

Soon attacked by passing suppurative bacteria. Ulceration and sloughing follow in proportion to the destruction of tissue by the second infection. At this time, the symptoms begin to show that a new factor has begun to operate. The temperature is less regular in its remissions, and takes on a septic character similar to surgical-wound diseases. The micrococci are carried on into the mesenteric glands, where they may, in favorable cases, be arrested and destroyed. The glands after being enlarged for a long time return to nearly the normal size. The fatty degenerated material is removed, and the residue becomes calcified.

Unfortunately, this happy issue is not always realized. The filtering power of the already overtaxed gland is overcome, and the great lymphatic channel is flooded with the escaping bacteria. They are poured into the venous circulation, and find their way directly into the lungs. Here capillary embolism results a second time, and with the presence of a parasite which is capable of producing a destructive inflammation. This is the pneumonia which Murchison says 'rarely appears before the third or fourth week,' and then 'may terminate in small abscesses, or, rarely, in gangrene' (p. 557). It must not be supposed that the presence of the pus-microbe is the only essential to the formation of destructive inflammation, or that even in tissues the vitality of which is so much reduced by disease as the lungs in the third week of typhoid, they would invariably set up the suppurative process. The investigations of DeBary and Grawitz lead us to think that the resistance of the tissues is a much more important and powerful factor than we had supposed. But not all, if even a small part, of the bacteria are arrested in the capillaries of the lungs. Many of the emboli here are, no doubt, taken up by the pulmonary lymphatics, and carried to the mediastinal glands, to be destroyed. Enlargement of these glands is frequent, and their breaking down into abscesses is occasionally noticed.

Upon the arterial side of the circulation, the resistance of the tissues is, upon the whole, better preserved; but infection of bones, joints, and other serous cavities, and of the large organs of the body does take place. Then all the severe symptoms of osteomyelitis, suppurating synovitis, pericarditis, pleurisy, peritonitis, meningitis, and abscess in the large organs are added to the typhoid history. It

is no wonder that the patient, already reduced by weeks of disease, is unable to resist this unexpected invasion, and very soon succumbs. These complications make up a very considerable bulk of the fatalities from abdominal typhus, though each in itself is rarely met with.

There is a form of infection to which the poor typhoid is exposed which is the most pitiable of all. Either from the presence of the lasting spores of the bacillus, or from infection through the milk and other food, or through the inspired air, tuberculosis is a very frequent sequela of typhoid. All systematic writers notice this frequency, and attribute it to the protracted depression of the disease. Murchison says that it is more common after typhoid than after typhus, and that it is to be feared in all cases when hectic fever and bronchitis persist after the end of the fourth week (p. 558).

The local effects of an invasion with the typhoid bacillus is a non-destructive one, and the tendency is towards complete restoration to a state of health.

The primary lesion in the bowel or in the larynx gives rise to a point of least resistance; and the general impairment of nutrition, renders all those causes which ordinarily determine the localization of infection far more potent.

Pyogenic and other forms of infection do take place through the primary lesion, and result in more than ordinarily serious consequences on account of the diminished resistance of all the tissues of the body.

Therefore all traumatism to the abdomen, either external, through violent, careless, or unnecessary palpation, or internal, through the use of food containing solid particles which might cause abrasion, should be strenuously avoided.

The imminent danger of typhoids to tuberculosis is conceded by all, and every precaution should be taken to prevent infection through contact with phthisical patients or nurses, or through confinement in rooms occupied by them, or through utensils or food which might furnish the infection; and when there is reason to suspect latent tuberculosis, the use of all anti-tubercular measures is recommended.

The treatment of typhoids and phthisical patients in the same hospital ward is little short of criminal, and the employment of tubercular nurses, attendant, or cooks, or ward-servants is incompatible