

The droplets coming from the saliva were also carefully examined, and only in the case of patients with very thin sputa were any bacilli found. To ascertain whether these droplets of saliva and those sprayed out in talking contained any bacilli worth taking account of, the washings of the mouth from well-marked cases were treated with a solution of KOH and centrifugized and the sediment examined. Only cases with great quantities of sputa or thin sputa presented bacilli and these infrequently and very few in number.

Having demonstrated that the bacilli were thrown out in the spray, it remained to determine if such spray would remain suspended in the air for any length of time and be carried to any considerable distance. The air and dust of the laboratory having been found free from the bacillus prodigiosus, it was chosen to be made use of in the experiments, and plates containing agar medium were arranged around the room, from the floor to a height of five feet above it. After gargling and washing out the mouth with a culture of the bacillus prodigiosus, twelve coughs were given during the five minutes' exposure of plates. Other sets of plates were exposed at the end of five, ten and fifteen minutes, for five minutes each. On incubation *all* the plates showed a varying number of colonies. The greatest number were on those within ten feet of the cougher, and exposed during the first five minutes; the least were on those on the floor, exposed during the first five minutes, and on those farthest away at a height of five feet exposed for the last five minutes. Other trials demonstrated that any disturbance of the air increased the distance and the length of time at which infection might take place, while with the air still the distance depended upon the vigor of the coughing. Thus it would appear that during a single act of coughing a patient may throw out bacteria-laden spray, which will find access to all parts of any ordinary room. Beside the power of directly infecting while contained in the droplets, the bacteria must, without any injurious drying, be readily set free when the spray alights on carpet, curtains, or cloths, and mingling with the dust be the important factor in infection through each material. Droplets falling on clothing must be a frequent means of the spread of infection from one house to another.

Not only do we have the spray thrown out while coughing, but also in the acts of laughing, sneezing, talking and deep breathing. Trials conducted in the same way as in the case of coughing, demonstrated that plates to the distance of ten feet were infected while laughing, to the distance of six feet with loud talking, ordinary talking to the distance of three feet, while deep breathing seldom infected groups of plates even at a few inches. These facts are not of great interest as regards