

for bow-leg, or any other serious operation of complacency upon a patient advanced in tuberculosis, more particularly if he had any reason to suspect involvement of the kidneys.

We now come to consider what are the best methods of treating local or surgical tuberculosis. As tuberculosis is a constitutional disease, and its local manifestations merely incidental, we naturally and rationally seek to combat the local by attacking the constitutional condition. But obviously it is no part of the province of this paper to deal with the multifarious question of the constitutional treatment of tuberculosis. Suffice it to say that no plan of treatment has hitherto been followed that offers any reasonable hope that we may yet be able to cure the local manifestation without resorting to local measures. But it may be accepted as an axiom that any line of treatment that will be beneficial to the general disease will also be salutary to its local manifestation.

There is, however, one method of treating the general condition that I shall briefly allude to, because—though I do not know that its originator claims this for it—I can conceive that it may be useful in the topic lesions. I refer to the possibility of destroying the bacillus by the direct application of heat, as first advocated by Weigert, I believe within the last few months. He bases his treatment upon the fact that the tubercle bacilli are peculiarly susceptible to influences of temperature; their vitality is lowered by a temperature of 101.3° F., and their development ceases at a temperature of 107.6° F. In Weigert's apparatus the patient breathes air which is so hot that the expired air has a temperature of 112° F. Further than to state that the results of this method of treatment have been in some cases extraordinary, I shall not pursue the subject. Now it is but a short step from this to the application of hot water—medicated or sterilized—to the local lesions. Ordinary native albumen coagulates at about 158° F., and since the bacilli cannot withstand 108° of heat, it would seem a simple matter to treat a circumscribed lesion. We must not lose sight of the fact, however, that most of the bacilli, and in fact all the active ones which are doing the damage to the system, are buried at varying depths in the tissues, and these tissues are, to say the least, not good conductors of heat.

But hot water will, I apprehend, find its greatest usefulness in destroying the bacilli which may remain upon the surfaces of the wound after the surgeon has removed all that he can by cutting operations. Barker uses water at a temperature of 105° - 110° F. instead of the ordinary antiseptics, and his good results may be largely due to the destructive action of the heat upon the bacilli. It would be interesting and instructive to know what degree of temperature of the tissues could be attained at varying depths from the surface by the local application of heat, but so far I have not been able to find any data on this point.

It is, I need scarcely say, impossible in this short paper to even mention all the methods that have been adopted in the treatment of surgical tuberculosis. We shall briefly notice two or three local measures which have been successful, or which, though still on probation, give promise of success, and then pass on to the treatment by operation.

With the exception of a few who hold that lupus (which is in all probability a tuberculosis of the skin or mucous membrane) may be successfully treated by parenchymatous injections of bichloride, advanced surgeons have, I think, practically abandoned this mode of procedure in non-caseating lesions. But after caseation or liquefaction of the tuberculous matter has occurred, I think there is abundant evidence to show that injections of solutions of iodoform may be very useful indeed. Since the diffusion of the ether throughout the tissues was frequently accompanied by a good deal of pain, the ethereal solution of Mosetig-Moorhof has been displaced by the glycerine emulsion of Billroth, Andrassy and others, which contains ten per cent. of iodoform. The high specific gravity of this emulsion, as pointed out by Barker, enables it to gravitate to the most extreme ramifications of the cavity. In order that this may occur, the position of the patient should be changed every three or four hours, or less if any particular position were found to be uncomfortable, in order that not only the prevailing dependent, but all other parts also might come in contact with the medication. The method is simply to draw off as much fluid as possible, and then inject as much of the emulsion—40 to 50 grms.—as is thought judicious. I