

pany with streptococci, staphylococci, pneumococci, and *Bac. coli. communis* and much graver prognosis attaches to that case in which streptococci are dominant over Eberth's *Bacillus*.

The causative factors in perforation as yet can be but uncertainly cited and we must wait further investigation before attaching too great value to the statistical ascendancy of such factors as race, sex, age, season and geographical locality. The stage of the disease and severity of the attack would appear to be important factors and it is generally accepted now by authorities that perforations may be looked for, more frequently by far, in the third week of the disease than at other periods, though cases are reported in the first and as late as the sixteenth week. Although Allbutt and others report it as occurring in mild and even apyrexial typhoid, still there can, I think, be little doubt of its greater frequency in association with severe symptoms. In the list of exciting causes of perforation may be noted such conditions as undigested portions of food—tympanites, vomiting, active purging, large or too forcibly administered enemata, muscular action, as in turning quickly in bed, straining at stool, walking; and Armstrong, of Montreal, has reported intestinal worms as being present in two of his series of cases. Occurring as this lesion usually does in the midst of an established symptomatic display it is not to be wondered that its own peculiar colons are apt to be lost in the general blending and it needs all our attention to detect in the pathological color scheme before us, the addition of the shadings characteristic of it. Fortunately, however, for our diagnostic purposes, its incidence into the symptomatic complex of typhoid fever is usually marked by one or more dominating effects and it is upon the true reading of these that our diagnosis will stand.

Foremost among the symptoms of perforation should be placed pain. As in appendicitis so in perforation pain may be referred to the peri-umbilical region or to the end of the penis, but it is more commonly located in the right lower quadrant than elsewhere. From a personal study of five perforations as well as from an analysis of a series of cases from