

red corpuscles of the blood are manufactured in the red marrow of the bones, and the white cells in the lymphatic glands which are situated all over the body. Now we have seen that in the majority of cases the bacilli are inhaled in infected dust. In healthy children the glands which serve the bronchi, or tubes down which the dust is drawn in the process of inspiration, are able to deal with the bacilli and destroy them; each gland contains a large number of white blood corpuscles which are the policemen of the body in the sense that they arrest and withdraw from the community such criminals as micro-organisms. Consequently nothing more is heard of the tubercle bacilli in the case of the thousands of healthy children who are daily inhaling tubercle germs.

But let us suppose that these glands are not very healthy themselves. Instead of the white cells destroying the bacilli, these latter destroy the corpuscles, and the germs are thus able to enter the general blood stream, whence they are carried, amongst other places, to the bones and joints, or it may be to almost all the internal organs simultaneously, when we get the disease known as general (or miliary) tuberculosis. The commonest cause of this weakening of the bronchial glands is a previous attack of bronchitis from measles or whooping cough. Similarly, when infected milk is swallowed, the mesenteric glands which serve the intestine should stop the invaders; but if they do not they become filled with bacilli themselves, and so these organisms are enabled to reach any part of the body through the blood stream. Perhaps the commonest cause of weak intestinal glands is digestive trouble (diarrhoea and so on) from improper feeding of the child on "what we has ourselves." Whether the bacillus enters in dust through the lungs or ear, or in infected milk through the intestine, there is a great tendency for the disease to spread through the various organs of the body, and this is much more likely to happen in children than in adults, and, strange though it may seem, there are often very few symptoms, even when the general invasion is extensive, and the reason is that the child, as a rule, dies before the little patches of tubercle germs have had time to break down into abscesses, when they would give rise to discoverable signs. Consequently we have to rely on certain general, and often rather indefinite, symptoms, and the diagnosis is often very difficult; indeed, I have seen, post-mortem, all the internal organs of the body riddled with little patches of tubercle in a case where most careful clinical examination failed

to discover any definite sign of that disease, though its existence was, of course, suspected. And it must be remembered that children, as a rule, do not expectorate, so we cannot examine their sputum under the microscope for the presence of tubercle bacilli, as we can in adults. The first of these general signs is irregular pyrexia, without anything to account for the rise of temperature. When this is combined with wasting we should always suspect the existence of disseminated—that is, spreading—tuberculosis. Or we may not get even a rise of temperature at the commencement of the illness, but only apparent illness, or fretfulness without any discoverable sign of gross disease on careful and exhaustive clinical examination.

Recently, however, some help has been obtained from the discovery of the fact that if we scratch the skin of a child, and then rub in some dead tubercle bacilli or else put a few of these into the eye, nothing happens if the child be not tuberculous; but if he is, inflammation will appear round the site of the scratches, or a slight redness of the conjunctiva if the eye has been selected, and we are often able by this means to detect tubercle in quite an early stage, when it may be sometimes possible to cure the patient. Another valuable sign is the investigation of what is known as the opsonic index for tubercle. In this process a little blood is taken from the finger and mixed with some dead tubercle germs in a small tube, which is then placed in an incubator for twenty-four hours. A drop of the mixture is then examined under the microscope, and the number of the patient's white cells which have tubercle bacilli inside them—showing that the corpuscles have made an attempt to swallow the bacilli—is compared with the result of a similar drop from a mixture of bacilli and the blood of a healthy person. If the patient's corpuscles have fewer bacilli inside them than those from the healthy person, it shows that he is in all probability tuberculous.

But we have seen that the glands at the root of the lung—the bronchial glands—and in the abdomen—the mesenteric glands—are very likely to be attacked, so we have to see if we can recognise the presence of tubercle in these.

In the case of the bronchial glands we can suspect disease when the child has a frequent spasmodic cough, and, as a matter of fact, when a child has an attack of whooping cough which does not clear up, we should always suspect that tuberculosis of the bronchial glands may have supervened. There are other signs also which are rather too

*previous page*

*next page*