

lated. It will be advantageous that the room itself should reek with such vapour, and by that means assist to arrest the immediate spread of mischief. But whilst it does that, and even destroys the growing seed, it preserves the dormant germ from decay. You will see, therefore, that to trust to carbolic acid as a means for destroying the progress of infectious disease is to trust to a broken reed. Spores have been kept for weeks in a five per cent. solution of carbolic oil, and have then been found capable of vigorous growth when transplanted to a favourable soil.

The same result has followed when they have been stored in alcohol. The use of spirituous liquors as a protection against the evils of impure water is no protection at all, and the scoff at total abstainers, that they risk their health by using water instead of alcohol and water, is based upon a fiction, not a fact.

The same arguments apply to some extent to sulphurous acid; though in a minor degree, there is an action following the application of this gas by which the chemical composition of albuminoid matter is more certainly changed. Oxygen is absorbed from the germ as well as from the air, and the growth of the germ is to some extent impaired; but  $\text{So}_2$  is irrespirable, whilst an active quantity of carbolic acid may be borne without injury.

#### HOTBEDS—"FORCING PITS."

I think I may now leave the treatment of infectious diseases, so far as they come within your cognisance, and pass on to the forcing pits in which they find their most active development—viz., the filth collection of human congregation. Your duties have reference to the removal of these, and to their active disinfection, as well

as to that connected with the cases of actual disease. It has been thought that disease germs would lose their vitality if suspended in water; but anthrax spores have been kept in solution for months and have not been destroyed. If they are in motion, if they are encouraged to grow, and if whilst so growing they come in contact with oxygen just escaping from its combination with carbon, as occurs in this disengagement by the vegetable kingdom, there is death to the spore; but they may not grow—they may be laid and preserved. The most certain death is that which arises from its being brought into immediate intercourse with the spongioles of plant life. Wash down, and let the spore find its way to the sewage farm, and there is an end of your trouble, provided the farmer is made to grow so many tons of produce for so many tons of sewage. But it is not always possible to wash away the evil; and as sewers are at present constructed—viz., as a standing disgrace to the constructing engineer—whilst they are sewers of deposit only, whilst they are not much better than elongated cess-pools, and not self-cleansing sewers in which deposit shall not take place, it seems to be absolutely necessary that disease germs should be destroyed before they find their way into the sewers at all. Hence all excreta from infectious cases should be disinfected before they enter the sewers. The best disinfectant for this purpose is the sulphate of iron—green copperas, as it is sometimes called. It is useless suggesting re-agents which are too expensive for the purpose. Sulphate of iron is cheap, and it is effectual provided sufficient is used. Next to that we have chloride of lime, in which the development of chlorine