

*Medical Sciences* for 1837, in which for the first time the essential differences between typhus and typhoid fevers were clearly and succinctly announced; Bartlett's work on fevers (1842), in which the two diseases were separately considered and the differences fully acknowledged; Jenner's articles (1848), which have been recently reprinted with his contributions on diphtheria; the great work of Murchison on the continued fevers; the article by Liebermeister in von Ziemssen's *Encyclopaedia*; while in Vol. 1 of the *New French Traité de Médecine* you will find an elaborate account by Chanterresse of the bacillus and the conditions under which it develops. I have also given the librarian for your use Brand's brochure on the treatment of typhoid fever. Let me at the outset refresh your memories upon one or two points in the etiology of the disease. The bacilli or their germs are very widely spread, and though the possibility of infection through the air cannot be denied, yet undoubtedly they enter chiefly through the digestive tract with food or water. They settle in the lymph follicles of the intestine, in the mesenteric glands, in the spleen, and to a less extent in the liver, and after a variable period (the stage of incubation, in which they are growing and extending) produce sufficient toxic material to cause symptoms. It is important to bear in mind that they do not settle on the mucosa of the bowel, but that they grow *in* its tissue, and they are not found in the *fæces* until the middle or toward the end of the second week. It is an infection of the chylopoietic lymphatic system, not of the intestine alone, and there are fatal cases in which the bowel lesion, believed to be characteristic, has been extremely slight or even absent. There may be the most intense toxic and nervous manifestations with very slight intestinal affection. The dangers of the disease in order of severity are: 1. The general toxæmia. 2. The intestinal lesion. 3. The secondary infections. The typho-toxines may be produced in such quantity as rapidly to overwhelm the system, and patients may succumb within a week or ten days with intense nervous symptoms before the ulcers form in the intestines. In other instances the system fails gradually in a less profound but more prolonged toxæmia. The dangers from the intestinal lesion are very great. As the necrotic tissue separ-

ates, blood-vessels may be eroded and cause a fatal hæmorrhage or the sloughs may be so deep as to extend through the entire wall, or in separating leave so thin a base that perforation subsequently occurs. These two accidents together account for fifty per cent. of the fatal cases. Primarily causing an affection of the chylopoietic lymph glands the typhoid bacilli may themselves pass to distant organs and excite inflammations—nephritis, meningitis, pneumonia, etc., but more often the organs, weakened by the prolonged fever, fall a prey to the colon bacilli, the staphylococci, the streptococci, and the micrococcus lanceolatus, which cause the secondary complications and which constitute the third great danger in the disease. Upon the question of the treatment of typhoid fever the profession has not reached any unanimity. I must say that the cases are still, as a rule, overdosed. I am sometimes appalled at the number and variety of drugs which are poured into an unfortunate victim with this disease. You will here have an opportunity of seeing what a non-medicinal plan of treatment can do, since a very large majority of our cases receive no drugs from the beginning to the close. We employ a systematic hydrotherapy, believing that on this plan a certain percentage of the cases are saved, and we shall continue to use it until some method is devised by which the mortality in large series of cases in hospital practice is reduced below six or seven per cent. Not much progress has been made with the so-called specific treatment of the disease. Sterilized typhoid cultures have been used, but the number of cases is as yet scarcely sufficient upon which to base any positive opinion. I show you here the charts of two cases in which during last session we then employed cultures. Both were cases of great severity, and one patient after seven injections seemed so ill that we thought it better to abandon the injections and return to the baths. In the other case also the injections did not seem to have any special influence. Following one of the injections in half an hour the patient had a very heavy chill. We should not, however, be discouraged, as the outlook for serum therapy seems at present unusually bright. Specific medication in the fevers has not kept pace with the enormous development in our knowledge of their etiology. Take, for example, the cases