or ward, and, when supplemented, can be employed for surgical operations.

Note.—Our thanks are due to the medical director and members of the staff of No. — (Lakeside, U.S.A.) General Hospital, who have co-operated in this work. Major Alexander Lambert, Medical Director of the American Red Cross in France, on whose personal staff one of us (J. T. G.) had the pleasure of serving, has in many ways stimulated the working on this problem, and we take pleasure in expressing our warm appreciation of his interest and help.

THE EFFECT OF A DEEP HELD INSPIRATION ON THE MURMUR OF SLIGHT AORTIC REGURGITATION IN YOUNG SUBJECTS.

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I wish to draw attention to what I believe to be an undescribed clinical phenomenon—namely, the marked diminution or complete disappearance of the diastolic murmur of aortic regurgitation (in young subjects with only slight regurgitation) when a deep breath is taken and held.

The well recognized disappearance of a systolic murmur at or near the heart's apex under similar conditions has often been regarded as evidence in favour of such a murmur being exocardial—"cardio-pulmonary" as it has been called—rather than endocardial. Certainly some murmurs, reasonably diagnosed as "cardio-pulmonary," because most audible over areas in which lung tissue overlaps the heart, varying obviously in intensity with the phases of respiration, ceasing in recumbency, not following the usual rules of "conduction" of mitral murmurs, although heard at or near the heart's apex, do disappear when a deep breath is taken and held. But recently I have been led to wonder whether other murmurs, due to real mitral lesions, may not also disappear in similar fashion. Of such I cannot now speak with any confidence, but it is at least interesting to discover that an actual organic murmur like that of aortic regurgitation may also lessen or vanish during deep sustained inspiration. The three following cases have all been seen, and my conclusions verified, by valued colleagues, so that the truth of my observations does not rest on my own unsupported statements.

CASE I.

Pte. G., aged 19, had a well-marked aortic regurgitant murmur whose area of audibility is indicated approximately in Fig. 1. There was no doubt about this murmur; pulmonary regurgitation is an excessively rare condition, and, in my experience (limited to cases of malignant endocarditis), has a murmur well heard over the upper left front of the chest, where this was not heard. The lesion was clearly slight, for the radial pulse was not "water-hammer," and there was no visible pulsation up to the ears in the neck. The heart's apex beat was in the fifth space, a little outside the left mammary line, when the patient was upright, and it was rather diffuse. The limits of the cardiac dullness were:

Standing.	Recumbent.
Right edge: $\frac{7}{8}$ in. to R. of midline	$\frac{3}{4}$ in. to R. of midline.
Left edge: $4\frac{1}{8}$ in. to L. of midline	$4\frac{1}{4}$ in. to L. of midline.

There was no other murmur in any position. Curiously, the weather seemed to make a difference in the effects of inspiration, as I note below. On December 30th, during very cold weather, I noticed that the murmur was almost obliterated when the patient took and held a very deep breath, whether examined in the erect or recumbent position. On expiration the murmur returned. On December 31st, the weather being warm and mild, the deep held breath entirely obliterated the murmur. On January 1st, a warm day, the murmur at the sternal junction of the fourth left rib cartilage was entirely lost on taking and holding a deep breath; in recumbency a sharp reduplicated second sound remained. On January 9th, a warm

day, the murmur was quite lost in the erect position, but not quite lost in the recumbent position, when the deep breath was taken and held.

CASE II.

Driver W., aged 26, admitted August 19th, 1917, with slight aortic regurgitation, and slight double mitral murmur. Fig. 2 shows approximately the area of audibility of the aortic murmur. There was no doubt of the nature of the murmur, there being no murmur heard over or to the left of the pulmonary artery. The lesion was slight, judging by the almost complete absence of pulsation in the neck and the character of the radial pulse.

The diastolic murmur quite disappeared on taking and holding a very deep breath in the erect position, and nearly disappeared in the recumbent position.

FIG. 2—M, Approximate area of audibility of murmur, standing. C, Cardiac dullness, standing. o, Position of stethoscope during observations.

CASE III.

Pte. R., aged 20, admitted November 18th, 1917. I found presystolic and systolic mitral and a soft diastolic aortic murmur. The pulse was not water-hammer, and there was no pulsation to the ear in the neck. On taking and holding a deep breath the diastolic murmur diminished distinctly, not immediately but by degrees, and, on releasing the breath, returned, but more quickly. I believe the same gradual disappearance of the murmur occurred in the other cases also. On November 25th, at the level of the fourth left costal cartilage (showery stormy day) the diastolic murmur quite disappeared on holding a deep breath. On December 1st it quite disappeared, equally in erect and recumbent positions. The condition is illustrated in Fig. 3.

FIG. 3—C, Cardiac dullness, standing. o, Position of stethoscope during observations.

Case I was seen by my colleagues, Dr. Clapp and Dr. Gates; Case II by Dr. Williamson and Dr. Gates; Case III by Dr. Williamson and Dr. Gates.

With regard to possible explanations, mere extra overlapping with lung could not have concealed the murmur, for the second sound, which preceded it, remained quite clear. My idea has been that perhaps the negative pressure set up in the thorax by the deep inspiration partly neutralized the elastic recoil of the aorta, thus lessening the force producing the regurgitation; and that, further, seeing that the effect developed not at once but gradually, the increased volume of the pulmonary capillaries in deep inspiration delayed the entry of blood into the left side of the heart, and produced a rather less full aorta. If these theories are correct they will help to explain the influence (if real) of weather, since on a cold day the aortic tension may perhaps be higher, owing to constriction of surface vessels, than on a warmer day.

It is, however, not to this attempt at explanation, but to the phenomenon itself, that I desire to draw attention.

THE CONSERVATIVE SURGERY OF THE HAND AS ILLUSTRATED BY A CASE OF TENDON GRAFTING.

BY

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It will readily be granted that although the work of the instrument maker in making artificial limbs is excellent, nothing yet invented can take the place of the human hand or even of a thumb and one or more fingers. There are at the present time many cases coming before surgeons doing military work in which the possibility of saving even one finger has to be seriously considered.

The purpose of this paper is to show the possibility of tendon grafting, which I think must have escaped the memory of orthopaedic surgeons, as I have not seen it made use of in any of the hospitals I have inspected

during the war. On May 24th, 1889, I read a paper on the subject before the Clinical Society of London and at the same time showed a successful case. In a leaderette in the *BRITISH MEDICAL JOURNAL* for June 1st, 1889, occurs the following statement:

Among the papers read last Friday at the Clinical Society was one which chronicles another advance in conservative surgery, showing that another tissue of the body (tendon) can be successfully grafted as skin, bone, and nerve have been.

The following is a history of the case referred to:

I was asked in November, 1883, to see J. L., a weaver, aged 32, with a view to amputating his right arm for an injury caused by machinery.

The whole of the inner side of the forearm up to the elbow was hopelessly crushed and lacerated, exposing the ulna from one end to the other, but not opening the elbow-joint. The muscles were torn and the bone was rasped bare of periosteum. The wrist-joint was opened and the inner row of carpal bones was crushed. The three inner fingers were hopelessly smashed and the whole dorsum of the hand was swept clean of skin and tendons except the extensors of the thumb, which were bared but not otherwise damaged.

The index finger, excepting that its metacarpo-carpal joint was opened and that its extensor tendons had been completely torn away, was not further injured. After a little consideration, I decided to try to save the radius, the radial half of the carpus, and the thumb and index finger, and, in order to give the possibility of a useful index, to make an extensor indicis from the flexor tendon of the smashed middle finger.

The whole limb was scrubbed with soap and carbolized water, well rubbed with benzol and then thoroughly washed with 1 in 1,000 perchloride of mercury solution.

As the skin of the inner side of the forearm was destroyed and the bone injured, the ulna was excised to within a short distance of the elbow. The inner side of the carpus was removed, together with the three inner fingers, the skin of their palmar aspects being saved to lap over and cover the dorsum of the hand. The flexor tendon of the middle finger was taken out of the sheath, and four and a half inches of it detached and placed over the site of the extensor indicis. The proximal end of the tendon being stitched to the fleshy belly of the extensor communis digitorum, the distal end being fixed to the small portion of tendon left near its insertion into the phalanx. The skin was brought over to cover as nearly as possible. No drainage was employed. The wounds pursued an aseptic course, and there was no sloughing of tendon or skin. The patient returned home within a month, and was advised to try to use his finger and thumb.

He returned to his work in February, and when shown to the members of the Clinical Society he said he could perform his work as a weaver as well as ever. The movements of the fingers were very good, both in flexion and extension; the wrist-joint was movable, and both pronation and supination could be effected. During extension of the index finger the new tendon could be felt to move freely under the integument of the dorsum of the hand.

The man expressed himself as perfectly satisfied with his hand, which enabled him to earn his living as well as ever he could.

My apology for bringing to light this work after thirty years is that I venture to think an unsightly hand with a thumb and a finger is much better than any artificial limb, however perfect it may be.

ACUTE INTESTINAL OBSTRUCTION DUE TO JACKSON'S MEMBRANE.

BY

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It has been doubted by some whether the membrane covering the proximal portion of the ascending colon causes obstruction to the passage of the intestinal contents. It has been my belief that such was the case, and that to this might be ascribed the symptoms associated with this condition. In cases where the pericolicitis (so called) manifests itself as a filmy membrane little or no obstruction can be demonstrated on examination of the colon. Where, however, the Jacksonian membrane is associated with fibrous bands crossing the colon, varying degrees of constriction may be noted. It is possible that this partial obstruction may also account for the dilatation and elongation of the caecum associated with such cases. The clinical symptoms would also suggest this, for the colicky pain, occasional vomiting, gurgling over the caecum, and tenderness on pressure, point to a temporary obstruction. This syndrome forms a common type of dyspepsia

which can be recognized, but which too frequently, even now, is regarded as appendicitis and for which simple appendectomy is performed. That such a band can cause greatly exaggerated symptoms and result in acute intestinal obstruction the details of the following case show. I believe it an uncommon type of acute obstruction and so venture to place the case on record.

Mrs. S., aged 41, was admitted to the Royal Victoria Infirmary on January 18th, 1916, with symptoms of acute intestinal obstruction.

History.

For some years she had had attacks of abdominal pain and also marked constipation, the bowels only moving after an aperient. Three weeks before admission the pains had become worse, she vomited occasionally and had increased difficulty in getting the bowels open. For a week the pain had been severe, vomiting incessant and there had been no action of the bowels, while flatus had not been passed for three days. She had passed blood and slime by the rectum during the last three weeks.

On admission the temperature was 99.8°. The patient looked ill, and although fairly well nourished had a sallow complexion and had few teeth left. The abdomen was moderately distended, a distinct tumour being visible in the left iliac fossa. This tumour was composed of distended intestine; peristalsis could be seen and felt, while borborygmi could be heard during the contraction of the intestine, which caused the patient evident pain. Rectal examination was negative. A diagnosis was made of chronic intestinal obstruction become acute due probably to carcinoma of the pelvic colon.

First Operation.

On January 18th, 1916, the abdomen was opened in the left iliac fossa. Free fluid escaped on opening the peritoneum. A tense cyst was found occupying the left iliac fossa and extending to the bottom of the pelvis. The swelling had the appearance of a thin-walled ovarian cyst, but was tympanitic, and the taenia coli at once distinguished it as the caecum. No part of it could be drawn out of the wound, so it was punctured and a Paul's tube tied in. After evacuating part of its contents the caecum was sutured to the margin of the incision.

The patient improved greatly after the operation. The distension subsided and the bowels were moved normally on several occasions.

Second Operation.

On February 2nd, 1916, the abdomen was opened in the middle line below the umbilicus. The collapsed caecum was found crossing the abdomen from the right side to the caecostomy opening in the left iliac fossa. The lower part of the ascending colon was mobile and was covered by a thin membrane, at the upper border of which was a tight band passing from the parietal peritoneum to the inner border of the colon. The band was the thickness of a match stalk, it tightly puckered the ascending colon, and it was with difficulty that two fingers could be inserted beneath it. The band was removed and part of the membrane stripped away. The caecostomy opening was dissected free from the skin and closed, the caecum being returned to the abdomen, which was then closed. The appendix was normal and no trace of inflammatory adhesions were present.

After-History.

The patient was discharged from the hospital, well, on February 17th, 1916.

In November, 1916, the patient remained in good health, though she still had to take opening medicine.

On two occasions, in August and October, 1916, she had attacks of abdominal pain and vomiting, which necessitated her staying in bed for a few days. Should these attacks persist, further treatment of caecostomy or short-circuiting may become necessary.

REDUCTION EN MASSE OF A STRANGULATED DIRECT INGUINAL HERNIA.

BY

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This case impressed me as a remarkable one in several respects, and I venture to think that it should not be allowed to drift into one's personal experience without a record.

Early in September, 1917, I was asked by Dr. Taggart, of Heaton Moor, Stockport, to see a lady who three days previously had begun suddenly to have pain in the abdomen and right groin; a few minutes afterwards she vomited several times, and noticed a lump in the right groin; she had never previously suffered from hernia.

Dr. Taggart saw her some two hours after the onset and found a tense rounded swelling in the right inguinal canal, about the size of a Tangerine orange, which did not yield an impulse on coughing; the swelling was clearly a strangulated hernia, and