "	"	"
9.	Santilal Chhotalal	"	"	1 year	"	Rogers Lane	29 : 1 : 25	4th "	23rd "	"	"
10.	Jaibhai Chattur Bhuj	9:2:25	Banyani Ind.	8 yrs.	Female	Commercial Street contact of case 4.	Vaccinated successfully	6th "	"	"	"
11.	Sardabai Patel	"	Patel Class	8 mths.	"	Commercial St. contact of case found dead, 11:2:25.	- do -	4th "	24th "	"	"
12.	Bakhri bin Ali	10:2:25	Mdigo	Adult	Male	Fungu, Mainland	Unvaccinated	6th "	"	Confluent	Died, 14:2:25
13.	Lalchand Bhimji	"	Banyani Ind.	5 yrs.	"	East Shaver Lane	"	3rd "	26th "	Discrete	Recovered
14.	Sherubai Hasanali	11:2:25	Borah	11 "	Female	Makupa Road	Vac. Suc. 31/1/25	15th "	25th "	"	"
15.	Lakshbhai Hasanali	"	"	5 "	Male	" "	Vac. Suc. 31/1/25	8th "	24th "	"	"
16.	Asgar Ali Hasanali	"	"	3 "	"	" "	- do -	8th "	22nd "	"	"
17.	Fatambai w/o Sivjoodarjee	"	"	Adult	Female	" "	- do -	" "	" "	Mild	"
18.	Rubab Jeevanjee	"	"	7 yrs.	"	" "	- do -	" "	" "	Discrete	"
19.	Rathambai Alibhai Jivanjee	"	"	11 "	"	" "	- do -	6th "	24th "	"	"
20.	Sherubai " "	"	"	5 "	"	" "	" do -	- do -	" "	Confluent	Died, 3:3:25
21.	Saddudini Jivanjee	"	"	9 "	Male	" "	- do -	- do -	" "	"	Recovered
22.	Abdulla bin Suliman	"	Giriama	Adult	"	" "	Unvaccinated	7th day of disease	23rd "	"	"
23.	Abdalla bin Amuri	12:2:25	"	"	"	Kibikoni	Vac. Success- fully 6/2/25	6th - do -	25th "	Co "	Died, 28:2:25
24.	Mahe wa Nyahwara	"	Kisii	"	"	Kuze	- do -	4th - do -	27th "	Discrete	Recovered
25.	Kimani s/o Bazi	"	Kikumbu	"	"	Makupa, U.R.Landi	Vaccinated	" - do -	" "	Confluent	Died, 18:2:25
26.	Mukiga s/o [illegible]	"	Akamba	"	"	Fonzani, Kil.Pier	Unvaccinated	6th . do -	25th "	Discrete	Recovered
27.	[illegible]	17:2:25	Banyani Ind.	7 yrs.	"	Kibikoni	Vac. Suc. 28/1/25	" . do -	26th "	Mild	"
28.	Jumwa [illegible]	"	Mdigo	Adult	"	Bush Camp, Manyimbo (H.O.Staff)	Vac.Suc.9/2/25 "unsuc.23/1/25	3rd - do -	29th "	Confluent	"
29.	Amina [illegible]	16:2:25	Banyani Ind.	5 yrs.	Female	Near Old Fish Market	Unvaccinated	6th - do -	" "	Discrete	"
30.	Zacharia [illegible]	"	Duruma	Adult	Male	Makupa Road	Vaccinated	10th - do -	24th "	"	"
31.	Kimeri [illegible]	"	Mtaita	"	"	Magadi	Unvaccinated	6th - do -	28th "	Confluent	Died, 17:2:25
32.	Fatuma [illegible] Alibhai	15:2:25	Borah Ind.	14 yrs	Female	Kibikoni	Vac.Suc. 1/2/25	9th - do -	28th "	"	Recovered
33.	Ahat.Zabai Alibhai	"	" "	10 "	"	"	-do-	7th - do -	28th "	"	"
34.	Kimanda s/o Nandi	"	Kikuyu	Adult	Male	Mombasa	Vac. Suc. 2/2/25	6th - do -	29th "	Discrete	"
35.	Mariamba Bazuri	17:2:25	Mdigo	6 yrs.	"	Ketegia, Mainland	Unvaccinated	10th - do -	28th "	"	"
36.	Kaburi wa Mungi	18:2:25	Kikuyu	Adult	"	Conservancy Camp	"	4th - do -	2nd February	Confluent	Died, 27:2:25
37.	Mutuku Mariga	"	Akamba	"	"	P. W. D. Camp	Vaccinated 8/2/25	5th - do -	1st "	Discrete	Recovered.

Number	Name	Date	Nationality	Age	Sex	Area from which case was brought	Vaccinal condition	State of disease on admission	Date of presumed infection	Type of disease	Result
38.	Johangu Bukesi	19:2:25	Ndigo	6 yrs.	Female	Kibundeni, Mainland	Unvaccinated	4th day of disease	3rd February	Confluent	Died,25:2:25
39.	Kububai d/o Moh. Unni	18:2:25	Borah Ind.	4 "	"	Mtongwe	Vaccinated unsuc. 8/2/25	5th - do -	1st "	"	Recovered
40.	Mohubna bin Mombasa	19:2:25	Mtaita	Adult	Male	Old Fish Market	Old vac. marks	5th - do -	2nd "	Discrete	"
41.	Naturalal Chhatur Bhuj	20:2:25	Banyani Ind.	5 yrs.	"	Commercial Street	Unvaccinated	5th - do -	3rd "	"	"
42.	Makindu	"	Kikuyu	Adult	"	Bondeni worked at Manor Hotel.	"	10th - do -	29th January	Confluent	Died 31:1:25
43.	Falubia s/o Omar	19:2:25	Banyani Ind.	6 yrs.	"	Commercial Street.	Vac. Suc. 12/2/25	3rd - do -	4th February	Discrete	Recovered
44.	Asgharali Alibhai	22:3:25	Borah "	8 "	"	Contact of case 2. Commercial Street.	Unvaccinated	5th - do -	7th "	"	"
45.	Kariasi s/o Baya	25:2:25	Giriama	Adult	"	Makupa, Mainland	"	8th - do -	5th "	Confluent	Died 2:3:25
46.	Magika Hamisi	"	Mkambi	6	Female	Kaloleni	"	5th - do -	6th "	"	Died 24:2:25
47.	Githanda Agethenga	"	Kikuyu	Adult	Male	one day in Mombasa	"	3rd - do -	8th "	Discrete	Recovered
48.	Miani Binti Farahed	"	Makua	8	Female	Kaloleni	"	14th - do -	28th January	"	"
49.	Salimu Salu	"	Maghiri	9 yrs.	"	"	"	7th - do -	4th February	"	"
50.	Mahtoom s/o Ali	24:2:25	Jaluo	Adult	"	Kilindini Road	"	6th - do -	5th "	"	"
51.	Cherubai d/o Hussein	"	Khoja Ind.	11 yrs.	"	Near Khoja Mosque	"	Convalescent	31st Dec. 1924	"	"
52.	Abdul Hasul	"	" "	5 "	Male	- do -	"	"	4th January	"	"
53.	Abdul Hasa	"	" "	2 "	"	- do -	"	"	4th "	"	"
54.	Zainab Kanjaruddi	"	" "	Adult	Female	- do -	"	"	4th "	"	"
55.	Mohamed Bakur	"	" "	1 yr.	Male	- do -	"	20th day of disease	23rd January	"	"
56.	Kainab Kanyamali	"	" "	2 yrs	Female	- do -	Vac. Suc. 30/1/25	10th - do -	23rd "	"	"
57.	Iddik Hassan	"	Mamman "	3 "	Male	- do -	Unvaccinated	4th - do -	8th February	"	"
58.	Wamdren s/o Waluo	"	Jaluo	Adult	"	?	Vac. old date	5th - do -	6th "	"	"
59.	Osman Jiwa	"	Mamman Ind.	2 yrs	"	Off s.s. "KARAGOLA"	Unvaccinated	8th - do -	2nd " (India)	Confluent	Died 25:2:25
60.	Kotyabai Hassanali	"	Borah "	Adult	Female	Makupa Road	Vac. old date	4th - do -	8th February	Mild	Recovered
61.	Mohamed bin Abdulla	28:2:25	Baluch "	8 yrs	Male	Salim Road	Vac. Suc. 20/1/25	8th - do -	12th "	Discrete	"
62.	Kirua wa Pukari	"	Mtaita	Adult	"	14 days in Mombasa	Vac. Suc. 5/2/25	8th - do -	11th "	Confluent	"
63.	Wanje wa Wamasaki	"	"	12 yrs	"	- do -	-do-	5th - do -	13th "	Discrete	"
64.	Mbasha Kivaga	1:3:25	Mamman Ind.	6 "	"	Ndia Kuu	Vac. Suc. 23/2/25	3rd - do -	15th "	"	"
65.	Omar Juma	"	Indian	1 "	Female	Off s.s. "KARAGOLA"	-do-14/2/25	6th - do -	10th "	Very mild (6 spots)	"
66.	Hamisi Mwinyi	"	Seychellois	4 "	"	Salim Road	-do-23/2/25	3rd - do -	15th "	Discrete	"
67.	Kabaka Kisoi Mwili	"	Swahili	14 "	"	Kanageni	-do- "	3rd - do -	15th "	Confluent	"
68.	Mwidau Kivisa	"	Kikuyu	Adult	Male	Kibikoni	-do-29/2/25	4th - do -	12th "	Discrete	"
69.	Fatima Mwinyi	"	Banyani Ind.	12 yrs	Female	Kilindini Road	-do-21/2/25	4th - do -	17th "	"	"
70.	Kyeu wa Kitonga	2:3:25	Kikuyu	Adult	Male	Conservancy Camp	-do-22/2/25	3rd - do -	16th "	Confluent	Died 11:3:25
71.	Kanyi wa Mwangi	2:3:25	"	"	"	"	Unvaccinated	5th - do -	14th "	Discrete	Recovered
72.	Mohamed Kachumbo	4:3:25	Mamman Ind.	5 yrs	Female	?	Vac. Suc. 22/2/25	3rd - do -	17th "	"	"
73.	Mashiri Kaperi	3:3:25	Kikuyu	Adult	Male	Conservancy Camp	Unvaccinated	3rd - do -	16th "	"	"
74.	Fatuma Adam	4:3:25	Mamman Ind.	9 yrs	Female	Kaloleni	Vac. Suc. 25/2/25	4th - do -	16th "	"	"

Number	Name	Date	Nationality	Age	Sex	Area from which case was brought.	Vaccinal condition	State of disease on admission	Date of presumed infection	Type of disease	Result
75.	Fatuma Said	5:3:25	Arab	Adult	Female	Makupa Road	Unvaccinated	4th day of disease	17th February	Discrete	Recovered
76.	Ismail Ndati	"	Kikuyu	"	Male	Conservancy Camp	"	3rd do.	18th "	Confluent	Died 10:3:25
	Mugwa Kumadi	"	Kikuyu	"	"	Mbaraki	Vac. Suc. 25/2/25	5th do.	16th "	"	Died 13:3:25
78.	Paulo Mganda	6:3:25	Giriama	"	"	Kisauni	Unvaccinated	4th do.	18th "	Mild	Recovered
79.	Nyenga Siowa	"	Mzungu	"	"	P.W.D. Lasdi	Vac. old date	3rd do.	19th "	Discrete	Recovered
80.	Phyllis Rosenberg	"	Switzerlein	10 yrs.	Female	Salim Road	Vac. Suc. 23/2/25	5th do.	17th "	Mild	"
81.	Mohamed Ahmed	7:3:25	Swahili	Adult	Male	Bondeni	Unvaccinated	4th do.	19th "	Discrete	"
82.	Kioko wa Mbondo	8:3:25	Mkamba	Adult	Male	Ziwani, Mainland, conv. by Sea	"	5th do.	19th "	"	"
83.	Mbuvi wa Mbonge	"	Mkamba	"	"	"	"	3rd do.	19th "	Confluent	Died 18:3:25
84.	Mahenda wa Kimaiyu	"	Kikuyu	"	"	Conservancy Camp	"	4th do.	18th "	Mild	Recovered
85.	Mwenga Kiini Mwinga	10:3:25	Mdigo	16 yrs.	Female	Jumaili	Vac. Suc. 28/2/25	4th do.	19th "	Discrete	"
86.	Mwalimu Mwandisi	11:3:25	Arab	Adult	Male	"	Unvaccinated	4th do.	22nd "	"	"
87.	Bwana Mashudu	"	Swahili	"	Female	Mbaraki	Vac. Suc. 7/3/25	7th do.	20th "	Confluent	Died 14:3:25
88.	Hadzi Ali Abdulla	12:3:25	Kashmiri	7 yrs.	"	Makupa Road Near destructor	Vac. unsuc. 7/3/25	6th do.	21st "	"	Recovered
89.	Lopez Livingstone	12:3:25	Goa	Adult	Male	P.W.D. Lasdie	Vac. Suc. 2/3/25	3rd do.	25th "	"	Died 16:3:25
90.	Kuluma Kazungu	"	Mkamba	"	"	Arr. from Voi no fixed residence in MSA	do. 4/3/25	3rd do.	25th "	"	Died 17:3:25
91.	Waga Kaimba	14:3:25	Ntatta	"	"	P.W.D. Lasdie	do. 2/3/25	4th do.	27th "	Mild	Recovered
92.	Fikirini Mbumba	15:3:25	Mkamba	"	"	Takaungu, Mainland	Unvaccinated	14th do.	16th "	Discrete	"
93.	Bafashi Omari	17:3:25	Swahili	"	Female	Kaloleni	Vac. Suc. 8/3/25	9th do.	24th "	"	"
94.	Lawrence Lopez	19:3:25	Goan	8 yrs.	Male	Kwale, Digo Reserve	do. 25/2/25	12th do.	23rd "	"	"
95.	Singaibo	20:3:25	Nalue	Adult	"	Kilindini	do. 10/3/25	3rd do.	5th March	Mild	"
96.	Hassanali Moosaji	21:3:25	Indian	"	"	Kibokoni	Unvaccinated	Convalescent	23rd January	Severe	"
97.	Mohamed bin Habui	23:3:25	Kikuyu	"	"	Fort, Mombasa	" (Is marked as if had previ-	5th day of disease	6th March	Discrete	"
98.	Pogla Maganga	24:3:25	Giriama	"	"	Kisauni	Unvaccinated	4th do.	8th "	"	"
99.	Buki Luzima	25:3:25	Manema	"	"	Fruit Market, MSA.	"	6th do.	9th "	Confluent	Died 30/3/25
100.	Mohamed bin Sheik	26:3:25	Arab	"	"	Mamba Tayari	"	4th do.	9th "	"	Recovered
101.	Ndegwe Kaburi	25:3:25	Kikuyu	"	"	Conservancy Camp	"	6th do.	8th "	Discrete	"
102.	Kamebere Mathamaragulo	27:3:25	"	"	"	Nat. Civil Hospital	"	3rd do.	12th "	Confluent	Died 29:3:25
103.	Momo Mongoro	"	Duruma	12 yrs.	Female	Kaloleni	"	Convalescent	?	Discrete	Recovered
104.	Salda binti Juma	28:3:25	"	"	"	"	"	"	?	"	"
105.	Abdulla bin Saidi	"	Giriama	Adult	Male	Changamwe, Mainland	"	"	?	"	"
106.	Maria Nuwithia	"	Kikuyu	"	"	Conservancy Camp	"	5th day of disease	11th March	"	"
107.	Machunesi Bega	3:4:25	Mdigo	"	Female	Changamwe, Mainland	"	Nearing convalescent	?	"	"
108.	Khoya bin Bega	"	"	6 yrs.	Male	" "	"	5th day of disease	17th March	"	"
109.	Harafa binti Hamadi	6:4:25	Swahili	Adult	Female	Kengeni, Mainland	"	8th do.	20th "	"	"
110.	Kayale bin Kombo	"	Giriama	"	Male	Chuni, Mainland	"	14th do.	11th "	"	"
111.	Salah Maleni	11:4:25	"	"	"	Kilindini	Vac. unsuc.	10th do.	20th "	Confluent	Died 12:4:25

Number	Name	Date	Nationality	Age	Sex	Area from which case was brought.	Vaccinal condition	State of disease on admission		
110.	Ohulo Mang[illegible]	13:4:25	Mkamba	3 yrs.	Male	[illegible]		[illegible]		
[illegible]	[illegible]					Juakali		[illegible]		
[illegible]	[illegible]	16:[illegible]		"		"		2nd		
[illegible]	[illegible]	[illegible]	African			"		3rd	do.	
116.	[illegible]	"	Borah. Ind.	"	Female	Rondeni - recently from Mainland		[illegible]	do.	
117.	Tyabali [illegible]				Male	do		[illegible]	do.	
118.	[illegible]				Female	do		5th	do.	
119.	[illegible] bin Omar	[illegible]	[illegible]		Male	[illegible] Reserve		6th	do.	
120.	Abdulla bin Mohamed	18:4:25	Swahili			Macadupo Market		[illegible]	do.	
121.	[illegible]	25:[illegible]:25	[illegible]		Female	[illegible] from Mainland		[illegible]	do.	
122.	[illegible] bin Abdulla	[illegible]:4:25	[illegible]		Male	[illegible] possibly [illegible]		4th	do.	
123.	Yusuffali Ibrahimji	22:[illegible]:25	Borah I.			[illegible]		[illegible]	do.	
124.	[illegible] binti Sham[illegible]	2[illegible]:4:25	Swahili			[illegible]	[illegible] date	2nd	do.	
[illegible]	[illegible]					Mulango Kilima	Unvaccinated	3rd	do.	
[illegible]	[illegible]	[illegible]:25	[illegible]	3 yrs.	Female			[illegible]	do.	
[illegible]	[illegible]			Adult		Tarangan[illegible]		4th	do.	
[illegible]	[illegible]	1:5:25	Mkamba	"	Male	Kibikoni	Vac. suc. 24/5/25	4th	do.	
28.	Rahima binti Juma	2:5:25	Swahili	"	Female	Mombasa	Unvaccinated	5th	do.	
29.	Salimu bin Ali	7:5:25	Mdigo	"	Male	Likoni	Vac. old date	3rd	uo.	
30.	A. J. de Souza	9:5:25	Goan	"	"	Ndia Kuu	do.	6th	do.	
31.	Sharmu binti	14:5:25	Wanika	"	Female	Saigoi, Mombasa	Unvaccinated	3rd	do.	
32.	Amari bin Khamis	18:5:25	Mehaja	15 yrs	Male	Juakali	"	5th	do.	
33.	Abdulla bin Juma	"	Mtokomo	Adult	"	Kaloleni	"	6th	do.	
34.	Chikoo binti Sulemani	17:5:25	African	16 yrs.	Female	Mnaji Moja	"	5th	do.	
35.	Gurwewe Mohamweko	"	Mdigo	8 "	Male	Miembeni	"	10th	do.	
36.	Kalumbe ~~Hamz~~ wa Mzee	19:5:25	Giriama	Adult	"	Teso, Kilifi - Mainland	"	10th	do.	
7.	Mbaraka Rubeia	24:5:25	Mdigo	"	"	Freretown - Mission Mainland	Vac. 20/5/25	4th	do.	
8	Mr. Michael Moran	27:2:25	European	"	"	Pauling & Co.	1 vac. mark childhood	6th	do.	9th March

of disease dmission	Date of presumed infection	Type of disease	Result
Gen.	?	Discrete	Recovered
[illegible]	28th "	Confident	Died 25:4:25
do.	31st "	Aborted	Recovered
do.	2nd April	"	"
do.	2nd "	Confluent	Died 25:4:25
do.	2nd "	Discrete	Recovered
do.	2nd "	"	"
do.	3rd "	"	"
do.	3rd "	"	"
do.	5th "	Confluent	Died 5:5:25
do.	5th "	"	Died 30:4:25
do.	14th "	Very mild	Recovered
do.	14th "	do. ?	Died 9:5:25
do.	9th "	Discrete	Recovered
do.	24th March	"	"
do.	14th April	"	"
do.	14th "	Confluent	"
do.	23rd "	Mild	"
do.	22nd "	Mild	"
do.	30th "	Confluent	Died ?
do.	30th "	"	Died ?
do.	30th "	"	Died ?
do.	1st May	"	Died
do.	24th April	Discrete	Recovering
do.	28th "	"	"
do.	8th "	Confluent	?
do.	9th March	" haemorrhagic	Died 4:3:25

CASES OF [illegible] DISCOVERED AFTER DEATH

Number	Name	Date	Nationality	Age	Sex	Area from which death reported.
139	Savithia Sunabhai	30	[illegible]	3 years	Male	Mercial Street
140	Mushrisa Jivanjee	11	[illegible]	18 months	"	Kenya Road
141	Tatchu Rajabu	12	Swahili	5 years	"	Ruiweni
142	Ali bin Abdulla	25	African	"	"	Ruiweni
143	Kijafi binti Mohamed	14	Swahili	"	"	Kango Gulnema

173

with much interest and
comment very favourably
upon it. In particular
they have noted with
satisfaction the success
of the permanent site
of potable treatment, and
the effect which the results
of the campaign against
yaws have had in
inducing confidence in Native
medical methods in the
native mind.

3. My advisers fully concur
in the recommendations made
in the concluding pages of
Dr de Boer's report, and
especially in the necessity
for enforcing the registration
of births and the vaccination
of immigrants from India. I have
that Mr Pasham has already [illegible] for
action be taken [illegible] under the
[illegible] in the case [illegible]

(Signed)