

monia. This was the fundamental fact which led Dr. Klein to investigate the subject, and the questions to which an answer was attempted to be given were as follows: Is this disease of the cats the same disease as diphtheria in the human subject? Is it caused by the same pathogenic micro-organisms? The results of Dr. Klein's experiments with cats correspond to what Löffler and others found in human diphtheria; in which the organisms are found only in the false membrane and near its surface, and not in the blood or in any other part of the body. The conclusion is that the general symptoms of diphtheria are due to a chemical poison manufactured by the bacillus in the false membrane or other local lesion. The disease and lesions as caused by the bacillus, separated from human diphtheritic membrane, is the same as that which is found in cats who become ill with a peculiar disease when diphtheria is epidemic; and, moreover, from this natural disease in cats, the same bacillus was found and separated as in human diphtheria. There seems no reasonable doubt, therefore, of the identity of the two diseases, an identity which is well confirmed by the remarkable kidney lesion observed in the cats.

Important however, as this connection of the domestic cat with the etiology of diphtheria, the experiments on the action of the diphtheria bacillus on cows are, if anything, more important. Many sanitary officers who have investigated epidemics of diphtheria have come to the conclusion that milk may be a vehicle for the transmission of the poison. Whether the milk derived its infection of diphtheria from the cow itself or from a case of human diphtheria is, on the face of it, an all important question. Dr. Klein inoculated two cows with the diphtheric bacillus, and found that they exhibited symptoms practically similar to those noticed as occurring in cats,—viz., a local œdema and necrosis of the soft tissues, with a subsequent bronchopneumonia and fatty degeneration of the cortex of the kidneys. Inflammatory vesicles developed on the teats and udder of the cows which rapidly became pustular

and scabbed over. These vesicles, therefore, resembled cow-pox, and indicate, what was often suspected, that there are probably several distinct diseases included under the term cow-pox. However this may be, and it is a matter for future research, the fact had, previously to Klein's researches, been noticed that in these epidemics of diphtheria, where the source of infection was traced to the milk-supply, an eruption on the udder like cow-pox had been noticed. The vesicles and ulcer contain the diphtheritic bacillus: does the milk also contain it? In the cows experimented upon by Dr. Klein, the milk was withdrawn with all antiseptic precautions, care being taken that the vesicles, etc., were not touched. The milk as obtained was found to contain the same diphtheritic bacillus that had been subcutaneously injected into the animal.

We have here, then, a possible explanation of the mode by which a disease of the cow can convey to the milk the poison of diphtheria. That the milk so obtained in Klein's experiments was infective was shown in a curious way. The attendant was told to throw the milk away, but instead of doing this, he gave it to two cats, which were then in the laboratory (Brown Institution). Both these cats died, and not only so, but they infected over a dozen cats which were in the same room with them, and these cats had the typical diphtheria of the cat. This natural experiment is naturally very important; but a crucial test will have to be applied by feeding healthy cats directly with the milk derived from a cow suffering from diphtheria, and seeing whether they succumb to the disease.

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THE Secretary of the N. Eastern Sanitary Protective Association of England, says: "You do not permit a little clean sand to be added to sugar—lard to butter—or water to milk. Much more good may be effected by transferring your carefulness to the department over which you have absolute control—by seeing that your Lung Food (pure air) is not tainted before you swallow it.