

cases, the local and constitutional symptoms are both milder and more gradual in development.

Perforation may occur in any kind of case, even the mildest ambulatory one, but, in common with other accidents, it is much more frequent in the severe cases with active abdominal symptoms such as diarrhœa, meteorism and hemorrhage—all symptoms of extensive and deep ulceration. This greater liability to perforation in diarrhœa cases is well shown in the Johns Hopkins' Hospital service in which the accident occurred in twenty out of one hundred and fifty-seven cases with diarrhœa—12¾ per cent, as against ten in six hundred and seventy-one non-diarrhœa cases, 1¾ per cent. Our own experience is similar; in four out of the five cases there was marked diarrhœa—in some of them caused by the daily administration of purgatives; in the fifth case, sent into the hospital after perforation occurred, there was moderate diarrhœa and slight hemorrhage. It is probably a matter of indifference so far as the liability to perforation is concerned whether the diarrhœa is due to irritation of the bowel by the toxins of the disease, by irritating bowel contents from injudicious diet, or by purgative drugs. The symptoms depend not only on the situation and nature of the perforation but also on the severity of the general symptoms and the degree of toxæmia. In those with much prostration and blunted perceptions the symptoms may be quite masked, especially if meteorism is marked, so that the occurrence of perforation cannot be more than suspected. In a second class of cases, rare ones in which there is much toxæmia but without mental obtuseness, the local reaction may be so slight that there are no abdominal symptoms to mark the occurrence of the accident, just as may occur in septic peritonitis from other causes—e.g. strangulated bowel or gangrene of a fallopian tube. In a *third* class, milder cases in which neither the mental nor physical perceptibility is much, if at all, obtunded, the symptoms are practically always frank. To this class probably belongs the majority of all cases of perforation; at all events, it is in these cases that there is at least a fair chance of recovery if treatment is prompt. Fortunately, the great majority of cases of perforation occurring in this country, at least, for several years past, belong to this class. Cases of extreme toxæmia with marked meteorism, profuse diarrhœa, muttering delirium, and subsultus tendinum are of rare occurrence.

It is worthy of note that the immediate symptoms are due to perforation and local irritation of the peritoneum, while the later ones are caused by the peritonitis and septic absorption caused by infection by pyogenic organisms and not by the typhoid bacillus.