

MOBILE DISINFECTION IN THE TROPICS AT NEGLIGIBLE COST.

By MAJOR A. L. OTWAY,

Royal Army Medical Corps.

Late Medical Officer of Health, Sekondi, Gold Coast.

WHILE holding the appointment of Medical Officer of Health, Sekondi, I thought it advisable to add to our powers of disinfection of clothing, etc.

I wished to increase not only our capacity for disinfection, but also to provide a means which should be :—

- (1) Efficient.
- (2) Cheap.
- (3) Robust.
- (4) Mobile.
- (5) Simple to use.
- (6) Would not deteriorate in use or in reasonable time.

If a disinfector can be produced which costs practically nothing, which any African can be taught to use in a few minutes, and which he cannot harm by ill-treatment, it is evident that a great need will be met.

Freedom from deterioration through rust or corrosion of metal, or of leather or cloth bags from dampness, is a very important point on the West Coast, and one to which serious consideration has to be given.

A "sack disinfector" costs some £75, but will deteriorate when not in use, however carefully looked after.

The "sack" will perish with dampness and age, while the burner and other parts are injured by corrosion. It is evident that to increase the number of disinfecting units at £50 to £75 per unit is a costly and might even be a wasteful business. Many might never be in action, or, owing to deterioration through the climate, they might be useless when called upon.

I saw lying about here the familiar two-ribbed forty-gallon oil drums, and it struck me that I might use them in the same way as I had done while Commanding No. 145 Field Ambulance in Palestine. I used the method then with success for disinfestation, and the drums can be procured here for practically nothing.

By the method which I am about to describe we have :—

- (a) A permanent increase in our disinfecting powers.
- (b) A number of *mobile* disinfecting units which can be transferred at a moment's notice by one-ton Ford lorries to any place that is threatened with infectious disease. To obtain the same "striking power" of disinfection by "commercial" forms of disinfectors would cost a large sum of money and they would be no more efficient.

There is now a permanent disinfecting station made out of two forty-

gallon drums at the Contagious Diseases Hospital here, and there are a further six drums ready fitted with lids and grids for use as a mobile unit. Should any outbreak of plague, etc., occur in Sekondi or district, the intention is to place them in charge of inspectors in suitable places, so that clothing, personal effects, etc., of the populace could be rapidly, efficiently, and without damage disinfected by steam.

Each disinfector consists of a forty-gallon drum and

(a) Holds rather more than $1\frac{1}{4}$ times the amount of the "sack" disinfector.



SECONDEE DISINFECTING STATION.

(b) Costs nothing to run except a little bush timber.

(c) Is thoroughly efficient, as is evidenced by the fact that it will boil an egg hard in fifteen minutes inside a bundle of blankets, thereby proving that the current of steam penetrates to every part. The "Test Egg" is placed under the topmost two layers of blankets—i.e., the part that remains cold longest.

(d) It can be run by any inspector after five minutes' instruction.

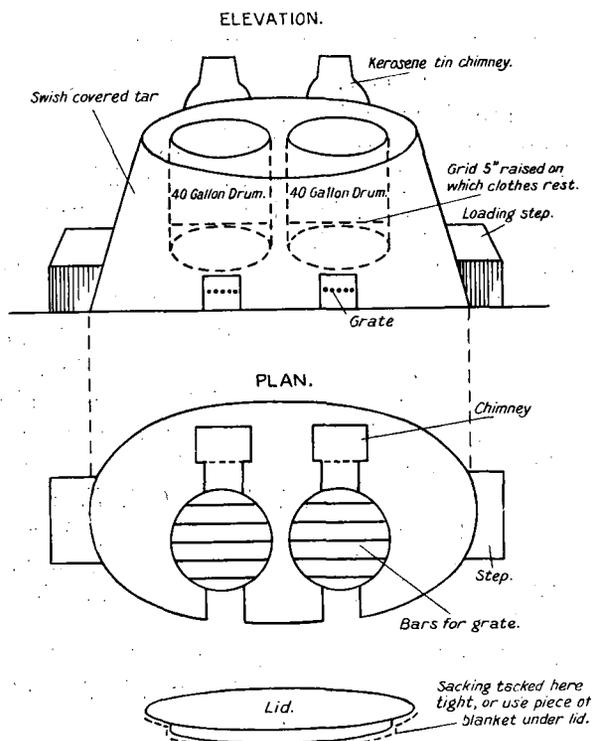
It is a type of disinfector that I can confidently recommend, being my own adaptation of the "Serbian barrel," as:—

(a) Being robust, it can be rolled down a hill, thrown out of a lorry—in

fact, dumped anyhow and anywhere without damage, for all practical purposes.

- (b) It is economical to work.
- (c) It is efficient.
- (d) It *cannot* get out of order.
- (e) A battery of them can be concentrated at any spot by rail or road, and can be working within half an hour of the time of arrival.

SKETCH OF DISINFECTOR MADE WITH 40-GALLON IRON DRUMS.



Two 40-gallon drums surrounded by dried tarred swish.
 Separate chimney for each fire, made of kerosene tins, and separate fire for each drum.
 Grate of iron bars.
 Water in drums to be not more than $2\frac{1}{2}$ inches or less than $1\frac{1}{2}$ inches in depth.
 Boil for fifteen minutes first, when starting from cold, before placing articles for disinfection.
 Time of disinfection—twenty-five minutes.

(f) Any reasonable number can be obtained in Sekondi, and doubtless in other parts of the tropical world, as these drums are used for carrying oil, tar, etc.

The approximate cost per disinfectant is about two shillings.

It will thus be seen that two of these, at the cost of a few shillings and a little unskilled labour (say four days' work for six men), will nearly do the work of three "sack disinfectants" costing over a £100.

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The rapid concentration of means of disinfection at a threatened area in the town might well be a critical feature in preventing an outbreak on a large scale.

The public confidence and *morale* would be raised by seeing something active being done in this direction.

There is no doubt that "the public" *like to see* disinfection carried out immediately.

If an outlying town or village be attacked, the ability to concentrate disinfectors there would very likely be decisive as regards the ultimate result.

The photograph and drawing explains the construction of the *permanent* disinfecting station I have made at our contagious diseases hospital.

The two drums are shown raised and jacketed with "swish," covered with tar and have permanent grates and chimneys, also a roof.

"Swish" is the mixed red clay and gravel peculiar to this place, which when damped and kneaded well, dries hard like a terra-cotta brick. Any other clay or earth would do as well.

The fires burn furiously and steam is rapidly raised. An ounce or so of izal is added to the water in each drum each time it is loaded. We thus get vapourized izal and steam penetrating the clothing, etc.

The notes on the sketch fully explain the construction.

It will be noted that the articles for disinfection are raised on a light wood grid on four legs, five inches above the bottom of the drum.

The photo illustrates the whole construction of a permanent station which was erected for me by No. 7248841 Cpl. J. Harper, R.A.M.C. (seconded), one of my Superintending Sanitary Inspectors, with African labour. He has carried out my ideas perfectly in every way, and produced a disinfector which is not only efficient, but is symmetrical and pleasing to look at.

It will be borne in mind that these, as the photo shows, are erected as a permanent structure, jacketed with "swish," roofed over, and tarred.

In case of emergency the "barrels" complete with grids, lids, etc., would be simply transported to the required spot, raised on stones and put into immediate action. More fuel would be required, but this is of no practical importance.

By the use of these drums, as I describe them, we have a great power of disinfection placed in the hands of any M.O.H. in such a country as this, and at a cost of practically nothing.

I have to thank Dr. G. Hungerford, the Honourable the Director of Medical and Sanitary Services, Gold Coast, Accra, for permission to publish this account, and also to thank him, together with Dr. G. J. Pirie, Deputy Director of Sanitary Services, Gold Coast, Accra, for the kindly interest they showed while I was making my disinfector here.