

from the sputum and the practical outcome has been a decided improvement in the habits, not only of consumptives, but of people generally in the disposal of sputum. Our belief in the danger of dried sputum rests on the following observations: first, on the frequency of tuberculosis of the lungs among nurses and in prisons and other public institutions; second, upon the presence of living virulent bacilli in the dust of rooms frequented or inhabited by consumptives; and third, upon the actual experimental infection of the respiratory tracts of animals. But when the evidence is examined more closely it is seen that there is a certain insecurity in the foundations. As to the tuberculosis in institutions it is apparently only the prolonged exposure to the infection which is dangerous, Cornet found his best evidence among the nursing sisterhoods and brotherhoods where the whole life was given to the work and not among ordinary nurses. The evidence as to the presence of virulent bacilli in dust depended upon the intra peritoneal inoculation of guinea pigs with a considerable quantity of the dust. Finally, in the production of respiratory infections in animals, these were exposed to a spray of fluid sputum or of liquid suspensions of pure cultures.

All these facts have been pointed by Flügge of Breslau in a very careful critique of the older experiments. It remained for him and his pupils, to point out what is probably the most common method of respiratory infection viz., by the spraying of bacilli-holding droplets into the air by coughing and talking consumptives.

These researches, which, are perhaps, the most important contributions upon the subjects which we have had in recent years, have a bearing, not only on the etiology of consumption, but also on infection in a great many other disease.

It was shown that a talking or coughing individual sprayed into the air, droplets so small that they might be carried by the lightest currents of air which we find in a room and even by the respiratory current a few inches from the mouth. These droplets always contain bacteria from the saliva and in the case of coughing consumptives can be shown to contain tubercle bacilli. The number of tubercle bacilli which may be present in these droplets varies much with the patient and the character of the cough; some patients seem seldom to spray tubercle bacilli holding droplets, others produced them plentifully. The number of organisms in the sputum, the character of the cough and other factors played an important role in determining this. For instance the sharp, powerful cough, with open mouth and arched palate most frequently produced the fine bacilli-holding droplets which could be caught upon slides suspended within three feet of the mouth of the patient and stained in the ordin-