

"We wish to insist that in no way do we consider the diphtheria endotoxin to be a substitute for diphtheria antitoxin; the latter is to be used in the *treatment* of the case in the ordinary way."

CLINICAL NOTES ON SOME COMMON AILMENTS.

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TUBERCULOSIS IN CHILDREN.

I have chosen the subject of tuberculosis as it affects children for two reasons; firstly, because it is not very easy for a nurse to get a clear idea of the subject from the average text-book of medicine, where she will probably have to wade through a large quantity of facts and figures only to find, after all, that they relate mainly to pulmonary consumption in adults—a very different thing.

Then I know of no disease which so well illustrates the way in which the body reacts to an attack made on it by micro-organisms, and I always think that, if a nurse has in her head a clear idea of the nature of the fight which is constantly going on between ourselves and these our invisible enemies, she is much less likely to think of the care of her patients as drudgery—everything, incidentally, which we do not understand, but yet have to do, must be either drudgery or a meaningless ritual.

So I am going to begin with the tubercle bacillus itself, and then show how it affects the children who are exposed to its attacks. As usual, I shall leave out very much in order that the main outlines of the picture may be clear.

The tubercle bacillus is an organism that has a great power of living under adverse circumstances; in particular, it may lie in a dried-up state for a long time, but so soon as it reaches a supply of moisture and food, it emerges from its inactivity and grows with vigour in its new surroundings. It is also rather hard to kill, a fairly prolonged contact with quite strong solutions of disinfectants being required for this purpose. Some of the so-called antiseptics it has no objection to whatever, as it will even grow after it has been treated with a solution of them. Though this is rather a digression, I may say that it is very much to be wished that some law could be passed making it illegal to publish false descriptions of disinfectants. Many poor people spend shillings which they can ill spare on preparations which merely smell, and which do not give the much

advertised protection from disease which causes them to have so ready a sale; they may subsequently pay the penalty for their quite excusable faith in the loss of one of their children from the ravages of an organism which has been liberally attacked according to the directions on the bottle.

Now the tubercle bacillus attacks cattle as well as human beings, so that the two main sources of bacilli which can infect children are dust containing dried-up bacilli from the expectoration of persons whose lungs are affected by the disease, and milk from infected cows. These latter often suffer from tuberculosis of the udder, even though they appear to be pretty well in themselves, and take their food well. Many cow keepers therefore do not know when they have such animals in their possession, and, as the reports of inspections of farms show, some do not mind mixing milk from cows that they know to be thus diseased with the common stock. It was formerly believed, on the dictum of a celebrated bacteriologist, that bacilli from cows could not give rise to tuberculosis in human beings, but this assertion has now been shown to be erroneous—in fact, the possibility of bovine infection has been proved up to the hilt by the deaths of thousands of small children—a veritable massacre of the innocents.

Tuberculous milk, however, is not the chief source of infection in children, though it is, or should be, the most easily preventible. In a large series of fatal cases it was found that the organism had entered by the lungs in 63.8 per cent., by the ear in 6 per cent., and by the intestine in 29 per cent. In rather less than one-third, therefore, was the milk to blame, and infected dust must be held responsible for the remaining two-thirds—it is probable that the ultimate source of this in almost every case is the dried-up expectoration from adults with phthisis, or "consumption," as it is popularly called. Hence the "prevention of spitting" notices in public places.

As regards the frequency of the disease, statistics of post-mortem examinations show that about one-third of the children who die in hospitals do so on account of tuberculosis in one form or other, and in a further 12 per cent. signs of tubercle are found, though this has not been the actual cause of death. This is rather an appalling state of things when we consider that the sources of infection are known and preventible.

Now in childhood, the tubercle bacillus attacks the blood-forming organs. We know from the researches of physiologists that the

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