

nodules may coalesce and thus produce large masses. Blood-vessels connected with the nodules frequently present clusters of bacilli in their interior. The author (Sutton) is convinced that these bacilli, from whatever source arising, are introduced into the alimentary canal and find their way into the walls of the intestine. Here they are attacked by the leucocytes, which surround, ingest, and destroy them. The bacilli may be too numerous for the leucocytes, and the point where they gain entrance into the tissues be transformed into a battle-field. Large numbers of other leucocytes quickly reinforce their comrades. Many of these die, others fuse and form giant-cells. The dead leucocytes form pus and give rise to the caseous centre in the nodules. From these nodules the bacilli are conveyed by blood-vessels, or are even carried away by the leucocytes—a giant cell sometimes containing fifty bacilli—and initiate new struggles in distant parts. When bodily conditions are favorable, bacilli multiply very rapidly and overrun the whole system, nodules arising in the liver, lungs, brain and skin. Function is interfered with and death results. In addition to local troubles, bacteria produce general disturbances, one of the most important being fever.

The behavior of leucocytes to pathogenic bacteria constitutes the essence of the inflammatory process. This is essentially a local struggle between irritants and the white cells of the blood. When the whole of the blood is engaged in the struggle—as in ague, pyæmia, anthrax—we have general inflammation or fever. The different varieties of fever depend on the habits of the bacteria, some being virulent and irritating to the tissues, and others slow in attaining maturity. Inflammation takes place in plants; for example, the gall on leaves due to the deposition of eggs in their interstices by insects. Each insect produces in this way a different kind of gall. One leaf may thus present at the same time several varieties of inflammation. It simplifies our notions of morbid processes to find that the phenomena known as the repair of wounds, inflammation, and fever, are manifestations of the same process by which a child loses its milk-teeth, the tadpole its tail, or the stag its antlers, rather than to look upon such conditions as the result of some special law.—*Medical Record.*

EARLY STAGE OF DISEASE OF THE SPINE IN CHILDREN.

It is a simple matter on paper, but not always so in actual practice, to say whether a child has or has not early vertebral ostitis. Those who have seen most of spinal disease in children will be the least likely to dispute this statement. In

a doubtful case the child should at once be placed flat in bed and kept flat until all equivocal symptoms have passed off. The lecturer had met with instances in which the practitioner, though suspecting the invasion of ostitis, had allowed the child to run about, because the existing symptoms were not sufficiently obvious to enable him to form a positive diagnosis. Attention was directed to two methods of examining for spinal caries which were as widely adopted as they were antiquated and unsatisfactory. The first was that of pressing upon the spinous processes from the nape of the neck downwards. The disease being in the body of the vertebræ, pressure upon the tip of the spinous process was hardly likely to give trustworthy information. Often, indeed, there was neither pain nor tenderness in the affected region. The second method is that of applying a hot sponge along the spine. Any child would be apt to wince under this test, even though its spine were healthy. On the other hand, if its spine did happen to be diseased it would by no means follow that the hot sponge would give information of that fact.

Though there is often no local pain with spinal ostitis, there are often complaints of symmetrical peripheral pains which are too frequently ascribed to "rheumatism" by those who do not trouble to seek out their cause.

Before proceeding to examine the child, it is well to question the parents as to the complaints of aches or pains, and to notice how the child holds himself. Probably he will be standing unusually straight, with his head and shoulders somewhat thrown back in order to keep himself in a position of stable equilibrium, the centre of gravity having been advanced by the collapse of the softened vertebræ. As regards pain it may probably have been complained of in the back. But very possibly there may have been no complaint of that nature, the child having suffered only from peripheral neuralgias. These distant pains are usually symmetrical, and it is strange how the very terminal filaments of the sensory nerves are those chiefly concerned in it. Thus in cervical caries there may be pains in each side of the neck; or, the third and fourth nerves being implicated, over the pectoral regions and shoulders. The lecturer then brought in a child directing attention to its stiff and straight pose, and to the fact that it supported itself by holding on by his mother's dress. On being questioned, the mother said that the child's constant complaint was of "headache in the chest." Intercostal pains which were carelessly ascribed to "pleurodynia"—whatever that was—or to "rheumatism," were often the result of vertebral disease. So also with "belly-aches," pains in the hips, thighs, legs and feet; in the arms, elbows, and hands.

Several naked children with various spinal affections were then brought in. Attention was called