

26

E. AFRICA
TANGANYIKA



X. 1640
15 FEB 1926

RON

52

DATE
19th January 1926

MEDICAL AND SANITARY SERVICES

This copy memorandum containing his views on the recommendations of the E.A. Commission.

Paper

MINUTES

55852 20
26 Tang

Hand pr replies from Kenya Uganda
N.K.H. 1

W.D. 10/1/26
above

P.D.

Please print this despatch for CAMS Ctn (without printed memoranda).

W.D. Downie
6.12.26

above

Copies circulated for info to CAMS Committee at the 20th meeting (17 Feb 27)

On 7/4/27

McDougal
2 priority copies
7/4/27

Print Paper

10920
Uga.



GOVERNMENT HOUSE,
DAR ES SALAAM.

X. 1640
5 FEB 1926

19 January, 1926.

TANGANYIKA TERRITORY

No. 52

9035-24

Sir,

I have the honour to acknowledge the receipt of your despatch No. 567 of the 23rd September, and in reply to transmit the annexed Memorandum furnishing my views on the suggestions and recommendations of the East Africa Commission regarding medical and sanitary services in this Territory.

I have the honour to be,

Sir,

Your most obedient humble servant,

Donald Cameron
DONALD CAMERON

GOVERNOR.

HONOURABLE
G. K. S. AMERY, P.C., M.P.,
&c., &c., &c.,
DOWNING STREET,
S.W.

X. No. 3907/25

Enclosure in No.

Enclosure to despatch No. 5239;
of 19 January 1926

X-1540
5 FEB 1926

Medical and Sanitary Services.

1. The East Africa Commission on page 44 of their report record the opinion that in the long run the efficiency of labour depends on the physical and mental quality of the labour at the source. This is obvious and the Government will, so far as its resources permit, continue to devote itself to the duty of improving the physical and mental standard of all the natives, whether they are likely to go out to labour for others or not. Natives who go out to labour on contracts are medically examined, if possible, before they are recruited, but it is not always possible to bring them before a medical officer or a Sub-Assistant Surgeon before they leave the area in which they reside, although every effort is made to effect this.

2. Natives who leave their own areas to seek work, and they must be free to do so, cannot be medically examined in the same way, but it will be remembered that the new Labour Department proposes to establish a central camp at or near Kilosa, on one of the main routes, in the hope that it will be able to attract itinerant natives to it so that they may receive medical attention or be sent back to their homes if necessary. If this camp is a success others will be started. Measures are also proposed which will make the identification of the native easier (he will be required to carry his tax receipt on his person).

3. The care of labour on its way from the place of recruitment to the place of work is an important matter,

of _____ January 1928

397

- 2 -

as pointed out by the Commission, and, as already reported, the new Labour Department will devote particular attention to it. I gave instructions some months ago that where a railway is available for the transport of recruited labour employers must use it instead of marching the labour long distances on foot.

4. A Memorandum dealing with the care of native labour on the plantations was issued by the Medical Department during the year and a copy of it is annexed. It is proposed to prepare and publish a small handbook dealing with the treatment of the more usual diseases and injuries. A Memorandum with regard to the care of labour employed on Government undertaking is also annexed.

5. Now I turn more particularly to what I have described as the general duty imposed on the Government of doing everything in its power to improve the physical standard of the natives. It is true, as the Commission state, that an all-white medical service in East Africa is impossible of realisation, that the transmissible epidemic and endemic diseases, which are largely preventable, are from a social point of view the most important, and that it is to these cases that the energies of a native medical staff can best be applied. But after reading the remarks of the Commission on this subject with the greatest care, I have been unable to ascertain what they mean precisely when they write of a native medical staff.

6. On page 57 of their report they describe certain natives who are being trained, particularly in Nyasaland and Uganda, their duties including compounding, vaccination, injections

-3-

injections for the commoner diseases, administering anaesthetics and minor surgical operations. They then proceed to state that such training must be regarded as only a beginning and that at the earliest possible moment provision must be made for the higher training of natives in medical work. The latter sentence appears to have lost its proper place, as immediately afterwards they revert (so far as I am able to follow their meaning) to the native medical subordinates to whom they had, as above, previously been referring, and state that those subordinates must be given a defined professional and legal status and must on attaining the necessary qualifications, be given the power to practise on their own account. The Commission then go on to state that "the very best and most successful of these native medical assistants would doubtless wish to become fully qualified medical practitioners. This is an aspect of the matter which must be taken into consideration, and every opportunity should be given to those members of the native medical staffs to achieve an honourable ambition. For the present, however, there is no such demand".

7. Who are these "native medical assistants", these "members of the native medical staffs"? Are they the medical subordinates (Dispensars or Compounders, I should call them) who are being trained to compound, vaccinate, etc., as described in the opening lines of the preceding paragraph, or are they something higher than this, intermediate between the Dispenser or Compounder and the fully qualified medical practitioner? If the latter, a new type of

-4-

of medical assistant (or practitioner, I should possibly say, as he is to have "professional and legal status" and "power to practise" on his own account) of whom I have not previously heard has been introduced on the scene, and I should be glad if I could be afforded further information as to his training, qualifications, etc. If the former, we can turn out only dispensers or compounders with a licence to dispense or compound medicines; I do not know of any other professional or legal status which could be conferred on them or how they could be empowered to 'practise' on their own account.

8. I have written above that we can turn out dispensers or compounders but there is a difficulty in doing that, so far as our own people are concerned, inasmuch as the pupils must have a knowledge of English. We have been in Tanganyika for a few years only, comparatively speaking, and there is no one who can teach English in the schools except the European, with the result that few schoolboys have a knowledge of the English language. In this respect the position is entirely different from that existing on the West Coast of Africa where English takes the place occupied by Swahili in Tanganyika. A beginning has been made, however, and the first class is being formed, but so far only four candidates with the requisite education have been found.

9. The Medical Department has a number of Nyasaland Dispensers in its employment but it is becoming increasingly difficult to obtain trained men from that source.

Enquiries

Enquiries will be made as to the possibility of obtaining dispensers trained in the Uganda schools mentioned in the report of the Commission. Efforts to obtain boys from Nyasa Mission schools in order to train them here have not so far been successful.

10. The Director of the Medical and Sanitary Services writes as follows on this subject of the supply of Dispensers:-

"It has long been realised that in order to convey relief to the mass of the population in the districts, African medical units, trained in dispensing, first aid, minor surgery, and the elements of medicine, are indispensable. During October, 1924, I addressed the Chief Secretary regarding this matter and endeavoured to arrive at some understanding, with the teaching medical Missions in Nyasaland, towards establishing a regular supply of Dispensers. The question of money arose and some time elapsed before the subject could be actively pursued again, and it was not until June, 1925, that I was able to communicate with the Blantyre and Livingstonia Missions. Regarding the former it has been ascertained since that no supply is available, and negotiations are still in progress as regards the latter. The views of this department were placed before the Commissioners during their visit, at Dar-es-Salaam, and further thought has been devoted to

Enquiries will be made as to the possibility of obtaining dispensers trained in the Uganda schools mentioned in the report of the Commission. Efforts to obtain boys from Nyasa Mission schools in order to train them here have not so far been successful.

10. The Director of the Medical and Sanitary Services writes as follows on this subject of the supply of Dispensers:-

"It has long been realised that in order to convey relief to the mass of the population in the districts, African medical units, trained in dispensing, first aid, minor surgery, and the elements of medicine, are indispensable. During October, 1924, I addressed the Chief Secretary regarding this matter and endeavoured to arrive at some understanding, with the teaching medical Missions in Nyasaland, towards establishing a regular supply of Dispensers. The question of money arose and some time elapsed before the subject could be actively pursued again, and it was not until June, 1925, that I was able to communicate with the Blantyre and Livingstonia Missions. Regarding the former it has been ascertained since that no supply is available, and negotiations are still in progress as regards the latter. The views of this department were placed before the Commissioners during their visit, at Bar-es-Salaam, and further thought has been devoted to

the subject. It is now abundantly clear that the numbers required are so large as to preclude any likelihood of missions being in a position to meet our demands; we must therefore fend for ourselves.

For various reasons, whilst a proportion of those trained might conveniently be natives of tribes not indigenous to this Territory, nevertheless it is of importance that whenever possible the different tribal areas should be supplied with staff consisting of members either of their own tribe or those of friendly neighbours. For this reason one central medical school would not be an advantage, apart from the question of accommodation. Whatever other Governments might feel disposed to do as regards amalgamating schools, Uganda and Kenya for example, Tanganyika, in my opinion should have its own medical school, which I am convinced from every point of view, should be begun at as early a date as possible, and should form an annex to the new Native Hospital at Dar-es-Salaam. We have now 4 African Dispensaries whereas we require at a low estimate 200."

There will, I think, be general agreement with his argument that we must endeavour to train our own natives for this work.

- 7 -

11. In regard to Sanitary Inspectors the Director writes as follows:-

"The organisation on the preventive side has been well launched. There are two classes, (a) Urban African Sanitary Inspectors, who are put through a nine months course of theoretical and practical sanitation; and (b) District African Sanitary Inspectors who are given a three months course of practical sanitation.

Both these classes are trained under the supervision of the Sanitation Officers and their European Sanitary Superintendents, and prove their competence by examination before being confirmed in their appointments.

The organising of a district branch of African Sanitary Inspectors was foreshadowed in my Annual Medical Report for 1924, pages 24 and 27. There are now approximately 50 trained men in the field, and it is anticipated that we shall have between 150 to 180 distributed by the end of 1926. It is proper that from their knowledge of the density of the population in the different areas, the Administrative Officers should indicate the radius of work of each Sanitary Inspector, but as regards the technical activities of the latter it cannot be otherwise than as I stated in my covering letter to the Estimates for 1925-26, page 7, and which

principle

- 8 -

principle the Advisory Committee recognise, that the District African Sanitary Inspectors should be responsible directly to the Sanitary Authority of the district concerned".

I would add that in districts in which Native Administrations have been established it will be necessary for the Medical Officer of Health and the Sanitary Inspectors to work through the Chiefs rather than directly. In those cases the nature of the instructions which it is desired to issue should be indicated to the Chief and should be promulgated by him.

12. The system of travelling clinics has already been started and will be extended as funds and staff permit. It is strongly advocated in the Director's report for 1925 which is in the hands of the Printers. The question of travelling laboratories is being discussed in other correspondence in connection with the larger issue of central laboratories in the East African territories and cannot be dealt with apart from that larger issue, which should be settled first. I would only add here that travelling laboratories seem to me to be a little bit in advance of what we can do in Tanganyika during the next few years. Arrangements have been made for the sale of quinine at cost price at all Post Offices from the 1st of January 1926.

13. In the despatch of the 23rd September it is stated that the Colonial Advisory Medical and Sanitary Committee expressed the opinion that intensive measures should

should be taken from time to time against the diseases enumerated in group 3 on page 58 of the Report of East African Commission, and in this connexion the Director remarks as follows:-

"Regarding the diseases mentioned in group 3 on page 58 of the Report, i.e. Venereal Diseases, Yaws, Leprosy and Ankiostomiasis, more staff is of course required. It is estimated that during 1925 approximately 60,000 cases of Yaws and 10,000 cases of Syphilis will have been treated with Bismuth Sodium Tartrate. Regarding Gonorrhoea, facilities for douching for both females and males have been available at the larger medical centres for several years; and recently Mercurochrome, 50 grammes of which were sent out by the Colonial Office under advice of Dr. Balfour, and 400 grammes of which we purchased prior to the receipt of the above, has been distributed to all Medical Officers for the relief of the chronic complications and sequelae of this disease. A circular detailing the dosage and therapeutic application of both Mercurochrome and Calcium Chloride has also been issued. Venereal inspections of troops and police take place regularly. Whilst the treatment with the Ethyl Esters of Chaulmoogra Oil is still being carried out at Dar-es-Salaam, we depend largely upon segregation for the ultimate elimination of Leprosy. Some experimental work was conducted by us with intravenous

intravenous injections of Gold Chloride, but as no indication of any benefit could be observed the effort was abandoned. With the staff at my disposal at present I fear that more cannot be done, for there are other pressing needs, connected with more active forms of disease, to be met.

The cases of ankylostomiasis that have been treated at the various hospitals, are a mere fraction of the numbers existent. However, during the current year, a definite campaign of Village sanitation and treatment on orthodox lines has been started in the Tanga District. It is hoped that with the support of the District Administration beneficial results will accrue, and that the experience gained locally in the Tanga District might be made applicable to other heavily infested areas of the country. It might not be without interest to the Advisory Committee to know that the distribution of Santonin for the treatment of Round Worm, with which parasite the rural population of the Moshi District appear to be heavily infested, was also effected during 1925.

14. I would state in reference to the remarks of the Commission on pages 180 - 181 of their report that on the Draft Estimates for 1926-27 provision has been made for enlarging the activities of the Medical and Sanitary Department by the addition of personnel (Medical Officers, Nursing Sisters

Nursing Sisters and Health Visitors, Sanitary Superintendents, Sub-Assistant Surgeons, Compounders, etc.) and otherwise. There are at present five maternity and child welfare clinics, I may add. In 1925-26 the provision for the medical and sanitary services was increased by over £28,000 and I am glad to be able to state that it has been found possible on the draft Estimates for next year to increase the votes for the Department by a further sum of over £45,000 (from £147,701 to £193,066). These are substantial increases over a period of twenty-four months. Prior to 1925-26 the Director had been told that he must keep his draft Estimates within the provision for the previous year.

15. In the draft Estimates for 1926-27, moreover, provision has been made for a number of new hospitals and dispensaries, as follows:-

- Completion of hospital at Kilosa.
- Hospital and dispensary at State.
- " " " " Kibaya.
- Dispensary and hospital at Kibondo.
- " " " " Manyoni.
- New hospital at Songea.
- " " " Bukoba.
- European hospital and Nurses quarters at Tukuyu.
- Dispensary and hospital at Biharamulo.
- Completion of the large Central Hospital at Dodoma.

This is, I submit a very satisfactory programme for one year.

16. I agree with the view expressed as regards Mission Hospitals that they should receive as much assistance as possible

possible from the Government, subject to proper inspection. I am informed that in this Territory Missions have received help in the shape of drugs, especially bismuth-sodium-tartrate up to their full requirements, and that financial assistance has also been rendered for the purchase of drugs and dressings. I consider that the assistance by Government should be placed on a more organised footing and I propose to institute enquiries as to the most efficient manner in which this can be done.

17. In the course of my recent extensive travels through Tanganyika I have had constantly before my mind the problem of improving the physical standard of the natives in this vast Territory, looking at it more particularly from the point of view of the recommendations made by the Director in his annual report for last year, which he summarises as follows:-

"An increase in the staff of European Sanitary Superintendents in numbers sufficient to meet requirements of the different Districts, and for the purpose of supervising the work of the African district staff of Sanitary Inspectors, is a necessity that must be kept in mind and facilitated at an early moment. To get the best out of the organisation mentioned European supervision is essential.

Medical Officers for special duty connected with certain of the more important infective diseases. The appointment of a special Medical Officer for anti-syphilitic work in the Bukoba district

district during December has shown most encouraging results and an extension of this system whereby the Medical Officer actually tours and works over each area will, I am confident, produce far more effective results than work at one or two large stationery clinics, however well equipped. I do not suggest that the latter are not necessary but the itinerant system is more effective for mass treatment. The Africans in certain districts are so apathetic, especially in the case of a chronic disease such as syphilis, for which a comparatively long course of treatment is required, that they refrain from applying for treatment even though the distance to be covered in seeking it is trifling.

Permanent well-built hospitals are still required at several stations.

Registration of births and deaths, in all classes, in all townships.

A larger percentage of unmarried medical officers should in future be selected for duties connected with district work.

Extension of piped water in all townships, the provision of well-built covered wells with pumps in all densely populated native centres where clean water supplies are not available.

Increased applications of drainage, generally, and specially of swamps at and near all townships.

He goes on to state that it is hoped ultimately to establish in every district the organisations mentioned below for medical, maternity, and sanitation work.

- (a) District Medical Officers.
- (b) European Sanitary Superintendents.
- (c) District African Sanitary Inspectors.
- (d) Venereal Diseases and Yaws mobile clinics.
- (e) Maternity and Child Welfare centres under the supervision of European Nursing Sisters.
- (f) Qualified Dispensers in charge of district dispensaries.
- (g) Tuberculosis Sanatoria, at or near our larger towns, as described under tuberculosis, for purposes of segregation and treatment.
- (h) Mobile clinics for surgical work, including its specialised branches, to follow later.

10. The recommendations are sound in themselves but the framework is very large and years must pass before even the largest details can be filled in. In the meantime we are faced with the fact, which is somewhat disturbing to my mind, that owing to the absence of vital statistics which for many years it will be impossible to obtain generally with any degree of accuracy we are unable to make any really valuable estimate of the success or otherwise of our efforts; and for this reason I am disposed to think that it would be exceedingly instructive if we could, in addition to our general programme as mapped out by the Director, endeavour to organise an intensive campaign in one particular area or amongst one particular tribe in order to obtain reliable information and statistics in regard to the physical progress or otherwise of a typical

-15-

section of the native population. We have at present no real guidance on this vitally important matter and I do not see how we are to acquire it within a reasonable period if we pursue a general programme of work, however sound that programme may be in itself. If this view commends itself I suggest that provision for such an intensive campaign should be made on the Estimates for 1927-28, or earlier if the state of the finances permits this to be done. Dr. Shircore and I have already discussed certain tribes that we have seen on our travels together amongst whom the experiment might be tried.

19. I would state in conclusion that after nine months in the Territory, in which time I have seen a good deal of it, I have formed the opinion that in spite of grave shortages in men and money the Department has made material progress; more rapid progress amongst the natives than I have seen elsewhere under somewhat similar conditions. The campaign against Yaws, with the results obtained to the immeasurable relief of some ninety thousand natives, may be regarded as a very outstanding feature in the whole medical history of the British Dependencies and reflects the greatest credit on the present Director, Dr. J.O. Shircore, who initiated it and whose example has been followed in neighbouring Colonies. The Commission gives him credit for the great saving in money effected in the treatment of yaws: I give him credit for saving a very large number of helpless persons from physical disability and acute distress.

Para 20.

20. I desire also with all respect to my valued friends in the Medical and Sanitary Services of Nigeria to repeat the remark which I made in a despatch earlier in the year that I am very much inclined to believe that more is effected here than in Nigeria for the same sum of money although, generally speaking, prices are about the same level in the two countries, so far as I can judge.

Sd/- Donald Cameron.

29th December, 1925.



TANGANYIKA TERRITORY

Memorandum dealing with the
Care of Native Labour
on Plantations

DAR ES SALAAM
PRINTED BY THE GOVERNMENT PRINTER
1925

Memorandum dealing with the Care of Native Labour on Plantations.

General Considerations.

The experience of large employers of labour is that the death rate is higher in large compounds than in small ones, irrespective of more efficient sanitary organisation, and the explanation lies in a variety of reasons. Small compounds are usually filled by local natives who are accustomed to the local conditions of climate and food, and who moreover possess some immunity to the local diseases. The circumstances are however entirely changed when there is an influx of large numbers of men, who frequently come from areas as distant as 400 to 500 miles, arrive in a fatigued condition, and find themselves in surroundings and conditions totally different to what they were accustomed to. Epidemics are more frequent, chiefly because of the greater probability of infection in large compounds, and spread with greater rapidity. The work of the natives is also different on a plantation, where definite hours and routine have to be observed. The local food-stuffs may or may not be suitable and variations as regards climate, altitude, housing, etc. all conspire together towards the production of general ill-health and disease.

In order to circumvent these difficulties, and to maintain the health of the worker, a thorough organisation, dealing with the whole chain of these events from its inception, must be created. To expect any amelioration to take place by the mere provision of small hospitals and drugs, that is treatment after all the damage has been done, is erroneous.

The principles to be followed are—

- (1) Living accommodation—sufficient cubic space and ventilation, and the construction of a good type of hut of such dimensions as to facilitate cleansing and keeping it free of vermin, jiggers, ticks, etc. It is particularly desirable to aim at a maximum dispersion and to afford as few boys as possible per hut.
- (2) Where rations are issued, and it is considered that this is preferable to ration allowance, the diet must be ample in quantity and of sufficient variety. There should not be a superabundance of carbohydrates, that is starchy foods, and there must be proper provision and supervision of cooking arrangements whatever be the method of ration issue employed.
- (3) The attention to all points which contribute to the welfare of the recruit and particularly in allowing a period of rest after a long journey and a gradual training from light to heavy work.
- (4) The employment of a compound manager for the supervision of all details of housing, diet, sanitation, etc. can hardly be overestimated.

Pre-recruiting Problems.

Whenever it is available, information regarding the habits and customs of the natives of the areas to be recruited should be obtained. This information will be found useful more particularly

relative to diet, climatic conditions, and indigenous diseases. For example, armed with this knowledge, it might be possible to arrange that natives, accustomed to certain dietetic and climatic influences, be supplied to areas which bear a strong similarity to or away into the desert to a certain extent, in this respect, from the obstacles involved. The transfer and exposure of natives living in water-logging areas to the rigours of a cold mountainous climate, or a hot inland one living at an altitude above the malarial zone to a low lying one, or vice versa, should be avoided, or suitable precautions made and precautions taken to allow time for the necessary processes of acclimatization and other physiological adjustments to take place.

Recruiting.

There are various important factors which have powerful influences on the question of recruiting — the transmission of germs from infected points and their absorption into the working men.

(a) **Physical inspection.** Preferably this should be in the hands of a medical officer or medical men who form part of a special organization for this purpose. Recruits should be selected from among well built young men. The age limit should be 45. Lanky, thin, small, narrow and face lined individuals should be excluded on sight. A chest measurement of 30 in. on expiration with the arms down at the side should be considered as a minimum. Size is not of consequence if the subject is well proportioned. The following diseases must exclude from employment: Syphilis, unless there are facilities for treatment; Leprosy and Tuberculosis, Heroin (if large quantity), loss of, or limitation of, function of a limb or joint, which is likely to prevent the proper performance of the work required. Chronic disease of the heart, bronchitis, spleen, and legs or feet. Any extensive areas of the body, especially accompanied with a rapid pulse or Goitre.

From the date of signing on to the time when the batch is delivered to the detention camps the recruits should be under competent supervision. They should be fed during the journey and food stores should be available every 24 hours. Simple dressings, sulphur and zinc ointments, and medicinal soaps should be readily available at the stores.

On arrival the new recruits should be placed in detention camps. They should be cleansed of vermin, and their clothes disinfected. Unmarked natives should be fed on special diet. They should be vaccinated on the day after arrival and a period of rest of 14 days should be allowed before they are put to work. This will ease the rough passage from the fatigue of the journey and fatigue of travel and discomforts, and less than acquire some immunity and acclimatization to local conditions and provides a period of quarantine during which any infectious disease they may have acquired on the journey may develop before they mix with the other labourers in the camp. The detention camps should be laid out on the same plan as the compounds. They should be situated at a distance and the new arrivals should not be allowed to mix with the labourers already on the estate until the period of quarantine is over.

Diet and Feeding.

This is a very important subject and bears a direct relationship to the output of work and health of the labourers.

The following is the minimum diet that should be allowed —

Mealie or Maama Meal	20 ozs. per day
Beans	3 ozs.
Soft	1 oz.
Meat	3 lbs per week
Potatoes (1)	4 lbs
Ground Nuts (2)	23 ozs.
Sugar	1 lb.
Fresh Vegetables (3)	24 lbs

- (1) May be replaced by mushrooms or bananas.
- (2) May be replaced by animal or vegetable fat, coconut seed, coconut or sim-sim oil.
- (3) May be replaced by lemons, limes, oranges or tomatoes.
- (4) Where fish is available a ration of fish, at the rate of 1 lb of fish for 1 lb of meat, may be issued, two days a week in lieu of meat.

Open air kitchens should be provided one for each group of 22 huts. For single natives messes should be formed and pica-nique cooks, one for 10 boys, provided. Permanent arrangements should be made for wood and water supplies to be available at the kitchens. The meat room should be fly proof and provided with zinc covered shelves. The animal should be killed and the meat cut up and forwarded to the compound in the late afternoon of the day preceding the distribution or at early dawn on the same day. The meat should be forwarded in clean sacks which should be opened in the meat room only.

The room should be in charge of an intelligent native and amply supervised by the compound manager. The meat room must permit of thorough cross ventilation and be kept in as clean a condition as possible. Burens can be issued rapidly if the size of bags with pockets for meat, etc., the body of the bag being used for flour, are fitted and passed through a gnetter to each native. Nine cooking pots should be supplied per kitchen.

Clothing.

In cold climates a woollen jersey and two blankets should be issued to each labourer.

Housing.

While all manner of elaborate arrangements can be made for housing labour, it is suggested that the following minimum standard should be adopted.

Single huts disposed in parallel lines with at least 15 ft. between huts and 30 ft. between groups. Hutmen should not be less than 50 ft. from the hut lines. The huts should be grouped into blocks covering areas which could accommodate 20, either each being separated from the other by at least 50 ft. and three huts in the centre of each block should be left out, thus giving actually 22 huts to the block, and not 25, in order to provide a space for a common kitchen. The entire block and latrine should be fenced in with barbed wire and the fence

should be 75ft. from the nearest hut, the latrines should be placed as near the fence as possible. Each lat should have a diameter of 12ft., should be 6ft. 6in. in height at the junction of the walls with the roof, which latter should be conical. Not more than 4 boys should be allowed per hut.

A compound for 1,000 boys should be 650ft. in length by 570ft. in breadth, and would accommodate 124 blocks of 32 huts with three rows of four blocks, 12 kitchens, 12 fuming pit latrines of 6 seats each, and 12 ditches.

Diagram No. 1 shows the dimensions of two sections and parts of others of the 12 blocks.

Washed wire fences of 6 ft. and 6ft. 6in. in height should enclose the compound and there should be a cleared area of 15 yards all round outside the fence.

Wells should have doors and should be covered. The direction of the gate should be so arranged that the doors do not face in the direction from which the cold winds prevail in the dry season.

The pitch of the roof should not be less than an angle of 45°. A continuous space of 1ft. should be left all round between the top of the walls and the rest of the roof at the narrow point. The floor should be raised ten inches to a ground level outside the hut. The floor and the walls up to a height of two feet, should be kept as impervious as possible by regular painting. Remedies should be done by using white washed washes and oil. The concentration of the work should remain constant and 22 huts in a day. Whenever possible gates should be left open to air.

Cells of latrines with cement floors and thick walls constructed up to a height of two feet and be protected by huts with mud floors and walls whenever they can be afforded.

For the treatment of the huts a permanent gang of 16 specially selected boys accustomed to thatching should be employed.

Cleanliness within Huts.

The standard for the huts of the preceding tables is completed, should be from 12 to 30 inches. The hut should be kept clean and airy and whenever possible the whole contents of the lat should be put out for burning in the sun. On one day of each week the floors and walls of the hut should be sprayed with an antiseptic before sweeping. The sweepings from floors should be placed in the dustbins.

The Maintenance of Cleanliness.

Cleanliness in the camp and area is very important, and in any compound of more than 1,000 must be under European supervision. A small sanitary staff with demonstrators and latrines allocated to each party should be stationed at intervals along the compounds clear of vegetation and by sweeping up and disposal of rubbish by burning in a simple pit of mud and/or. Two sweepers should be sufficient for a compound of the size specified.

Water Supplies.

As far as possible water should be obtained by overhead tanks with a pump attached for the whole works. If not, the water should be obtained from a hand pump or a well.

(1) Protection of the well surface by raising this above the level of the surrounding ground at least 1 foot, by providing an impermeable surface of concrete and cement around the well mouth, and sloping away from it, for a distance of 6ft. The well mouth should be guarded by a parapet of brick and cement to a height of 6ft. The well shaft should be lined with an impermeable wall of brick with cement mortar which expands to the impermeable stratum in those cases in which this is passed through to tap the supply beneath. In the case of a tube well the protection of the surface above is necessary.

(2) The water should be pumped, not dipped out, from the well whatever form is used.

(3) When the pump is established the mouth of the well should be properly covered in.

Nine gallons per head should be allowed for and 20 gallons per head for hospital patients — these quantities are for all purposes, cooking, washing, bathing, etc.

If piped water is available one tap for not more than four hundred natives should be provided.

The tap should be provided with a pressure device which cuts off the water automatically when released. Lead pipes or tanks should not be used to account be used.

The wells should be so placed as to be away from latrines and at least 10 yds. from any dwelling or hut.

Bath and Laundry Accommodation.

A cemented surface 30ft. by 15ft., divided into two compartments, one of 20ft. for men the other of 10ft. for women, draining off to a soakaway should be provided for bathing. For washing clothes a cemented area 30ft. by 30ft. forming the bathing platform, with brick and cement or concrete pillars supporting stout tree trunks, stepped off their back, across this, across this, across this, across this, from the ground to the upper surface of the trunks should be about 3ft. Taps for drinking water, washing, etc., are not available if a piped system is available but supplied at these situations at an rate of one for 100 adults. For bathing showers baths are best and if installed these for thousands natives are ample.

Fuming Pit Latrines.

Fencing is essential. The latrines should be —

1. Sufficient in number.
2. Easily accessible to natives living in any part of compound.
3. Inaccessible to flies and lend themselves to easy disposal of excreta.
4. Maintained in a condition of absolute cleanliness.

1 Seat for 15 natives, in compound.
23 " " " " while at work.

There should be separate latrines for females.

The points with regards to its construction are as follows:—

The trench should be 20ft. long, 3ft. wide and 15ft. in depth. This allows for a latrine of 6 seats of rather apertures. The seats

should be spouting seats of reinforced concrete slabs. For 12 latrines 72 would be required and would cost £90. A model may be seen at the Health Office, Dur es Salaman, and there are contractors there who make them at the price mentioned. The trench should be spaced over leaving only the necessary apertures. Each aperture should have a properly fitting cover. A well ventilated and should be built over the trench. Fifteen ventilating openings 6in. square should be let into the walls 7ft. above the floor at regular intervals. A flow of air into the shaft of the smoke chamber, see diagram No. II. A continuous stream of smoke should be maintained. The efficiency of the flue may be tested by the method taken in form 50. The pits with the necessary drainage and ventilation should be inspected at least once a day by the appropriate end of the ambulance number—see Therap.

With a trench of about 4 feet by 10 labourers, it takes a year for the depth to reach within 1ft. of the surface. When this occurs the dirt of the trench should be taken up and the contents run off into a small stream or dump or into a ditch and buried or burnt. This should be done as frequently as possible as otherwise with the exception of the soil, the larvae will be found to be present in the pits for 60 days.

The building at the entrance of 12 Fuming pits for a compound of 1,000 natives may be done at approximately £250 for the first year. The other year round expenditure for upkeep, sewage disposal, repairs, etc. would be about £50. There should be one constant person on duty.

A well kept fuming pit has the advantage that it may be maintained actually within the lines of huts, and if carefully supervised should be free from flies. This is of great importance in connection with the spread of typhoid, dysentery and other bowel troubles. It is essential to a access, leavies or other toilet paper be supplied.

When the pits are built full cover may be put over the top and the sewage disposed of by trenches. The pits are shown on plan sheet and 1/4 in. scale and the height of the pits of 4 feet 6 inches above the ground level of the trench. After the excreta is deposited the earth should be replaced and soil beaten down. Three quarters of an acre should be allowed for 1,000 persons.

In three months time the area may be tined up and used for cultivation, vegetable crops and when this is completed it can be used for growing vegetables.

The pits should be situated for some distance away from the buildings, it should be situated on well-drained ground and away from water supplies.

Hospital Accommodation and Routine Organisation for Prevention and Cure of Sickness.

Early treatment is essential, and good management and time keeping should detect any case of illness within twelve hours. The Medical Officer, by attending to the food issues when the natives pass in single file to draw their rations, can gain useful information from the condition generally of the men as a whole and of any individual ill-health.

The Hospital should not be built within 200 yds. of the compound. If a hospital is beyond a distance of half a mile, a medical hut should be provided at the compound.

The following buildings are required—

- Hospital wards and bathrooms.
- Isolation wards
- Operating room
- Post-mortem room
- Store rooms
- Dispensary
- Medical Office and Laboratory
- Disturbance chamber
- Laundry room or shed
- Kitchens
- Latrines
- Shedders for waiting patients
- Incinerator

The objects to be aimed at are good ventilation, exclusion of flies, and facility of cleansing.

The following should be the minimum distribution of beds per 1,000 natives—

36 beds in large wards.
12 " in small wards.
4 " in isolation wards.

In calculating the requisite number of beds for a compound all native folk-wards, wives, servants, etc. must be counted in besides the labourers and at least 5-3% of beds allowed for

Each ward should have the following dimensions—

The length depends upon the number of beds placed in a row side by side. If there were 6 such beds then to arrive at the length of ward required double the number of beds, multiply by 3 and subtract 1 from the result, which gives 35ft. this is allowing 3ft. for each bed and each interval between beds and an allowance of a foot away from each side wall.

Well constructed window and drain wards with cement floors and glass or other moving windows should be provided. To allow for proper washing of the floors without damage to the inner surface of the walls a single row of brick should be laid lengthwise into the lower portion of the inner surface of the wall and the cement carried upon this. The drains and angles should be rounded off and a proper slope provided for providing drainage. Cellar ceilings should be used to protect the ward from damp. Poles used in the construction of the wards should be painted with oil or sulphur to protect them from white ants.

The width of a ward should not be less than 15ft. for a ward containing two rows of beds, for one row on each side of a central alley way. The head of each bed should be 6in. away from the wall—6ft. 6in. should be allowed for each bed and 4ft. for the alley way. A ward with a single row of beds should not be less than 11ft. in width. From the floor level to the top of the wall inside the ward the height should not be less than 10ft. Lighting and ventilating areas in the shape of windows should not be less than a ratio of 1 in 10 of the floor space in square feet. Assuming the ward floor was 35ft. x 15ft.

	Lbs.	Oz.	£	s	d.
Exp. Paraffin	1				6
Caesaria Lathum	2				6
Park Co.ka Alcohol & Oils	3				3
Park's Jopca Co	15				5
Amphib. Glycerol	6				3
Amphib. Char. & Acids	10				0
Sol. Bichrom.	6				10
Ascorbic	5				2
Schell	9				4
Sol. Alum. in Spirit	14				16
Phosphat. Salts	12				0
Mercuric	40				0
Amel. Dextrin	2				4
Iron Salt	10				13
Maple	2				12
Dist. Salts	90				14
Bonopie	12				1
Dist. Acid Boric	2				0
Galla & China	60				4
Hydrog.	2				9
Ammon.	2				7
Sulphur	60				5
Zinc	60				5
Van. Resin	16				2
Zinc Oxid	4				13
Black Sulphur	60				0
Epsom	4				0
Ultraviolet	300				9
of Ph. Lab. 1/2 1/2 1/2 1/2	100				4
Subst.	1400				5
Salt. and Calcium	100				10
Quinine Ampules	144				8
Teles. Instruments					
Amorphous Iodine	1 Tubes				10
Amorphous Co	2				10
Digitalis and Stramon	12				5
Digitalis	12				5
Digitalis (H. Graham)	4				0
Mercuric Hydrochloride	12				6
Phosphoric Acid	1				2
Phosphoric Acid	2				0
Starch Soln	12				2
Emetic Reg.	38				0
Teles. Opt. Instr.					
Amorphous Sulph	2				0
Teles. Instr.					
Bandages Cotton	144				6
Loose W. C.	30				0
Plaster Paris	8				8
Suppositories	86				12

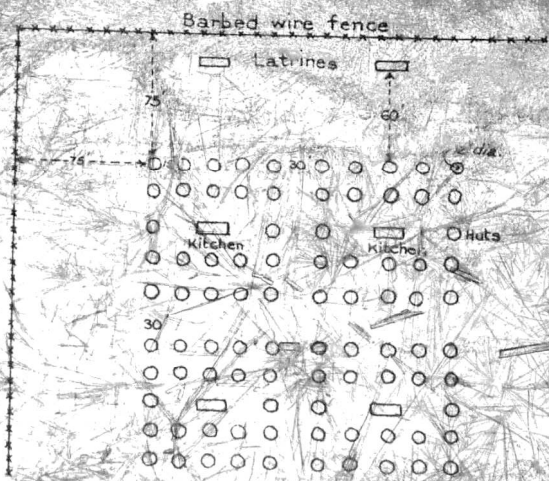
	Lbs.	£	s	d.
Surgical Dressings (Continued)				
Bandages Rubber	6			0
Gauze Cyanide	2000 yds.			21
Gauze Sterilized plain	240 yds.			1
Adhesive Plaster Spools 2"	12			0
Lin. Sterile	130 lbs.			1
" Plain	12			20
Waterproof Sheetin	240 yds.			5
Tapes Christie	20			1
" Jacquet	2			0
Tow carbolized	140 lbs.			3
Wool cotton, absorbent	400			23
" Cranie	80			5
Ligatures Gutgut Aseptic Tubes	6			0
Horse Hair Tubes	6			0
Silk Aseptic	6			0
" Hanks	12			0
" Reels	4			0
Silk Worm Gut Aseptic Tubes	12			1
Silver Wire	1 oz.			0
Equipment required per unit of 100 beds.				
Air Cushions	2			1
Anxona, Operating	4			2
Bandage Roller	1			0
Bed pans, B. I.	36			17
Boxes, Dressing	2			16
Feeding Cups, B. I.	2			0
Measures, Proctors "oz. 4 oz.	6			0
Scales and Weights, Dispensing, Pillar	6			0
Stretchers, Ambulance, wheel	5			11
Trays, Dressing Enamel K. S. Square	12			1
Tubing, I. R.	6			0
" 4 yds.	2			0
" 2 "	2			0
Food bins, I. G. 50 galls	1			0
Urinals, E. I.	36			7
" Glass	6			0
" Home	1			0
" I. R., Operating	4			0
Brighton E. I.	2			1
Microscope	1			47
Pyrex Stoves	3			3
Stretcher, E. I. "Fish Kettle" 16 1/2 x 6"	1			1
" Basket Instruments	1			1
Stethoscopes, Bimbral	2			2
Spirit Lamps brass	9			0
Srops, Razor	1			0
Sigsbee, Arm, Wood, angular	3			0

	Lbs.	Oz.	£	s.	d.
<i>Equipment required per unit of 100 beds (not included).</i>					
Splints, Arm, rape	2		1	10	0
Clives, leg	3 pairs		1	10	0
.. Leg with Foot piece	2		0	17	0
.. Listons, long	6		0	12	0
.. McIntyres	2		5	9	0
Thermometers, clinical	24		2	15	0
<i>Instruments required per unit of 250 beds.</i>					
Auriscopes, Brantoms	1		1	7	0
Cases, Amputation major	1		32	2	0
.. Pocket Instruments	1		4	14	5
Gauges, Jaques	6		0	9	6
.. Plate case	1		4	8	6
Crutches, pairs	2		0	4	5
Eye Instruments, case	1		14	11	5
Dressing Forceps	6		0	18	0
Dissecting Forceps	6		0	18	0
Spencer Wools Artary Forceps	12		5	2	0
Tongue Forceps	1		0	9	3
Tooth Roll	1		0	2	6
Gag Mouth	1		1	9	0
Infusion Apparatus Sallue	1		1	17	5
P. M. Instruments, case	1		6	13	6
Probes, short	6		0	5	0
Retractors	2		0		
Scalpel	12		3	10	0
Stomach Pumps, Siphon	1		0	10	
Syringes, Ear	1		0	3	3
.. Hippinsons	2		0	11	6
.. Hypodermic A. A. 2 cc	2		1	15	0
.. " 5 cc	2		2	6	3
.. " 20 cc	1		1	17	6
.. Needles extra for each	1		0	3	0
Spoons, Volkmitz	2		1	1	0
Tongue Depressor	1		0	6	3
Tourniquets	2		0	7	0
Trocar and Canula	1		1	8	6
Tracheotomy case	1		3	16	6
Surgical Needles, straight small	12		0	2	0
.. half curved small	12		0	2	0
Surgical Needles, curved small	12		0	2	0
.. straight medium	12		0	2	0
.. half curved medium	12		0	2	0
.. curved medium	12		0	2	0
.. straight large	12		0	2	0
.. half curved large	12		0	2	0
.. curved large	12		0	2	0

J. O. SHUSCORN

Principal Medical Officer.

No. 1



No. 2



Instructions concerning the Employment of Government Unskilled Labour.

Part I. Camps.

1. Camps. When labour is collected at a point where no camp exists the building of a camp must be the first consideration; the requisite number of men will be exclusively employed on building the camp until such time as a weather-proof and sanitary camp has been completed. The practice of giving labour a day or two to build their own huts, and of leaving to them the siting and standard of housing required, must be discontinued. Whenever practicable camps should be inspected and passed by a Medical and an Administrative Officer as fit for occupation, before they are occupied. Whenever possible a level, elevated, easily accessible, not too rocky, site near water, building material and fuel, should be selected for the camp. Dense ferns, halts, anophiles infected swamps, and heavily infected spiritum-risk areas, should be avoided. The sites chosen should be cleared to a distance of 300 ft. from the trees, brush and levelled.

The camp must be kept cleared, be well drained, and refuse collected and burnt daily.

A sweeper should be provided for each camp of 500 men. He should see that the camp is kept clean, the rubbish burnt and the latrines used in a cleanly manner.

Not more than 500 men should be located in any one section of a labour camp. Before vacating a camp, all huts and other structures should be pulled down and destroyed by fire.

2. Huts. The laying out and building of huts should be under competent supervision which should be exercised in order to secure uniformity and see that the recommendations made regarding size, structure, etc., are carried out. The huts should be well built from the ordinary materials such as reeds and grass and should be weather-proof. A standard of 180c. ft. per occupant should be observed. Huts holding not more than ten occupants should be 15ft. apart. Huts accommodating more than ten but not exceeding 25 labourers, should be 30ft. apart. A section of the camp accommodating 500 labourers should be separated from any other section by 75 yards.

Long quadrangular huts with rounded ends, closed at both ends but with a side entrance 6ft. x 4ft. near one end, and facing away from the weather, should be built. When poles of sufficient length are available, the huts may be of the lean-to pattern, i.e., an inverted V, the two sides being at an angle of 60° with the horizontal. The height to ridge pole should be 14ft., width 16ft., and the length, excluding the rounded ends the equivalent in feet to the number of occupants. These dimensions give an approximate standard of 180c. ft. per man.

3. Latrines. In camps occupied for a month or less, latrines should be provided at the rate of 3% of labourers. For long periods, 5% is essential.

The latrines should be situated at suitable intervals, and not all placed together. A distance of at least 30yds. from the nearest hut must be maintained.

Pits 10ft. deep, with a diameter of 4ft. and with an opening at the top 10ins. sq. by 8ins. broad, should be made. This opening should be at the top of a conical raised area sloping from the centre towards the periphery. Two large flat stones should be placed, one on each side of the opening for protection of the feet when squatting. Each latrine should have a 5ft. fence round it, a cleared patch 6ft. wide leading to it, and a 6ft. cleared area all round it. A roof for protection should be put up during the rains. Before any camp is evacuated the pit latrines should be filled in and thoroughly stamped down.

4. Clothing. Each labourer should have a blanket, and in cold climates a jumper and two blankets should be provided.

5. Inspection Book. In all labour camps maintained under the direct supervision of a European Official, an inspection book will be kept in which visiting officers should record the facts and date of inspection, and any comments favourable or unfavourable that they may wish to give as a result of their inspection. This book will be left in charge of the European Official, and must be available at all times for the use of visiting officers.

6. Living in Villages. There is no objection to labourers who reside permanently in the neighbourhood of the scene of employment residing in their own huts if they wish to do so.

Part II. Camp Overseers.

(1) There will be appointed in all standing camps of 50 or more labourers, one or more native camp overseers, according to the size of the camp.

(2) The duties of the camp overseers will be to maintain discipline in the camp, to supervise the work, the maintenance of the camp, and to see that the services enumerated above are efficiently and properly performed, and to report any complaints which may arise to the commanding officer, or to the District Medical Officer, or to the employing officer, or to a visiting officer.

Part III. Medical attention and Casualties.

(1) When a disease is employed in a camp, the camp overseer will be responsible for the attendance of men reporting sick and for a suitable report, and that they attend sick men, accompanied by this report, if the place required by the Medical Department. At the end of the month the camp overseer will forward the report to the District Medical Officer. When a camp overseer is employed in a camp, he will be responsible for keeping the above notes.

(2) The duties of the camp overseer will be to maintain discipline in the camp, to supervise the work, the maintenance of the camp, and to see that the services enumerated above are efficiently and properly performed, and to report any complaints which may arise to the commanding officer, or to the District Medical Officer, or to the employing officer, or to a visiting officer.

(3) The duties of the camp overseer will be to maintain discipline in the camp, to supervise the work, the maintenance of the camp, and to see that the services enumerated above are efficiently and properly performed, and to report any complaints which may arise to the commanding officer, or to the District Medical Officer, or to the employing officer, or to a visiting officer.

(4) The duties of the camp overseer will be to maintain discipline in the camp, to supervise the work, the maintenance of the camp, and to see that the services enumerated above are efficiently and properly performed, and to report any complaints which may arise to the commanding officer, or to the District Medical Officer, or to the employing officer, or to a visiting officer.

(5) The duties of the camp overseer will be to maintain discipline in the camp, to supervise the work, the maintenance of the camp, and to see that the services enumerated above are efficiently and properly performed, and to report any complaints which may arise to the commanding officer, or to the District Medical Officer, or to the employing officer, or to a visiting officer.

(6) The duties of the camp overseer will be to maintain discipline in the camp, to supervise the work, the maintenance of the camp, and to see that the services enumerated above are efficiently and properly performed, and to report any complaints which may arise to the commanding officer, or to the District Medical Officer, or to the employing officer, or to a visiting officer.

Sick Parades. Men who are fit for duty but require medicine, will attend sick parade and will incur no stoppage of pay for time thus lost, unless it can be shown that they have feigned unduly in reporting for duty.

Part IV. Labour employed when travelling.

(1) Porters carrying loads on Government account should not be given loads exceeding 50 lbs.; and loads exceeding this weight, which cannot be divided, should be carried on poles and carried by porters in the proportion of one man to every 100 lbs. weight.

(2) Porters should not be called upon to march under loads for more than 10 miles in any one day, except in cases of emergency, or in cases where there is no alternative. On a long journey marches should not exceed an average of 2 miles per diem.

(3) Porters should not be called upon to work during the midday hours (from 12 to 3 p.m.) except in cases of emergency.

(4) Porters should not be employed when other suitable means of transport are available either by the same or by an alternative route.

Part V. Hours of Work.

Normal working hours for men not engaged on piece work will be eight in number, but whenever practicable, piece work should be arranged; it must be borne in mind, however, that a raw gang on first employment cannot be expected to complete a task that they will be able to perform readily a month later. When camps are more than a mile from the place of employment, allowance must be made for the working hours of the assessment of tasks, for the time occupied in returning to and from.

Part VI. Rations.

(1) Rations should be issued according to the following scale:

Maise or Mitana flour	24 oz. per diem.
Meat	1 lb. twice weekly
Beans	4 oz. daily
Groundnuts	2 oz. daily
Fresh vegetables	1 lb. weekly
Salt	2 oz. weekly

When fish is available, an equal ration of fish may be issued, two days a week instead of meat.

(2) Kitchens and Utensils. Cooking pots must be supplied and cooks will be engaged 1 cook per 25 labourers if water supply is at a distance, or 1 cook per 50 if water is near; 1 kitchen per 100 labourers must be provided.

(3) Labourers fed on the scale given above may receive an advance of pay of 1/6 every Saturday, to enable them to purchase supplementary articles of diet, such as green food.

(4) Departments employing labour will make their own arrangements as to the report and issue of food. Purchase of food should be arranged in accordance with approved procedure.

(5) Care must be taken that food is properly cooked; one hour must be regarded as the minimum time for which rations should be cooked, while certain articles of food do not require considerably longer. The practice of mixing together various articles of beans requiring different rates of cooking, is to be avoided; in particular, 'mughi mawe' which requires several hours cooking, must never be mixed with other foods, though it is by itself an excellent article of diet.

(6) The best results are obtained by establishing a camp organisation for cooking, so that rations are issued ready cooked; this should therefore be done wherever practicable.

(7) Officers in charge of labour camps will inspect the rations issued, especially those stored in bulk, and they may be distributed with any supplies, they are authorised to order the substitution of others until such time as samples of the food can be inspected by a Medical Officer.

Part VII. Sanitation and Discipline.

(1) Whenever a camp is to be occupied for more than one month, the ground must be cleared to a width of fifteen feet, outside the fence, all round the camp, and a drainage ditch should be dug within the camp, to enable latrines to be constructed with a safe slope, but at a distance of 20 yards from the nearest hut. Important camps which are likely to be occupied for a considerable time should be constructed in accordance with the plan given in the Medical Department Memorandum on Care of *Native Labour*.

(2) The Camp Overseer will be responsible for overseeing the work of the sanitary gang, and for the cleanliness of the latrines. He will report to the officer in charge of the labour any man refusing to make use of the latrines, or fouling the ground in the vicinity of the camp.

Part VIII. General Provisions.

(1) Administrative Officers are reminded that the welfare of all labour working in their districts, whether imported or otherwise, is a matter for their concern and interest; it is therefore the duty of such officers to visit the labour camps in their districts as frequently as possible. The same remarks apply to Medical Officers, who should in particular satisfy themselves that sanitary and dietary arrangements are satisfactory, that the sick are being properly treated, and that the supply of drugs and dressings is adequate.

(2) It is recognized that the foregoing provisions will not be invariably applicable or feasible in cases where it is for some reason impossible to comply with them. The written sanction of the Administrative Officer and the Medical Officer of the District should be obtained as authority for non-compliance.

(3) The whole of the foregoing instructions must be regarded as applying to *gangs of 20 men or over*; in the case of smaller numbers the rules will be observed as far as may be possible.