Archives 1—10,000—8-10-76.

(1) Number of pages 14.

(2) Date of repair 13.10.1981.

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

G.O. No. / B.P. No.	5354	Press. / Mis.
Dated	10. 9. 1877.	197 .

Not to be folded or roughly handled

G. O., 9TH JUNE 1877, No. 785, PUBLIC DEPARTMENT.

THE Surgeon-General, Indian Medical Department, will be requested to issue a circular to all Officers, not being Medical Officers, to whom supplies of disinfectants are sent from the Medical Store Depôt, containing instructions for their guidance in the use of the same.

(Signed) D. F. CARMICHAEL,
Chief Secretary.

CIRCULAR No. 73.

MEMORANDUM.

THE following notes on disinfection and disinfectants may be of use to Non-medical Officials, as suggested by Government in the order quoted above.

2. Speaking generally and succinctly the principal natural disinfectants are air, sun, rain, and vegetation; and the principal artificial disinfectants *cleanliness* and fire. The most important of all living agents in the contest with insanitation is the sweeper. Disinfectants, ordinarily so called, cannot act as substitutes for fresh air, for the sun's light and heat, for fire, for rain or for the sweeper. Yet disinfectants in their proper place are useful.

Natural and artificial disinfectants.

3. Deodorants are agents which destroy more or less effectually offensive odours. This they may do without influencing the materies of organic poisons. To remove a smell is one thing, to destroy a virus is quite another.

Deodorants.

4. Disinfectants are agents which decompose noxious gases and vapours, arrest putrefaction and fermentation, destroy the living germs of disease, neutralize organic poisons and favor the oxidation of putrescent matters.* Their power of destroying the invisible germs of disease has been doubted. The only agent which can rapidly and successfully destroy these germs is *fire*.

Disinfectants.

5. The principal disinfectants in common use are carbolic acid, the carbolates of lime and magnesia, chloride of zinc, sulphurous acid, chlorine and chlorinates of lime and soda, lime, charcoal, and *permanganate of potass*. There are many besides these, but our object is a practical not a scientific one.

6 Carbolic acid, carbolate of lime (Macdougall's powder and Norton's disinfecting fluid) chloride of zinc (Burnett's fluid), chlorinated lime and permanganate of potass (Condy's fluid) are procurable from the Medical Stores; green vitriol, sulphur,

Carbolic acid, &c.

* *Vide* Dr. King's Manual of Hygiene.

quick lime, and charcoal are procurable in most bazaars and tar may be purchased from the Commissariat Department at all the larger stations.

7. The most convenient disinfectant as regards bulk and the most efficient in action is probably carbolic acid. It can be used in the liquid form or in the dry form, as carbolic powder or carbolate of lime (Macdougall's powder). Solutions of carbolic acid in water are very efficient and handy. One per cent. of carbolic acid is said to put an end to minute organic life, and 2 per cent. to prevent putrefaction changes. A strong deodorizing and disinfecting solution would be one in which the proportion equalled 1 to 40. Crude carbolic acid, that is acid somewhat impure, is used in the proportion of 1 to 50. The solution is facilitated by immersing the vessel in warm water. Carbolic acid is added to limewash in the proportion of 1 per cent. Solutions of carbolic acid are used with advantage in deodorizing and disinfecting excrementitious matters and the vessels containing them, foul secretions and their containing vessels, cess-pits, dung-pits, native latrines in combination with thorough cleansing, clothes, bandages, &c., when soiled with communicable and foul discharges, animal refuse and decomposing organic matter; they are also used in sick rooms, railway waggons which have conveyed the sick, and in other kinds of transport, lavatories, dead-houses slaughter-houses, &c. Body and bed linen and articles of clothing are freely sprinkled with the solution and then immersed for some time in boiling water or, better still, submitted to boiling for some time. Corpses which are to be removed to a distance should be freely sprinkled with the solution and wrapped in cloths soaked in a solution of chloride of lime (1 to 20). Carbolic acid solution is also used along with oil or with the lather of soap to relieve the skin irritation in small-pox, and to destroy the virus in the emanations from and secretions of the surface. The carbolate of lime or Macdougall's powder is inferior in strength and in efficacy to carbolic acid. It is also much more bulky which is a drawback to its employment and transport. The earthy base of the preparation absorbs offensive effluvia and sets free the carbolic acid to arrest putrefaction and fermentation changes. (*King*). This powder is occasionally used as a substitute for cleanliness, if one may judge by the lavish way in which it is expended. In many cases dry earth well sifted might be used in its stead with advantage.

8. A valuable and at one time a comparatively cheap disinfectant procurable in most native bazaars is *green vitriol* the impure sulphate of iron called in Hindustani "Heera Kussees," in Tamil "Annabédi," and in Telugu "Annabhédi." A saturated solution of this salt is invaluable in disinfecting the excreta of cholera, of typhoid and of dysentery and in destroying the virus and fetor of other offensive discharges. Its power is increased by the addition of carbolic acid solution, and in this combination it is used freely in disinfecting latrines, cess-pools, drains, confined rooms, &c. It is also used in disinfecting clothing. Dr. King mentions a mixture of 8 ounces of sulphate of iron with 1 ounce of carbolic acid and 3 gallons of water as having been recommended for the disinfection of the clothes of small-pox patients.

Green vitriol, Sulphate of Iron.

9. *Sulphur* in the form of sulphurous acid, the gass evolved when sulphur is burnt, is a convenient agent in the disinfection of rooms, furniture, bed, and body linen, clothes, &c. The patient must be removed from the room before

Sulphur.

5359/2

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5354/4

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10. A solution of chloride of zinc constitutes the disinfectant called *Burnett's* disinfecting fluid. The solution contains about 25 grains to the drachm. In the strength of 1 part of the fluid to 100 or to 200 parts of water this disinfectant is used to purify sick rooms, wards of hospitals, prisons, relief-houses, fever-wards, cess-pools, drains, &c.

Burnett's disinfecting fluid.

11. *Chlorine and the Chlorinates.*—Chlorine is a valuable gaseous disinfectant; it is also used in solution. Chlorine destroys organic matter and odours. The gas cannot be inhaled owing to its irritating effect on the lungs. Chlorine is used to fumigate houses; the same result is obtained by moistening the chlorinates of lime or of soda when the gas evolves slowly. Chlorinate of soda is useful in the disinfection of clothes, being added to the water in which they are boiled. Chlorine is extricated by mixing 4 parts of commercial hydrochloric acid with 4 parts of the black oxide of manganese. Chlorine bleaches clothes when water is present; this should be remembered when the question is one of disinfecting colored tissues.

Chlorine.

12. *Lime.*—This agent is useful in the form of a hot caustic limewash in disinfecting furniture; as limewash with carbolic acid it is used in disinfecting the walls and floors of rooms. Lime should not be used in the deodorization and disinfection of urine. Lime mixed with tar may be used as a substitute for carbolic acid in cases where its application is suitable. Caustic lime destroys animal matter; hence its value in decomposing rapidly dead bodies, putrid animal matter and fæcal evacuations.

Lime.

13. *Charcoal.*—The deodorant power of charcoal is greater than its disinfecting power. In a state of fine powder it is efficacious in destroying the foul smells of discharges of various kinds by absorbing sulphuretted hydrogen and other gaseous emanations from organic matters. It is cheap and easily procurable, and may be used in wards, latrines, dead-houses, &c. At one time its value was over-rated; now it seems to be under-rated. It should be placed in light baskets and hung up to the roof. Animal charcoal is more efficient than vegetable charcoal.

Charcoal.

14. *Permanganate of Potass.*—The solution of this salt is called (Condy's fluid). Condy's fluid is used in the proportion of 1 to 100 of water in purifying rooms, walls of hospitals, prisons, &c. The offensive effluvia of night chairs, urinals, &c., are removed by

Condy's Fluid.

throwing into the vessel a mixture consisting of half a wine-glassful to a pint of water; it is used also to rinse out vessels which have contained foul secretions. In the strength of 1 to 200 parts it is used in disinfecting clothes. It oxidises animal matter and decomposes ammonia compounds. It is sometimes added in small quantity to suspicious drinking water for the purpose of decomposing any noxious organic compounds which may be present.

15. *Heat.*—Heat is a most powerful disinfectant. By fire all organic matter is destroyed. Its use is sometimes combined with that of disinfectants as in the disinfection of clothes soiled with specific matters: in other cases it is used alone, as in the case of baking clothes infected with disease germs in rooms and vessels specially adapted for the purpose; it is combined also with fumigation and proves a valuable aid in the disinfection of bed and body linen, clothes, &c. In cases of clothes contaminated with small-pox matter their total destruction by fire is, if not the most economical, by far the most efficient means of destroying that most communicable and dangerous of organic poisons.

Heat.

16. For further information on these points and on all points connected with Hygiene I would refer readers of this circular to Dr. King's valuable manual. The danger in these days is that of over-estimating the power of disinfectants and of under-estimating of the value of fresh air, pure water and of perfect cleanliness of person, clothes, and surroundings. Fumigation cannot be a substitute for ventilation, nor can disinfection be a substitute for cleanliness and the sweeper.

17. In conclusion, all are now familiar with the action and value of dry earth as a deodorant, and as [illegible] and in the treatment of surface sullage and pollution. The subject, however, need not be further alluded to in this place.

GEO. SMITH, M.D.,
Surgeon-General, I.M.D.

Office of Surgeon-General,
Indian Medical Department,
Fort St. George, 24th July 1877.

To

Revenue Department

Mis No. 1152

5354/5

Proceedings of the Board of Revenue

Dy. 20th August 1877

Read the following

From.

Secretary to Surgeon General

Indian Medical Departt.

Fort Saint George

To

The Secretary to the

Board of Revenue

No. 4752.

Dated 30th July.

Reference

Circular No. 70 dated 24th

July 1877. Subject

Forwards 200 copies for favour

distribution to officers in charge

of Relief Camps.

By order

Sd. Jas Keens M.D. Surgeon

for Secy to Surgeon General

Indian Medical Departt.

Ree

The Circulars to be
distributed as follows.

To Collectors of Bellary
and Coimbatore 50 Copies
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Cuddapah, Kurnool, Chingle-
put, North Arcot, Madura
and Salem 20 Copies each
and to Collectors of Kistna
South Arcot, Trichinopoly, Tin-
nevelly, Malabar & Coimbatore
& the Nilgiris 10 Copies each.
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application should be made.

/True Copy & Extract/
S. C. Walton
Sg. Secretary

To The Collectors of Bellary &c.
/True Copy/

Acctt
Ag. Secretary

To The Addl. Secretary to Govt. R.D.
with one Copy of Circulars.

the disinfecting process is commenced; the doors and windows should then be closed, the sulphur fired and allowed to burn out. A mullay with sulphur should be placed in each room. After 6 to 12 hours the house or hut should be opened, its walls scraped and then whitewashed (carbolic acid limewash), its earthen floor dug up to the depth of 3 inches, and rehaid with fresh earth well beaten down. In cases where the sick cannot be removed carbolic acid solution may be sprinkled on the floor and Macdougall's powder used. The solution is at times mixed with wet sand and placed in shallow mullays throughout the house. In connection with sulphur fumigation it may be mentioned that the following process is that recommended for disinfecting the linen of hospitals. Steep for 24 hours in a solution of chlorinated soda; boil for 2 hours; fumigate with sulphurous acid; wash thoroughly; fumigate a second time, and finally give the clothes a prolonged airing and exposure to the sun before reissuing them.

Burnett's disinfecting fluid.

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Lime.

12. *Lime.*—This agent is useful in the form of a hot caustic limewash in disinfecting furniture; as limewash with carbolic acid it is used in disinfecting the walls and floors of rooms. Lime should not be used in the deodorization and disinfection of urine. Lime mixed with tar may be used as a substitute for carbolic acid in cases where its application is suitable. Caustic lime destroys animal matter; hence its value in decomposing rapidly dead bodies, putrid animal matter and fæcal evacuations.

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15. *Heat.*—Heat is a most powerful disinfectant. By fire all organic matter is destroyed. Its use is sometimes combined with that of disinfectants as in the disinfection of clothes soiled with specific matters: in other cases it is used alone, as in the case of baking clothes infected with disease germs in rooms and vessels specially adapted for the purpose; it is combined also with fumigation and proves a valuable aid in the disinfection of bed and body linen, clothes, &c. In cases of clothes contaminated with small-pox matter their total destruction by fire is, if not the most economical, by far the most efficient means of destroying that most communicable and dangerous of organic poisons.

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16. For further information on these points and on all points connected with Hygiene I would refer readers of this circular to Dr. King's valuable manual. The danger in these days is that of over-estimating the power of disinfectants and of under-estimating of the value of fresh air, pure water and of perfect cleanliness of person, clothes, and surroundings. Fumigation cannot be a substitute for ventilation, nor can disinfection be a substitute for cleanliness and the sweeper.

17. In conclusion, all are now familiar with the action and value of dry earth as a deodorant, and as an invaluable agent in the management of latrines, and in the treatment of surface sullage and pollution. The subject, however, need not be further alluded to in this place.

GEO. SMITH, M.D.,
Surgeon-General, I.M.D.

Office of Surgeon-General,
Indian Medical Department,
Fort St. George, 24th July 1877.

To

throwing into the vessel a mixture consisting of half a wine-glassful to a pint of water; it is used also to rinse out vessels which have contained foul secretions. In the strength of 1 to 200 parts it is used in disinfecting clothes. It oxidises animal matter and decomposes ammonia compounds. It is sometimes added in small quantity to suspicious drinking water for the purpose of decomposing any noxious organic compounds which may be present.

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5354/8

Archives 1—10,000—6-10-76.

(1) Number of pages 4.

(2) Date of repair 13.10.1981.

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

G.O. No. / B.P. No.	5355	Press. / Mis.
Dated	10.9.1877	197 .

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