

is very susceptible to this germ, be inoculated with the staphylococcus pyosepticus it may be rendered refractory to its action by intraperitoneal injection of dog's blood, an animal that possesses a natural immunity to the infection. This suggested to their minds that the same thing might hold good in tuberculosis. Without entering into details, the chief conclusions at which they arrived were:—

(1) That in animals the subjects of experimental tuberculosis the injection of dog's blood will arrest the disease provided the germ is not too virulent, or will retard it if it is very virulent.

(2) The serum of a dog injected into a healthy rabbit will prevent the development of experimental tuberculosis subsequently.

(3) The serum of a dog previously inoculated with tuberculosis when injected into rabbits already tuberculized will aggravate the disease.

These observers did not believe that dog's serum possessed a specific curative action in tuberculosis, although it seemed to have a powerful action against some of the effects of the germ and exerted a tonic action on nutrition. The special credit due to Héricourt and Richet lies in the fact that they were the first to see the possibility of producing by the injection of tuberculous virus a specific means of combatting the disease. It was Maragliano who first demonstrated by scientific proofs that a tuberculous antitoxin did exist and applied it to the treatment of human tuberculosis. His results were given to the French Congress of Medicine at Bordeaux in 1895, and his subsequent investigations have proved to be so brilliant and painstaking that a brief reference here will not be out of place. Koch's original tuberculin was prepared by heat so that it did not represent the full toxic properties of the bacillus, for as Auclair has shown certain volatile poisons are given off in the course of preparation. These substances have been shown by Maragliano to cause convulsions when injected into rabbits. The glycerine also used in the preparation is toxic. Maragliano therefore uses a watery extract of the bacilli. He makes use of two toxins: (a) prepared by concentrating a culture of the bacilli over a water bath at 100° C. for three or four days; and (b) a culture filtered through a Chamberland filter at the room temperature and concentrated in a vacuum at a temperature less than 30° C. For inoculation purposes he uses three parts of a and one of b. This mixture is injected into horses beginning with a dose of two milligrammes per kilo. of the body weight and is increased gradually one milligramme a day up to forty or fifty. The injections are stopped if the animals show signs of fever or emaciation until recovery has taken place. The whole process is spread over about six months. Before using the horse serum thus prepared Maragliano waits three or four weeks until the urine is free from toxic