

they are no doubt familiar to most of you. It was demonstrated (1) that infection could thus be carried; (2) that the disease always followed the natural channels, affecting first parts near the point operated on; (3) that tubercular matter produced the same result, no matter from what organ or part of the body it was taken, whether from the lung, liver, testicle, &c.; (4) all animals were not equally susceptible—Guinea pigs and rabbits were easily affected, dogs, on the other hand, with difficulty; (5) the infection was successfully carried in several different ways—by inoculation, by the breath, and by feeding.

Prof. Cohnheim, in an address published in 1880 on tuberculosis, from the standpoint of the contagion theory, proceeds to explain the many forms of the disease found in the human subject according to this doctrine. In adults, the lungs are the organs by far the most frequently affected primarily. The virus in minute particles is easily breathed in. In children, the bowels are most frequently affected, a fact which is probably owing to the presence of the virus in the food, perhaps in the milk of affected cattle.

The spread of the disease from one organ to another is also an evidence of the presence of virus. For instance, the lungs are first affected, then the bronchial glands, then the larynx is attacked from the infected matter passing over it. The pharynx follows in order. The œsophagus escapes as the matter passes through with rapidity into the stomach. The latter organ escapes, owing to the antiseptic character of the gastric juice. When, however, a catarrh of the stomach takes place from the presence of so much irritating matter, the gastric juice loses its properties, and the virus passes through into the intestine, affecting first the mucous membrane and afterwards the neighbouring lymphatic glands and the peritoneum. There is no doubt but that the virus can also be carried by the blood to distant organs, the brain, for instance.

There are many points in connection with the hereditary character of tuberculosis, and of the manner in which the disease may remain dormant in the system, which might at first present serious difficulties to the doctrine of

contagion. When, however, one compares the disease with syphilis, which is accepted on all hands to be contagious, many of these difficulties disappear. In the same way as the virus of syphilis is carried over from one generation to the next, may not the virus of tuberculosis be so carried, through the semen or ovum? As syphilis may be apparently cured, and suddenly break out again after years of freedom from it, does not tuberculosis also remain dormant, and from some sudden irritation again commence its ravages?

The very sudden outbreak of tuberculosis by which patients are sometimes carried off in a few days or weeks, is in all probability produced by the virus passing into the general circulation, from some caseous gland in which it may have existed for years. The writer has himself recently seen a case of tuberculosis in which the patient was carried off after nine days' illness, and in which almost every organ of the body was found to be affected with tubercle. An old caseous gland was discovered near the root of the lung, which had no doubt been for months or years in existence.

When it is considered that Prof. Cohnheim collected and gave to the profession all these facts and inferences in an address made over two years ago, an address in which he prophesied the certain discovery of the virus, one is not surprised that the whole medical world should be moved with the deepest interest when Koch, of Berlin, demonstrated the presence of the bacteria, which, according to his ideas, are the cause of the disease. He, after two years of the most painstaking work, succeeded by a certain process of staining in bringing into view certain bacteria, which he could only find in tubercular tissue or sputa, and which he could readily distinguish from all other forms of bacteria. These bacilli, which will be demonstrated to you, are small rod-like bodies, about a third the length of the diameter of a blood corpuscle, and have a curved shape. They appear to be made up of spores.

Koch, in his investigation of tuberculosis, in both men and animals, scarcely ever failed to find the bacilli. He found them both in cases where the disease was produced by infection,