

time. From that date until January 9th, he had five injections of five mg. each, to which he reacted strongly. Since the last injection there had been continued fever till death, on the morning of the 21st. The autopsy showed old consolidation of the apices, with small caseous spots in the right apex, and the remains of pleurisy, but *extensive miliary tuberculosis of the lungs, spleen, liver, and kidneys, of quite recent origin.*

The inference one is obliged to draw from Virchow's statement of the case is that the treatment attacked the latent tubercular deposit in the right apex, broke down the protective wall which had been built up by a natural healing process in the lung, and admitted the imprisoned bacilli to the circulation in such a way as to produce the innumerable new centres of development throughout the body referred to.

Ewald continued the discussion, claiming that Guttman's views were too optimistic. He did not deny the numerous improvements recorded, but the reverse side of the medal shows an undoubted tendency to hyperæmia, and a possible metastis. In regard to the latter, he cited one case of miliary tuberculosis of the pleuræ, which he did not venture to attribute to the treatment till after Virchow's utterances. Personally, he did not yet care to decide between "post" and "propter hoc," but he obviously leaned to the latter view; in certain cases where there had previously been no fever, the injection had given rise to a hectic condition which was undoubtedly unfavorable. He therefore felt in relation to a patient desiring the Koch treatment as a surgeon does before a serious operation—the issue may be *very* favorable, but it is *uncertain*, even in incipient cases. For the latter, therefore, he would be inclined to prefer other methods of treatment, such as the creasote treatment advocated by Frantzel, from which favorable results, without any disagreeable consequences, have been obtained.

Since Virchow's statement, a certain Dr. Liebman, of Triest, claims, in to-day's *Berliner Klin. Wochenschrift*, to have found tubercle bacilli in the blood after the Koch treatment. Ewald, who is the editor of the journal, has failed to do so; and I can hardly believe that this would have escaped the observation of numerous workers who have been studying the

condition of the blood during the treatment in Berlin.

At the same meeting Dr. Israel, surgeon to the Jewish Hospital, stated that he had found that the injection did not invariably attack tubercular issue; that when it did it sometimes occasioned surrounding inflammation instead of necrosis of the tubercular tissue, and that the therapeutical value in surgical cases remains yet to be determined.

After such a meeting it is not surprising that there should be a strong revulsion against the Koch treatment—yet that it is not entirely justified is evident from utterances of distinguished surgeons like Bardeleben and v. Es-march, and physicians like Baumler and Fur-bringer.

It is not surprising also that Koch should, under the circumstances, be nervous and upset, and yet he has reason to be satisfied with the progress of the cases treated under his own immediate care. The antagonistic views of a part of the profession have undoubtedly caused the Government to hesitate about making the remedy a State monopoly; but the preparations for the new institute for infectious diseases go on apace. I shall shortly send you a description both of the clinical and scientific departments of the same.

Koch's disclosure of the other day was perhaps hastened by Virchow's address; he may be more explicit after a paper by Hueppe, of Prag, which appears to-day, on "The Nature of Koch's Lymph," and which declares that the lymph is a mixture of metabolic products of the tubercle bacilli, with the remains of the unaltered nutritive solution in which the culture was grown. He says that every one acquainted with the use of technical language would take it for granted, from what Koch said, that he had used a solid nutritive medium, and had extracted with forty per cent. glycerine the bacilli scraped off from it; but he urges that such an extract could never contain the thirty per cent. pepton present in Koch's lymph, and states that he has been able by evaporating a six weeks' culture in glycerin Pepton Bouillon to arrive at a lymph similar in external appearance and chemical reactions to Koch's, and giving similar effects with the same doses on tuberculous guinea-pigs. He has, however, not experimented with his lymph on man.