

have an acute disease which produces its most serious effects by its toxin, and steadily progresses to either rapid cure or a speedy death. The rationale of the operation of the specific antitoxin in diphtheria appears to be that it neutralizes or, at least, renders the toxin relatively innocuous until nature has time to assert itself, and the disease comes to an end. The bacillus of tuberculosis is generally believed to be a rather strict parasite, and it finds a particularly suitable soil for its growth in animal tissues. It is conceivable, then, that, even if we were able to counteract its toxins, the germ might still be able to grow and produce its local destructive effects. And, in fact, practical experience with antitoxins has shown that they are efficacious in direct ratio to the virulence of the diseases in which they are employed.

With regard to the treatment of tuberculosis, it may be just mentioned, that there are three main methods of treating the disease.

1. The drug treatment, which in some quarters seems again to be coming into vogue.
2. The specific or serum treatment.
3. The climatic treatment.

The last mentioned of these is the one which at present has most firmly established itself in the mind of the medical profession, and, certainly, the results achieved, namely, forty to sixty per cent. of cures in suitable cases, in default of anything better, are encouraging. It is, however, not with this but with what is called "serum-therapy" that I wish to occupy myself at the present time.

The term "Serum-therapy" has been used somewhat loosely in the past to denote the attempts at specific medication by means of toxins and anti-toxins. An important school, lead by Koch, seeks to produce immunity and cure the disease by the use of certain poisons derived from the tubercle bacillus, or chemical modifications thereof. In this category belong the various tuberculins, oxytuberculin, tuberculocidin, antiphthisin. Here the idea is to stimulate the cells of the body to the elaboration of antitoxic substances which will neutralize the poisons produced by the bacilli. Everyone knows how visionary this has proved. Strictly speaking, serum-therapy is more correctly applied to the method of treatment by antitoxins. In this case experimenters have endeavored by the injection of extracts of the tubercle bacilli, or in some cases the living attenuated germs, to produce immunity in some of the lower animals, and to use the blood serum of animals thus fortified in the treatment of human tuberculosis. It is with work of this last class that this paper will exclusively deal.