probability tend to increase the bleeding; we therefore limit the pre-operative stimulation to getting the patient thoroughly warm and administering 1 c.cm. pituitary extract.

During the operation every precaution is taken to minimize the degree of shock; the theatre is thoroughly heated, the table is provided with a hot-water bed; lately we have found it advantageous to operate on these cases while they are in the Trendelenburg position.

Immediately before the operation commences the administration of subcutaneous saline by a Lane's bag is begun, and it is continued throughout the operation; three to four pints of fluid are frequently given in this way. We have tried several different methods of anaesthesia. We have had good results from the use of spinal anaesthesia, but there is difficulty in obtaining the freshly prepared anaesthetic, and it would appear that this is an important detail. In two instances we have had patients collapse suddenly after the administration of this anaesthetic. More lately, and on the suggestion of a paper by Yandell Henderson, we have employed closed ether anaesthesia. The paper above mentioned adduces evidence to show that by this method of anaesthesia shock is considerably lessened.

The method has given us great satisfaction. Briefly the operative technique which we have employed is as follows:

The abdomen is opened in what would appear to be the most suitable situation, and generally in the middle line. A large incision is employed. If the abdominal cavity contains a large quantity of blood, sufficient of this is rapidly swabbed away with a long roll of dry gauze to clear the view. A systematic examination of the various viscera is now carried out. We begin by picking up the caecum and recognizing the ileo-caecal junction; we work back rapidly along the whole length of small intestine, examining not only the gut but also its mesentery. The large intestine is reviewed, special attention being paid to the various flexures. If necessity arises the stomach on both aspects, the duodenum, the liver, and spleen are examined. It is a wise precaution to palpate both kidneys, especially the left kidney, in cases of damage to the spleen. The pancreas is reviewed during the examination of the posterior wall of the stomach. The pelvic viscera are examined last, and to facilitate their examination the residual haemorrhage is more completely cleared away. The question arises whether or not the abdominal cavity should be washed out. In early cases with extensive soiling of the peritoneal cavity we have done so; in later cases, and in those which showed evidences of peritonitis we have not done so. We have found it sufficient to establish drainage by a single Keith's tube, passing into the pouch of Douglas. In special instances such as have already been mentioned we have found it necessary to drain locally or in the flanks.

We invariably close the abdominal wall with through-and-through sutures of silkworm gut, guarded where they pass over the wound junction with small pieces of capillary rubber tubing. A Doyen's handled needle is the ideal instrument for inserting these sutures.

Throughout the operation speed is an important factor, coupled with every possible avoidance of shock.

As regards the post-operative treatment, there is very little which we wish to add; it is similar to that of every other abdominal operation. Special attention is paid to the administration of fluids—for choice by the administration of continuous rectal salines and by subcutaneous infusions.

One is frequently asked regarding the prognosis of these cases. There is this fact to be recognized, that one must be prepared for repeated most bitter disappointments, but when one comes to view a series of cases, the gains seem infinitely greater than the losses. The prognosis, of course, very largely depends on the degree of the injury sustained, but an even more important factor is the length of time which has elapsed since the injury was sustained. Early operation offers the best and surest chance of ultimate success. In reviewing the statistics of the results of such operations as these it is impossible to consider the question *en masse*. Each individual case must be considered, for the chances of success depend upon so many factors that it varies enormously in different instances.

We wish to acknowledge our indebtedness to Colonel Cutlbert Wallace, R.A.M.C., for his encouragement and

advice; also to Lieutenant-Colonel Wear, C.M.G., R.A.M.C.(T.), for permission to record these cases. The illustrations are the work of Sergeant Wilson and Private Warr, R.A.M.C.(T.).

A METHOD OF TREATING GENERAL PERITONITIS WITH OBSTRUCTION, AND ITS APPLICATION IN MILITARY SURGERY.

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My interest in the subject of obstruction secondary to peritonitis dates back for ten years. During this period I have been collecting cases in which, as the result of peritonitis confined to the pelvis, obstruction has supervened. My conclusions were presented in a Hunterian Lecture last year. I showed that the guts below the horizontal level of the symphysis were paralysed, while the bowels above, though distended, retained their contractile power. As the pelvis contains both a length of large and a length of small intestine, there are two obstructions to be dealt with, and the name "ileus duplex" was suggested for the condition.

The success of the treatment I adopted in cases of ileus duplex led me to attack on the same lines the more difficult problem of paralytic obstruction in cases of general peritonitis.

It must here be remarked that not all cases of general peritonitis go on to the stage of obstruction. This is especially the case in children, and I have operated upon a boy of 12 with absolutely universal peritonitis extending up to the diaphragm in whom no sign of obstruction was present. Recovery followed free drainage of the peritoneal cavity. Furthermore, in the early stages of general peritonitis peritoneal drainage is often successful in arresting the spread of the peritonitis and in preventing the onset of obstruction. There are, too, numerous cases of mild paresis of the bowel in peritonitis which can be successfully treated by subcutaneous injections of eserine, by turpentine or ammonia enemata, or by purgatives. This paper deals exclusively with cases in which the accepted modes of treatment have failed to avert or relieve paralytic obstruction of the bowels.

If there is a condition in surgery which is stamped with the word hopeless, it is that stage of a general peritonitis where, in spite of pelvic drainage, cessation of the passage of flatus and persistent foul vomit indicate that complete obstruction has supervened. The rigid abdominal muscles have been forced to yield by the pressure of fluid poured out into the paralysed intestine, and the abdomen is uniformly and tightly distended like a drum. The pulse becomes running, the extremities cold, and the patient, measuring his condition by the abnormal clearness of his faculties, only within a few hours of the end realizes with a horrible certainty that he is in the inexorable grasp of death.

This would be accepted as a true clinical picture of the later stages of general peritonitis. But in abdominal surgery typical "clinical pictures" are of pathological interest only. They imply that the surgeon's chance has gone.

Is it inevitable that cases of general peritonitis should reach the condition thus depicted? There is a preceding stage in which the obstruction is complete, but the pulse is still relatively good, and the vomit has not become offensive. The abdomen is generally distended, but it is absolutely rigid only below the umbilicus. The upper half of both recti is softer than the lower half, and above the umbilicus slight respiratory excursions of the abdomen can still be seen.

This is a stage of general peritonitis which is not recognized in the textbooks, but is known to all surgeons of much clinical experience. It is the stage of the clinical sketch, not of the clinical picture; the stage of deadly struggle, not yet of decisive defeat.

Is the problem presented by such cases really hopeless of solution? By the present methods of surgery it

certainly is. There are, however, certain indications that it may not prove insoluble. Let me tabulate these hopeful indications:

1. General peritonitis is rarely universal.
2. General peritonitis usually begins at the lower limit of the peritoneal cavity and spreads gradually upwards.
3. The persistent vomiting indicates that the stomach and upper bowel retain their contractile power to a late stage.

General Peritonitis rarely Universal.

What is meant by the term "general peritonitis"? The term is loosely used. It is quite certain—and here I speak from my own experience in the operating theatre—that in cases presenting the clinical features of general peritonitis universal peritonitis is rarely found. Any widespread peritonitis unlimited by adhesions is included under the clinical term "general peritonitis." If as a rule the peritonitis involved the upper part of the abdomen, it would avail little that its distribution is rarely universal, for in these circumstances the treatment I am about to suggest would be impossible. Fortunately, however, general peritonitis, whatever the point at which the infection reaches the peritoneal cavity, usually begins in the pelvis and spreads upwards.

In cases of general peritonitis due to appendicitis the infection of the peritoneum invariably starts in the pelvis. It is the rule, even in cases where the source of infection—for example, a gastric ulcer—is in the upper part of the abdomen, that an unlimited peritonitis is at its maximum in the pelvic region, and that it spreads from below upwards through the abdomen. This of course depends upon the fact that gravity carries most of the irritating material down to the lowest point of the abdominal cavity. Moreover, if the rupture is on the anterior wall of the stomach, the great omentum shields the small intestine. If the rupture is on the posterior wall, the contents of the stomach reach the pelvis by way of the right kidney pouch, and do not much affect the small intestine. But there are exceptions. If there is very extensive fouling of the peritoneum, as by the escape of a large quantity of stomach contents through a perforation, or by multiple wounds of the intestine, a true universal peritonitis may be set up. Wallace records death from peritoneal inflammation within twenty-four or thirty-six hours of a gunshot wound. Such cases are, however, exceptional, and it may be stated, broadly speaking, that a so-called general peritonitis is an unlimited peritonitis commencing in the pelvis and spreading gradually upwards, so as to involve a larger and larger area of the peritoneal cavity. This statement is based upon inspection of the abdominal cavity during life in a large number of cases. I am convinced that in the vast majority of cases of general peritonitis a cautious investigation of the upper abdomen would show it to be uninvaded. Among some hundreds of cases of appendicitis with peritonitis I only recollect a single one in which a true universal peritonitis, affecting every district of the peritoneum, was present.

Persistence of Contractile Power in the Stomach and Upper Bowel.

It may seem paradoxical to include the symptom of persistent vomiting among the hopeful indications. There is, of course, a last stage where the vomiting is the mere mechanical overflow along the oesophagus from the over-distended stomach and intestines, and is similar to the gush of stomach contents from the mouth which may be produced by pressure upon the abdomen of a corpse. But in the stage prior to this the vomiting is due to active contractions of the stomach and the small intestine.

That is to say, the vomiting indicates persistence of peristaltic power in the stomach and upper intestine up to within a short period of death.

We have now reached important conclusions which will guide us in attempted treatment: (1) In general peritonitis which, in spite of drainage, has produced signs of intestinal obstruction, which has reached, that is to say, a stage now regarded as hopeless, we can still rely for a time on the functional activity of the muscle of the stomach and of the upper part of the small intestine. (2) In such cases

the upper part of the abdomen, roughly speaking that part of it lying above the umbilicus, may be regarded as for some time longer free from peritonitis. In this district we may provisionally assume that surgical operations may be undertaken which postulate the power of repair, such operations, for instance, as intestinal anastomosis. The intestine in this region will be distended because of the obstruction below; it will be inflamed, if at all, only just before the approach of death.

We are now in a position to discuss the indications for operative treatment. It is fairly obvious that any treatment adopted must not involve unduly prolonged manipulation or exposure, and must not add to the shock which is already present. Any method which fails to fulfil these conditions will simply hasten death. It is for this reason partly that the emptying of the paralysed intestine by threading a tube through it has given such unsatisfactory results. Moreover, the emptied intestine still remains flaccid and powerless, and the obstruction consequently persists.

In discussing this question of treatment I must return to the subject of ileus duplex—paralytic obstruction due to pelvic peritonitis. Here, in my opinion, is to be found the key to the treatment of general peritonitis, for I found that recovery could be secured in such cases by anastomosing the suprapelvic ileum to the ascending colon, and then opening the caecum by a caecostomy.

The principle involved might be stated generally in the following terms:

In cases of peritonitis involving the lower part of the peritoneal cavity up to the level of the pelvic brim, when obstruction supervenes, it can be treated successfully by the improvisation of a shortened but complete alimentary canal above that level. The simplicity of this statement gives it the air of a truism, nevertheless I believe it represents a marked advance in abdominal surgery.

We have now to consider whether this principle, which has proved to be successful in cases of pelvic peritonitis, can be extended to the more difficult case in which the peritonitis is general.

In peritonitis limited to the pelvis, the intestinal paralysis affects exclusively the portions of gut contained in the pelvic basin, namely, the lower portion of the ileum, and the pelvic colon and upper portion of the rectum. In so-called general peritonitis, at the time intestinal obstruction supervenes, the line separating the inflamed and uninfamed districts of the peritoneum is, as we have seen, roughly a horizontal line drawn through the umbilicus. Below this line lies paralysed intestine, above it intestine which is still functionally active.

Thus in clinical "general peritonitis" the conditions are not dissimilar in kind from those present in ileus duplex, but the level separating the inflamed district of the peritoneum from the upper uninfamed portion is situated higher up. A much more considerable length of the small intestine is paralysed, and perhaps (a) the whole of the ileum may be assumed to be out of action; (b) the caecum and ascending colon will be parietic or actually paralysed, so also will be (c) the descending colon and the pelvic colon. This stage of peritonitis may be described as the stage of hypogastric ileus. I suspect that nearly all cases of general peritonitis pass through this stage, and that in many of them the stage lasts long enough to allow of hopeful surgical treatment on the lines now to be described more in detail.

The parts of the alimentary canal which are still unparalysed, and therefore available for constructing the suggested emergency alimentary canal, are the stomach, the jejunum, and probably the transverse colon, which lies on the boundary line of the inflamed district. All the rest of the intestine, small and large, is paralysed.

Is Jejunostomy a Satisfactory Treatment?

Under these conditions a jejunostomy might be tried, according to Bonney's suggestion. It would re-establish the current in the unparalysed portion of the intestine. It also might be arranged so as to cut off the reflux tide of septic material passing up to the stomach. It might thus conceivably save the patient's life, but as it would cut off the supply of fluid to the greedily thirsty mucosa of the large intestine it would probably fail, for patients with peritonitis are already starved of fluid.

Treatment by Jejuno-transverse-colostomy with Caecostomy.

If a jejunocolostomy is made between the jejunum low down and the middle of the transverse colon, uncontaminated fluid taken into the stomach is passed along the unparalysed jejunum into an unparalysed portion of the large intestine, where it can be absorbed. But the caecum and the rest of the colon are paralysed, and there is no outlet from the transverse colon. Distension of the caecum would follow the operation, and rupture of this viscus might be expected. Here, as in ileus duplex, temporary provision must be made for draining the caecum until the inflamed large bowel has recovered its peristaltic power.

My scheme of treatment, then, is as follows:

(1) For pelvic peritonitis and intestinal obstruction (ileus duplex) consequent thereon—ileo-colostomy to the ascending colon with caecostomy (Fig. 1).

(2) For so-called "general peritonitis"—that is, unlocalized peritonitis, extending roughly up to the level of the umbilicus, with intestinal obstruction (hypogastric ileus)—jejuno-colostomy to the transverse colon, with caecostomy (Fig. 2).

FIG. 1.—Ileus duplex (paralytic obstruction secondary to pelvic peritonitis). Treatment by ileo-colostomy and caecostomy.

In all cases pelvic drainage must be provided.

The advantages gained by such an emergency alimentary canal—consisting of stomach, jejunum, transverse and ascending colon and caecum—are numerous. The normal intestinal current is restored, vomiting ceases, the stomach is not fouled by a reflex of septic intestinal fluid, and becomes once again a clean vessel apt for the digestive processes. For it is clear that fluid regurgitating from the lower intestine will rather pass through the jejuno-colostomy opening into the colon than face the tortuous and active resistance of the jejunum. The jejunum itself receives only the uncontaminated products of digestion from above, and intestinal digestion and absorption can take place unhindered. It is true that the colon will still contain septic fluid regurgitated from below, but the absorptive power of the colon for aught but water is negligible. The colon can perform its important function of water absorption even when its contents are laden with bacteria—their normal condition.

Thus provided with clean food and fluid—the things he most requires—the prospects of the patient's fight with his peritoneal infection are vastly improved.

It may be objected that the steps taken to re-establish the intestinal current will be defeated by the continued upward spread of the peritonitis. In a proportion of cases where the peritoneal infection is virulent this objection is doubtless valid. But it omits to take into account the probability that in many cases intestinal paralysis is the main factor determining the continued spread of the peritonitis. It is well known that distension of a hollow viscus interferes with its blood supply, impairs its nutrition, and renders its walls pervious to the bacteria within. There is every reason to hope that in many cases the relief of the distension in the upper gut will turn the scale in the patient's favour by arresting the further upward spread of the peritonitis. Strong evidence in favour of the supposition is provided by the success of similar treatment in arresting the upward spread of pelvic peritonitis in cases of ileus duplex.

Technique of Jejuno-transverse-colostomy.

The operation of jejunocolostomy can be quickly and easily carried out without evisceration of the intestines and practically without shock. An incision 4 in. long and extending down to a point 1 in. below the umbilicus, is made through the middle of the right or left rectus muscle. The lower border of the transverse colon is exposed and identified and pulled forward. The great omentum is torn through just below the gut, and two fingers are introduced through the rent to seek for a suitable coil of jejunum. The coil selected, like all the small intestine, will be distended, and may be congested, but it should not have lost its lustre or its resilience. It is drawn forwards into the wound, where it lies just below the fold of transverse colon, which has also been withdrawn. Clamps are applied to the two selected pieces of gut, and a lateral anastomosis is made in the ordinary way. The anastomosis can be strengthened subsequently, if desired, by sewing down the great omentum to the surface of the jejunum. The bowel is returned, the incision is sewn up, and a caecostomy is performed in the ordinary way through a separate incision. It is well to tie

FIG. 2.—Hypogastric ileus (paralytic obstruction of early general peritonitis). Treatment by jejuno-transverse-colostomy and caecostomy.

a Paul's tube in the caecum, but experience may show that a large rubber catheter does equally well.

A Case where the Treatment was Successfully Applied.

An opportunity was lately presented to me, in a case now to be described, of testing the validity of the chain of reasoning I have laid before the reader.

Miss H., aged 30, had for some months complained of vague abdominal pain at intervals, but had not sought medical advice.

On December 29th, 1915, she was taken ill with what was supposed to be a chill on the liver. She kept at her work, and did not consult a doctor. The following day vomiting began, and was repeated soon after she took a purgative. The abdominal pain, of a colicky character, was situated in the lower part of the abdomen. On December 31st she went to town as usual, but was sick and ill, and the pain persisted. On January 1st she was worse, and was then first seen by Dr. A. J. Hogg, of Ealing. He found that she had general severe abdominal pain and tenderness, worse on the left side. There was little movement of the abdomen on breathing. The vomiting had been bilious, and the temperature was 100°, the pulse about 90. At 6 p.m. on the same day the pulse was quicker and the temperature higher. There was great pain in the lower part of the abdomen, and she lay on her back with her legs drawn up. On this day for the first time there was pain on micturition, and in the evening Dr. Hogg asked me to see her with him with a view to operation. About 10 p.m., when I saw her, her pulse was 120, her colour good, and she did not appear to be in much distress. There was slight general abdominal distension, and the abdomen moved to a certain extent with respiration. There was no true abdominal rigidity. In the right iliac fossa an indefinite resistance could be felt. On pelvic examination there was extreme tenderness in the region of the pouch of Douglas, with fixation of the uterus, thickening of the right utero-sacral fold, and some resistance of the right broad ligament. The periods were regular, the last one having ceased a fortnight previously. The patient's statements as to the passage of flatus were rather vague, but she did not appear to have passed it more than once in the preceding twenty-four hours.

In view of the early colicky hypogastric pain, of the signs on the right side of the pelvis, and of the pain on micturition, together with the absence of abdominal rigidity and the presence of resistance in the appendix region probably due to swollen ileo-colic glands, we arrived at the conclusion that the

patient was suffering from pelvic appendicitis. It was thought, in view of the continued vomiting, that intestinal obstruction was likely to complicate the case.

First Operation.

Immediate operation was decided upon, and a median hypogastric incision was made. On opening the peritoneum a certain amount of clear fluid escaped. The omentum was adherent in the pelvis, and on separation it was found to be sloughing at its tip. The coils of small intestine, which now came into view, were rather congested, but had not lost their lustre. The pelvis was packed off from the rest of the abdomen, and on passing the hand down into it, some ounces of thick pus escaped, and a mass was found which on extraction proved to be a swollen and gangrenous appendix containing two large concretions. There was superficial sloughing of a portion of the caecum near the base of the appendix. All the intestines in the lower abdomen were distended by flatus and rather congested, but there were no areas of oedematous, collapsed, and deeply-congested intestine such as are seen in typical cases of ileus duplex. The condition appeared to be general paresis of the pelvic and suprapelvic intestines without actual paralysis, and it seemed likely that eserine and pituitary extract would maintain peristalsis in the damaged gut, but it appeared safer to tie a catheter into the caecum and bring it out through the median wound. The pelvis was drained by two large tubes.

After the operation the patient was placed in the Fowler position, saline was administered subcutaneously to the extent of about six pints for the first twenty-four hours, and injections of eserine salicylate were given every six hours in order to produce intestinal contractions. The catheter, either because it was blocked, or because there were no contractions in the intestine, did not act. Turpentine enemata were given, but only produced a little faecal-stained fluid, and no flatus passed per anum. A purgative failed to act, and forty-eight hours after the operation the condition of the patient was most alarming. The abdomen up to the umbilicus was rigid, hard, and tensely distended like a football. Above the umbilicus the distension was not so marked; rigidity was absent, and there was some abdominal movement with respiration. The pulse had risen in frequency. The patient was not sick, but was troubled by constant feelings of nausea which made her unwilling to take nourishment.

Second Operation.

Since I have never seen a patient recover from a similar condition of general peritonitis with complete obstruction, I told the friends that recovery was improbable in any circumstances, and certainly impossible unless something further was done. It appeared certain that the peritonitis had extended as high as the level of the umbilicus, and that the whole of the ileum and the lower colon were suffering from paralysis the result of the peritonitis. The condition of the abdomen above the umbilicus showed, however, that the upper part of the small intestine—say, roughly, the whole of the jejunum—was still capable of normal peristalsis. Though the ascending and descending colon were probably paralytic, the transverse colon lying at the upper limit of the peritonitic area might be presumed still to retain its contractile power. A lateral anastomosis between the lower jejunum and the transverse colon seemed, therefore, to be the rational method of treatment if combined with a caecostomy to afford a free exit for the contents of the large intestine.

The friends of the patient consented to further operative measures, and through an incision 4 in. long situated $\frac{1}{2}$ in. to the right of the middle line and extending downwards to an inch below the umbilicus, I reopened the abdomen.

The incision exposed the lower border of the transverse colon, which was distended by flatus and apparently not inflamed. Just below the transverse colon I tore through the great omentum and thus obtained access to the upper small intestine. The first coils it presented (belonging probably to the upper ileum or lower jejunum) were too much distended and inflamed to permit of their use for the lateral anastomosis, a proof that the peritonitis had actually extended up to the umbilicus. Two fingers introduced in a direction upwards to the left succeeded in withdrawing a higher coil, which though distended was not inflamed. This coil was brought forward in the opening in the great omentum and clamped. A clamp was next applied to the closely adjoining portion of the transverse colon, which also had been brought out into the wound. The area was packed off, and a lateral anastomosis was made in the usual way. Since the small intestine, owing to distension and slight oedema, did not hold stitches well, a portion of the great omentum was drawn down over the suture line so as to strengthen it. The bowel was returned and the abdominal incision was sewn up. The caecum was next sought in the original wound at the point where the catheter was tied in it, and here a Paul's tube was inserted.

After-History.

The patient bore the operation well, and her pulse at the end of it was about 120. It should be added, as indicating the virulence of the bacteria present, that the whole of the surfaces of the original incision were at this time covered by a superficial grey slough. The result of this operation was most satisfactory. It was followed by the administration of a purgative, and the following day the colotomy had acted well. A certain amount of fluid material together with flatus had also passed by the anus. The lower abdomen, though still tender, had lost its tension, and the rigidity was less marked. Three days

after the operation a tender swelling developed in the right iliac region. There was also some suppuration of the incision of the second operation. The right iliac swelling was opened two days later, and proved to be an abscess in the abdominal parietes, probably due to extension of infection from the region of the second operation. No leakage took place at the lateral anastomosis. When the Paul's tube came out there was a considerable escape of semifluid intestinal contents from the caecostomy, and the bowels also continued to act per anum. The patient's temperature fell, the wound assumed a healthy aspect, and her appetite returned. For some time after the operation a fluid action of the colotomy wound followed each meal. Nutrition rapidly improved and strength returned. The caecostomy wound has contracted, and will no doubt soon close.

The anaesthetics were given by Mr. Herbert Charles. I am indebted to Drs. A. J. Hogg and W. B. Stanford for their unremitting care in the after-treatment, which alone rendered recovery possible.

Conclusion.

The condition of a patient suffering from general peritonitis which is spreading upwards through his abdomen may be compared with the predicament of a house invaded by a rising flood. The householder can only survive the crisis if he retires upwards to the first floor. There he must improvise arrangements for carrying out in a rudimentary fashion the primary needs of existence. There he must cook, eat, and sleep until the flood subsides. The essence of this paper is a suggestion that a similar policy may save patients attacked by the rising flood of a general peritonitis.

Treatment of Gunshot Wounds of the Abdomen.

Colonel Cuthbert Wallace² tells us that men shot through the abdomen die mainly from one of three causes: haemorrhage, peritonitis, or intestinal obstruction following peritonitis. Most of the deaths from haemorrhage will take place before the hospital is reached. In the survivors an early operation for suturing or resection of the bowel may avert the dangers of peritonitis and obstruction. It is a triumph of surgery, and still more of organization, that operations of this character are now relatively successful. In wounds of the small gut, when the patient arrives in a condition that permits operation, Colonel Wallace³ and his colleagues have secured about 50 per cent. of recoveries, a remarkable result when it is borne in mind that the mortality of expectant treatment is 100 per cent.⁴ It is an unsolved problem how many of the residual cases die after operation from the mere intensity of the peritoneal inflammation. It seems likely that some of these cases are capable of recovery from the peritonitis alone, but that their chance is spoilt by the onset of obstruction. To such cases the method suggested in this paper is clearly applicable, and possibly with success.

But, though its hypotheses have been stated dogmatically for the sake of emphasis, my paper is to be regarded as suggestive only. I hold no brief for my conclusions, and only ask that they should be tested. It is unnecessary to offer a defence against the charge of premature publication, for at the present crisis many rules, usually salutary, must be suspended in the public interest for the duration of the war.

REFERENCES.

¹ *British Journal of Surgery*, vol. iii, No. 10, 1915. ² *Lancet*, December 18th, 1915. ³ *Lancet*, March 4th, 1915. ⁴ *Delore, Lyon Chirurgical*, September, 1915.

THE United States Bureau of the Census is, we learn from the *Boston Medical and Surgical Journal*, about to issue a monograph on deaths from cancer in the United States during the year 1914. It will consist of tables showing the deaths from cancer, according to the site of the disease, age, sex, colour, nativity, and marital condition, for the registration area, the several registration States, and the usual subdivisions. The seven titles for cancer in the international list of the causes of death are subdivided into twenty-nine headings referring to the exact site of the disease. It is proposed to tabulate separately the returns in which the diagnosis was "reasonably certain" and those in which it was "uncertain." In arriving at this distinction, a report is classed as "certain" if the diagnosis was confirmed by microscopic examination of tissues, by surgical operation, or by autopsy. All cases of internal cancer in which the diagnosis was based on clinical observation alone are classified as "uncertain."