The initial collapse of gastric perforation may be accounted for by shock, the subsequent gradual sinking being usually due to septic absorption.

The early and prolonged prostration of intestinal perforation, especially when low down, may be accounted for by absorption of H_2S , accompanied by shock, the fatal issue being of septic origin.

In both, when the intestine is overloaded, the products of putrefaction may come into play, and add the symptom of early cardiac failure.

Now, if I am correct in the views above put forward, they teach a lesson of which modern surgery has already commenced the study—that is, that the cause of death is removable in those apparently hopeless cases.

Up to this, my case included, there are on record 26 cases of laparotomy for ulcerative perforation of the stomach or intestines.

The result of 22 are given by Steinthal (*Verhandlung deutsch. Gesell. für Chir.*, 1888). Eight of the 22 recovered. In only 1 of these was suture required; in 1 the appendix cæci was removed; in 3 suppurative peritonitis was present; in the others septic peritonitis existed. Incision and washing out of the peritoneum saved these cases even under such unfavourable circumstances. In the unsuccessful cases the operation was, as in my case, too long delayed, the perforation could not be detected, or secondary collapse occurred. Of the remaining cases, 1 recovered completely, a second with a fæcal fistula, 2 died within twenty-four hours after operation. These results would strongly support the views put forward in my communication, and should impress us with the necessity of early operative interference in such cases.

ART. XII.—*The Influence of Position on Fractures of the Lower Extremities.* By WILLIAM COLLES, M.D., Univ. Dubl.; Fellow and Secretary, R.C.S.I.; Surgeon-in-Ordinary to Her Majesty the Queen in Ireland; Regius Professor of Surgery in the University of Dublin; Surgeon to Steevens' Hospital.

I DO not recollect to have found in the works of authors on the Practice of Surgery a satisfactory explanation of the fact that the change of posture from the horizontal to the sitting position is so injurious to patients labouring under fracture of any of the bones of the lower extremity. A moment's consideration will, however, fully explain the cause and effect.

If we examine a person lying in the horizontal position we find the head of the femur at least three inches above the tuberosity of the ischium; whereas, when sitting up, the femur is at right angles with the axis of the body. These two points are on the same line, perpendicular to the femur, one above the other.

As the body moves on the extremity of the ischium in assuming the sitting posture, the head of the femur must be pushed downwards for two or three inches. This must influence the point of weakest resistance—the seat of fracture. This, if the fracture be oblique, will have the tendency to cause the fragments to slide one over the other; or, if the fracture be transverse, and the fragments accurately applied to each other, will force them to assume a more or less obtuse angle.

Hence, I think we cannot be too careful in frequently inspecting the position of the limb, especially while the union is yielding and soft, and offers an objection to putting up these fractures in immovable apparatus, which can only conceal the deformity, but cannot prevent it.

ART. XIII.—*The Work and Rations of the Soldier.*^a By
J. HICKMAN, Army Medical Staff.

SECTION I.—THE WORK OF THE SOLDIER.

IN comparing the value of foods as force-producers, it has been shown^b that all work must be reduced to the one common standard, expressed in foot-tons. Though the object of this section is the consideration of external work, it may be useful to make a few remarks on the work done by the heart, and generally the automatic labour of the body, especially, too, as this internal work seems to increase proportionally with the external. On an average the heart makes 70 strokes a minute, discharging at each stroke about $1\frac{1}{4}$ ounces of blood against a pressure of over 4 lbs. per square inch, and consuming an amount of energy in the 24 hours of 124 foot-tons. The quantity of air pumped in and out of the lungs in 24 hours varies from 400 cubic feet, when no exertion is being made, to 900 cubic feet in the case of the hard-working labourer. It has

^a Since this article was written, an admirable paper by Colonel Onslow on "The Physical Training of the Soldier" has appeared in the Journal of the Royal United Service Institute, and should be consulted. The reader is also specially referred to Parke's "Practical Hygiene," 1887, pp. 239–253.

^b See Dublin Journal of Medical Science for July, 1888.