

the cause of the disease known in the East as "malignant pustule," in Bradford as "wool-sorters' disease," and generally when it occurs in the lower animals as "splenic fever." This is not a matter of conjecture or theory, but of absolute, logical, and scientific proof. We know also about this bacterium that the bacillus itself—that is to say, the full-grown bacterium—(which is a very giant amongst microbes, and which, when it attains its full stature, may even measure as much as $\frac{1}{1000}$ of an inch in length) is comparatively easily destroyed. It is the spore of the bacterium which it is most difficult to kill.

We know that carbolic acid will, if present in a sufficient quantity, prevent the development of the putrefactive bacteria in an organic fluid, and we infer that the microbes of infective diseases will have their activities also lessened by the presence of this chemical. But the carbolic acid, to be effectual, must be present in such a quantity as to cause death to these germs. It must also be present in such a condition that it can reach them. . . .

Now, if the poison, say of typhoid fever, be contained in a semi-albuminous motion, and strong carbolic acid be poured into the vessel containing the same, is it not extremely likely that some of the disease germs in the motion will be protected from the action of the acid by the coating of hardened material formed outside them—by the very disinfectant which is intended to destroy them? And yet I have frequently seen nurses in attendance upon patients with this disease who have considered that by pouring strong carbolic acid over the motions of the patient they were disinfecting these evacuations.

Now it seems to me that this mode of using carbolic acid is little better than sheer waste. What should be done is (1) to use the carbolic acid sufficiently diluted to enable it to penetrate the semi-albuminous constituents onto which it is poured, without so rapidly coagulating them as to protect the poison germs they contain; then (2) the motion itself should be subdivided in order to bring as much of it as

possible under the action of the disinfectant. This must, of course, be done beneath the surface of the disinfecting solution, which may need to be increased in quantity for the purpose.

I am accustomed, therefore, to advise that a solution of carbolic acid of about 5 per cent. in strength be previously prepared. This may be conveniently done by taking 8 oz. of crude carbolic acid, placing it in a jar provided with a lid, and which will hold one gallon, and then pouring about a pint of boiling water upon the acid, shaking the mixture well, and afterwards diluting it with cold or tepid water to the extent of one gallon. This solution, which contains 5 per cent. of the crude, or about 4 per cent. of pure carbolic acid, should be kept covered, and used as occasion requires. The strength of the crude carbolic acid used should be ascertained by analysis, and should be about 90 per cent. Should it contain so little as 38 per cent. of pure acid, as do some specimens sold, the proportion used to make the solution must, of course, be increased accordingly. About a pint of the solution should be placed in the bedpan, the patient's hips having been previously anointed with a little oil, and the motion should be received into the solution of disinfectant. By this means the risk to the nurse of contracting the disease from her patient is very much lessened; for the motion, as soon as it quits the patient, enters the disinfecting fluid, where for the time being it can do no further harm. It should not, however, be immediately transferred to the water-closet, but should be first broken down small, and then set aside in a covered vessel, with the disinfectant about it, to give the latter time to destroy the germs it contains. Three hours is probably sufficient for this purpose, if the carbolic acid has not been further diluted by liquid accompanying the motion, if there has been much liquid it is desirable to add a further quantity of carbolic acid solution, made for this purpose double the strength of that already described. I feel so much confidence in the use of this well-known disinfectant that I hesitate considerably about