

been the true cause. But recently reasons have been advanced to show that the infection of the milk has been from the cow direct, that is, that cows are liable to a similar disease. Dr. Klein and Mr. Power, of London, have found that certain suspected cows on a farm at Hendon had a condition of the skin, as well as general disease of the viscera, resembling disease of the corresponding organs in acute cases of human scarlatina. Inoculation from the diseased tissues into calves produced a similar disease in its incubation and general anatomical characters; further, from the cow a micrococcus was isolated by cultivation different from any hitherto examined. With such cultivated micrococcus he had produced in calves a disease, which in its cutaneous and other lesions, bears a very close resemblance both to the disease which was observed in the cow, and to human scarlatina. Recently Dr. Klein found in acute cases of scarlatina, there was present in the blood of the general circulation a species of micrococcus, which proved to be in every respect identical with that obtained from the Hendon cow.

Again, from two cases of human scarlatina, calves were inoculated, and infected otherwise, and all the calves developed disease identical to that produced in the calves infected from the Hendon or first spoken of cow.

A high authority, *The Lancet*, states: "That since the publication of Dr. Klein's lecture, the subject is, so far as its scientific position is concerned, outside the region of controversy. The evidence conclusively establishes that the cow malady caused human scarlatina." And again it says, "It is impossible to exaggerate the importance of these observations in the saving of human life, which they may ultimately effect when further knowledge of the bovine disease enables it to be more closely recognized, and its nature better understood." Since these London reports, confirmatory reports from Glasgow have been made of a similar tenor. These investigations have only been reported within the past year, and it would be too soon to rely upon these being conclusive, and indeed they were quickly disputed, and much further observation will be necessary before the truth or otherwise can be positively determined; nevertheless they indicate the direction in which valuable information may be sought, for since the discovery that many of the specific diseases depend upon the presence of bacteria of different forms, it has been shown that the lower animals are liable to, and affected with, the same diseases as human beings, and it is surely reasonable to suppose so, even without microscopical proof; for it is evident to all that they have the same organic, functional and inflammatory maladies as human beings. If these infectious diseases of the same manifestation and nature prevail in animals, and notably so in the domestic animals, it is not unlikely that these diseases should be communicated from animals to man, and from man to animals, from time to time. We know that such is positively the case in vaccinia, as well as glanders, splenic fever, hydro-

phobia and others. As proofs accumulate of methods of communication and forms of disease, and of the animals that are liable, preventive measures may be adopted which will control, in a great measure and perhaps wholly, the propagation of such disease and the extermination of it.

Very much attention has of late been directed in Great Britain, the Continent and the United States, to the relation as between man and animals of Tuberculosis, and so great is the interest and importance of the question, that an international Congress is about to meet or may be in session now in Paris* for the purpose of considering this subject alone. The question is not new, for the existence of tubercle in cattle was known in the last century and perhaps earlier, and at different periods since then, it has excited attention among veterinary surgeons. Among them Fleming in England and Walley in Scotland, have done all they could to bring the subject before the public as well as the medical profession, while members of our own calling assert that the best work has been done by themselves. Although I venture to draw your attention to it now, I am not sure but it has been brought before the public here through the press, but anyway my impression is that it has received very little attention or investigation from medical men, and the dangers of bovine diseases as to the use of the meat and milk, have not been much considered here. As to the existence or prevalence of the disease in cattle in this province, I am not in a position to speak† though many here to-day may know something as to that, but its existence to an alarming extent in the neighbouring State of Maine, as well as in other states of the union, is beyond question.

The discovery by Koch of the bacterial agent of tubercle in the bacillus tuberculosis, and the discussion caused thereby, has no doubt been the cause of the new interest in the question as affecting cattle as well as man. The existence of the bacillus as the cause of phthisis may be doubted by many, but I think it is beyond controversy. A high authority in the United States said last year, "Five years have elapsed since the contagion of tubercle was alleged to be discovered by Koch and nearly all observers have confirmed his views." There is abundant proof that human subjects readily yield to the bacillar poison who have previously been in perfect health, the bacillus is always present, and we must accept it as a full explanation of phthisis."

That phthisis is infectious both in man and animals can no longer be doubted since Koch's discovery, and medical and sanitary measures in the case of phthisical patients, are based on that assumption by all authorities and most practitioners; and it is just here that the value of investigation into the cause of disease, and consequent preventive measures, should be appreciated and intelligently acted upon. The identity of this bacillus of phthisis, with the agent which causes phthisis or tuberculosis in cattle,

* The above Congress has met and was the means of a very thorough discussion, and important conclusions.
† See italics further on in address