

extends deeper, and is entirely out of the reach of any germicide; and though these weak solutions might kill the germs on the surface, we do not need to kill them if we are to wash them out, and plain water will sweep them out just as well as a weak germicide. In my own experience with Halsted's method, it did not seem to make any difference whether corrosive sublimate were added or not—the patients recovered as soon one way as the other.

Surely so weak a solution of permanganate can have little germicidal power for the short time it is in the urethra, and might just as well be omitted. In some of my own cases there was so much complaint of the pain that the drug was omitted, and the patients seemed to progress to recovery more rapidly on plain water. It is, then, justifiable to doubt the efficacy of any germicide in irrigation, and to assume that the good results are due to washing away the germs and toxins, leaving the tissues to destroy the rest.

The gonococcus is such a frail exotic, so difficult to keep alive in artificial media, that it was long believed to be a pure parasite, incapable of growth outside of the host. Almost anything can be expected to kill it—chilling, drying, etc.—and we know that the disease is rarely transmitted except by direct transfer from host to host, and that if it is transmitted by mediate transfer, it is done shortly after the germs have left the preceding host, the medium introducing the fresh, moist germs, as by moist towels, basins, etc. It is perhaps unknown for the dried, chilled germ to infect. The lower thermal death point is not known, but the germ will not grow if kept colder than 79 deg. F. Its range is said to be 86 deg. to 94 deg., and above 100.4 deg. it will not grow at all. Every degree beyond the growing limits must weaken the gonococcus, even if the effect is not fatal. Neisser demonstrates that 113 deg. F. destroyed the virulence and reproductive power of the germ, though we must presume that it must take some time to do this, for Sternberg shows that 140 deg. F. is fatal in ten minutes. Here, then, is a method of treatment better than germicides, for we can surely warm the deep gonococcus to a temperature of 113 deg. F. by copious irrigations. Perhaps Valentine's brilliant results are in part due to the heat of the fluids used, and surely the good results of baking gonorrhœal points in arthritis must be due to the germicidal power of the heat.

In gonorrhœa, then, it is a simple matter to cleanse with a fluid as hot and unirritating as possible, and as often