

transmission of the disease to another district, though undoubtedly they are of import in spreading infection through a locality. The individual and his surroundings must be the most important factor in spreading the disease along land lines of travel, for as a rule, we can here exclude the spread of the disease by rodents, especially over long distances. Along sea routes we have the same dangers from the individual, but we have the added factor of carriage of infection from rats which as is well known often swarm on board ship. Let plague attack these rats and they may transmit it to their fellows on coming to a port either by direct contagion, or by the dead rats being eaten by their cannibal brethren, and thus disseminate the infection among the rats of the port. That plague can be transmitted from one rat to another can be readily demonstrated by shutting up healthy rats with rats inoculated with the plague. In the course of two weeks all die with the disease. Koch says "Plague is primarily a rat disease" and he seems to have much evidence to back up his statements, though that rats are the only means of carrying the infection he nor no one else claims. Cantlie says "It is the flesh eating animals that are the sufferers from the plague, the rat being the one most likely to be attacked and probably infects other animals. Rats are infected from man, from plague infected dust or from other rats." In spreading the disease through a community rats must be a factor of very great importance. Looking into the history of the epidemic in Bombay beginning in the autumn of 1896, we find that the first cases occurred in an area of the city, densely populated, amongst whom were many grain dealers, and in which locality large stocks of grain were stored—an ideal place for rats. The people had noted the deaths of large numbers of rats in their houses before the plague got a foothold in man. The sanitary condition of the poorer native quarters of these Indian cities defies description. With the filth goes too often famine and what is almost as pernicious in its effects, fatalism.

Again on examining into the outbreak of last summer (1899) at Oporto as reported in the December 1899 number of the "Annales de l' institut Pasteur," by Drs. Calmette and Salimbemi, these investigators after excluding on careful inquiry infection by man say,—(translation). "We think that the