

Selected Article.

THE NEW TUBERCULIN OF DR. KOCH.

The following translation and epitome of Dr. Koch's recent article in *Deutsche Medicinische, Wochenschrift*, April 1, 1897, in the *Medical Review*, conveys the essential portion of this interesting communication.

Prof. Robert Koch has always thought that there existed two kinds of immunities. The one is the immunity against chemical toxins: the animal, as in tetanus for example, is vaccinated with a serum antagonistic to the tetanic toxins; there remains during a more or less lengthy period of time a resistance against the action of these toxins. After such an immunization large quantities of the toxins can be introduced into the circulation with impunity. On the contrary, the serum has no action against the bacilli of tetanus themselves, which can proliferate and prosper in an immunized organism.

The other immunity, of which the type is seen in the typhoid fever and cholera serums, is an anti-bacterial immunity with opposite properties to the antitoxic serum: the animal immunized with the virulent cultures destroys very rapidly the specific microbic organisms which are introduced after the immunization. On the contrary, the animals remain sensitive to the toxins which, in large doses, cause death.

In tuberculosis it is necessary to determine which kind of immunity is proper and best. Dr. Koch has determined, in acute miliary tuberculosis of men, as well as in experimental tuberculosis, that the bacilli, which are present in enormous quantities in the organism, suddenly entirely disappear at various intervals. For a variable length of time no bacilli can be detected. He has explained this disappearance of the tubercle bacilli during the evolution of miliary tuberculosis by supposing a natural immunizing process.

This fact, which proves the existence of a tubercular immunity, brings out at the same time one of the essential conditions. The immunity manifests itself when the organization is most thoroughly saturated with bacilli; when all the organs and tissues are filled with bacilli and their products. It seems that immunity only begins after the tissues have absorbed and digested innumerable bacilli.

If one wishes to realize experimental immunity, that is, if one wishes to immunize against tuberculosis, it is necessary to find a process which permits of an introduction in the