

last paper on Bacillen Emulsion he says :—"One increases the dose very rapidly in order to obtain very pronounced reactions, with elevations of temperatures of 1.5° to 2° C. As soon as a strong enough reaction is obtained, the intervals must be lengthened to from six to eight days or more."

"From my own experience with tuberculin I have formed the impression not only that fever reactions are not necessary to obtain good results, but that although occasional moderate reactions are unavoidable and apparently do no harm, every effort should be made to avoid them. If frequent and violent, they have a bad effect on the patient's general condition and are by no means free from danger, as was shown during the early history of tuberculin treatment, the danger being the production of continuous fever, cachexia, and increased activity in the disease.

The best method has seemed to me to begin with very minute doses— $1/10,000$, or even $1/20,000$ of a milligram of solid substance Koch's Bacillen Emulsion, or a $1/100$ of a milligram of old tuberculin—and increase so gradually and at such intervals as to carry the patient to full doses with as little disturbance as possible; and by taking sufficient time, most patients can be taken through the entire treatment with but occasional and moderate reactions. At the slightest evidence of intolerance, as manifested not only by the patient's temperature, but by his symptoms, by marked irritation at the site of injection, or depreciation of his general condition, the intervals between the injections should be lengthened and the dose diminished for a time. Care should be taken never to inject after a reaction until all effects of a previous reaction, both on the patient's temperature and general condition have entirely passed away. I have also formed the impression that the treatment should be extended over as long a time as is needed to avoid reactions, no matter how long that may be, and that time is an important element in obtaining the best results. Six months of treatment is almost always necessary, and a year or more would be better in many cases."

Keeping in mind the foregoing, you can readily appreciate the advantages of combined toxine and antitoxine treatment. Success will follow in the path of greatest caution in the dosage. Begin with extremely small doses of tuberculin under cover of protective antitoxine injections. To my mind the injections of tuberculin are given at too short intervals. The first five or six inoculations should be given at intervals of six to eight days, gradually lengthening the periods between each to four and even six weeks. The duration of the treatment should not be less than six months, though I usually carry it over one year, repeating it in another series after six months of rest.