

ease. But of course it is impossible to draw the line between hereditary and accidental tuberculosis, as naturally the children of an affected mother are more liable to accidental contamination, because the baby and the mother during a long period of nursing are in almost continual contact.

Inherited predisposition is of course exceedingly common. This really signifies a diminished resistance of the cells of the body to tuberculous infection. It should be distinguished from the very exceptional condition of congenital tuberculosis where infection takes place before birth.

The possible methods by which the disease could be transmitted directly by inheritance are three in number: (1) transmission by the sperm, (2) transmission by the ovum, and (3) transmission through the blood of the mother by means of the placenta.

In order that the disease could be transmitted by means of the sperm it would be necessary that the tubercle bacilli should lodge in the individual spermatozoon by means of which the ovum is fecundated. Even remembering that tubercle bacilli occasionally exist in the semen, the chance that a bacillus would become lodged in the particular spermatozoon bringing about fecundation is extremely small, looking at the matter merely from a numerical point of view. The chance, however, is much smaller when we consider that the spermatozoon is made up of nuclear material, which the tubercle bacillus is never known to attack. Further there is no chemical evidence to support the view that direct transmission can occur through the sperm, and results of experiment are all against it, in that the young of healthy female rabbits impregnated by tuberculous males, as shown by Gartner and others, are never tuberculous, even though the females themselves often contract the disease.

As to transmission by the ovum it must be admitted that there is such a possibility, since Baumgarten has been able to detect the tubercle bacillus in the ovum of a female rabbit which he had artificially fecundated with tuberculous semen. The question, however, as to what effect such inoculation would have upon the human ovum cannot of course be answered.

It is probable therefore that the most constant method of transmission in congenital tuberculosis is through the blood current. By some it is supposed since tubercles have in several cases been demonstrated in the placenta, that this organ is invariably the seat of the disease. There are, however, undoubted instances in which, when the placenta has been apparently sound, both the placental blood and the foetal organs contained tubercle bacilli.

It has been noted however that no matter how far advanced the disease may have been in the parents, if the child was removed

early and kept away from the parental home, there has been no development of tuberculosis.

The following examples are given:—The family of B—was composed of five children, a father who died of tuberculosis and the mother who was quite well. The second child was removed from its home immediately after its birth, reared by a healthy nurse until he was thirteen years of age, and then placed in a school. He is now a healthy man of 36. He has never lived with his parents. The other four children lived with their parents. Two of them have died of pulmonary tuberculosis and the other two have the disease in an advanced stage.

In another family of seven children the father and mother were both tuberculous. The second and fifth child were removed from their parents and never lived with them. The five children reared by their parents have all died of tuberculosis. The two who were removed remained well and are now both married and have fine healthy children of their own.

In three different families twins were born while the mothers were affected with pulmonary tuberculosis. In each instance one of the children was reared in its own home, being nourished by a healthy wet nurse, while the other child was sent from its home and reared in the country. The three children who remained at home died—one of pulmonary tuberculosis, and two of tubercular meningitis or inflammation of the brain. On the other hand the three children removed from their homes and reared in the country under healthful hygienic conditions, are still living and well.

Numerous other instances have been recorded in medical literature. It is admitted that there is a possibility of the direct transmission of tuberculosis, because this possibility has been demonstrated. But infection by this method must be considered rare as compared with the frequency with which infection takes place after birth, instead of being as was formerly supposed very common. Cases of congenital tuberculosis have been and may be found. They are so few, however, that they are regarded merely as curiosities. The only hereditary factor from a practical point of view is contagion.

***The Muskoka Free Hospital
for Consumptives is a great
National charity, accept-
ing patients without money
and without price, from
any part of Canada.***