

without pressure. This active principle, when subcutaneously injected into tuberculous animals, caused a febrile reaction. The tissue in the immediate neighborhood of the tubercles became hyperaemic, and the symptoms manifested resembled those produced by the introduction of the original mass. This was published in the *Medical News* of Philadelphia, January 17th, 1891.

On May 15th of the same year I had the honor of delivering the annual address before the State Board of Health of Pennsylvania, on the occasion of the Fifth State Sanitary Convention, and selected for my special theme, "Tuberculosis, Its Causes and Effects, Its Treatment and Prevention." In this address I touched upon the question of the relationship between the bovine and the human bacillus of tubercle, and expressed myself as follows:

"Scientifically it will be of particular interest to have the bovine and human tubercle bacillus differentiated, yet for all sanitary purposes we will have to consider the tubercle bacillus of the cow accompanied with it nidus as being destructive to human life; for it is well established that the bacillus of man will produce in the lower animal economy—such as the cow, dog, guinea pig, opossum, etc.—the deadly malady, and that the bacillus of the cow will also bring about a like disturbance in the same line of animals; and, further, bacilli from the rabbit, etc., will in turn reproduce tuberculosis in the cow."

The bovine tubercle bacilli are much more virulent in the lower animals than those of human origin.

In a paper entitled "Possible Relationship Between the Tuberculous Diathesis and Nitrogenous Metabolism," read before the Academy of Natural Sciences of Philadelphia, November 26th, 1894, I called attention to the antagonism of nitrogenous products of the tubercle bacillus, and to its propagation in the tissues of human beings. The idea that those who suffer from gout rarely develop tuberculosis is an old one, and apparently not without substantial foundation. Hence I argued that, as in gout the tissues are overcharged with metabolic nitrogenous products, the direct introduction of such matter prepared in the laboratory of Nature might bring about a condition in the tissues of those suffering from tuberculosis