II.—TWO CASES OF ACUTE APPENDICITIS SUCCESSFULLY TREATED BY OPERATION.

Reported by JAMES SMITH, M.D.

Commentary by CHARLES W. CATHCART, F.R.C.S.

On Wednesday, Feb. 28th, 1894, I was asked to see A. H., 20 years of age, a barber to trade, residing at Restalrig.

History.—He was in good health when he rose on Tuesday morning. While at breakfast he was seized with severe pain in the abdomen, which began about the umbilicus and afterwards radiated towards the right iliac fossa. It came on by degrees, and wore off again while he was on his way to work at Portobello. About 11 A.M. it got worse; by 1 P.M. he "felt swollen" and had to go to stool, and the motion he passed was hard and painful. He then took dinner, but immediately after it was seized by intense pain in the epigastrium, the pain being so severe as to "double him up." He vomited eight or nine times before 4 o'clock. He was taken home at 4.30 P.M., and his mother said he was then very white and could not straighten himself. He vomited twice after he got home. The vomited matter consisted of food and sour watery liquid. Hot fomentations were applied, a dose of castor oil and brandy administered; then at 1 A.M. he got two Gregory's pills, but all gave him no motion or relief.

At 9 A.M. on the 28th of February I found him lying in bed on his left side, his face flushed, knees drawn up, tongue brown in centre and red at edges. Temp. 99° F., pulse 108, well filled. Respiration short and interrupted.

On examining the abdomen I found the recti, especially the right, restricted in action; over the right iliac region the movements impaired.

Palpation.—Slight pressure over caecal region gave rise to pain. At a point a little above the middle of Poupart's ligament the finger could feel elongated nodule, painful on pressure. Around this there was thickened resistance.

Percussion gave a slightly dull note.

Provisional Diagnosis.—Appendicitis.

I saw Mr Cathcart about the case, and described the symptoms...
Vermiform Appendix. Vermiform Appendix, laid open.
Removed from A. H., age 20, on Feb. 29th, 1894, 27 hours after onset.

Life size.

Vermiform Appendix. Vermiform Appendix, laid open.
Removed from T. C., age 22, on March 7th, 1894, 32 hours after onset of symptoms.

Life size.
to him. He concurred with my diagnosis, and kindly saw the patient with me.

After examining him, Mr Cathcart felt sure we had to deal with a severe case of acute appendicitis, and he operated at 11 A.M. that same forenoon. An incision was made along the right semilunar line. The appendix, when brought to the surface, was found to be extremely dilated, dark red, and in places dark and gangrenous. There was some lymph round about it and on the surface, and yellow spots apparently coming from within. When laid open it was found to contain a dark fluid, two thick bristle-like hairs, and a concretion the size of a large orange pip. The mucous lining of the swollen part was of a dark green, almost black colour, sloughy, but without any actual perforation. (See Plate.)

The appendix was removed and the wound dressed.

7.30 P.M.—Temp. 97°-8 F.; pulse 72, strong. Slight sickness present, pain over wound severe. Ordered morphia suppository ¼ gr.

March 1.—8.30 A.M.—Temp. 98°-7 F.; pulse 72, well filled, regular; tongue moist, yellow coating, face flushed, pupils slightly dilated; feeling better. Had several attacks of vomiting during the night, vomited matter dark green; passed about 40 ozs. of high-coloured urine.

Wound dressed; considerable amount of serum oozed out during the night.

Movements of abdominal wall better.

Ordered bovinine, teaspoonful every alternate hour, with milk and potash between.

4 P.M.—Temp. 98°-2 F.; pulse 72; tongue cleaning; face flushed; irritable cough present; passed flatus; ordered poultice for cough, also Mellin’s food in milk every three hours.

March 2.—8.30 A.M.—Temp. 97°-4 F.; pulse 74, strong; tongue coated; conjunctive yellow; vomited dark green bilious fluid during the night. Ordered a mixture of rhubarb, bicarbonate of soda, and calomel, to be followed by saline. Wound dressed.

6 P.M.—Temp. 98° F.; pulse 60, strong, regular. Slept well; passed urine, still high coloured and bilious, with large deposit of urates; vomited half a pint of dark-green bilious fluid; no pain, and no motion.

March 3.—8.30 A.M.—Temp. 98° F.; pulse 72. No motion, but feels well. Gauze drain taken out and tube put in. Gave enema of soap and water.

7 P.M.—Temp. 98°-2 F.; pulse 68, good; no motion.

March 4.—8.30 A.M.—Temp. 98° F.; pulse 94, good. Drainage tube taken out; wound doing well. Ordered rhubarb, soda, and calomel, to be followed by a saline.

7 P.M.—Temp. 98°-1 F.; pulse 60, good; no motion. Gave enema of soap and water.

March 6.—8.30 A.M.—Temp. 97°-6 F.; pulse 80, strong; had two motions, dark brown, pultaceous. All stitches taken out,
wound supported by plaster. Urine clearer. There was nothing further of importance in this case; the patient made a good recovery, and was out at the end of fourth week, and was shown to the Medico-Chirurgical Society on the evening of July 4, 1894, in excellent health, with the wound soundly healed.

Case of T. C.

T. C., aged 22, clerk, residing at Royal Park Terrace, went to bed in excellent health on the night of March 5, 1894. About 3 A.M. he was awakened by a tight feeling across the belly, followed by pain in the epigastrium, and vomiting. The vomited matter consisted of undigested food, then greenish-yellow bilious matter. The pain then shifted into the right iliac region, and lasted all night; vomiting also continued.

In the morning I was sent for, and saw him at 9 A.M. on the 6th March 1894.

I found him lying on his back. The expression of face did not at all indicate suffering. He had a bright, clear complexion; tongue slightly coated; temp. 98° F.; pulse 72, fairly well filled; bowels moved the previous evening.

On examining the abdomen I found the respiratory movements were diminished on the right side, especially over the caecal region.

Palpation.—About an inch and a half below the anterior superior iliac spine, and about the same distance internal to the spine, the palpating finger could detect a small nodular mass, feeling soft, like an elongated gland, and very painful. This was the most painful point.

Around this point percussion elicited a dull note. Deep pressure intensified the pain.

Provisional Diagnosis.—Appendicitis beginning. I injected 1/2 gr. morphia subcutaneously over the painful part. Had a talk with Mr Cathcart about the case. He was inclined to think, from the description I gave him of the symptoms, that it was one of commencing appendicitis. He very kindly saw the patient twice with me in the evening.

4.30 P.M.—Temp. 99.2° F., pulse 60. Patient slept since I saw him last. The dulness slightly increased; the movements still more impaired. No vomiting, no retching, and no motion.

6.30 P.M.—Temp. 100° F.; pulse 74, not so regular, fairly well filled; no motion, no flatus passed since morning. Pain continued, but not so severe. Tenderness in pouch of Douglas. Mr Cathcart examined him, and his diagnosis was appendicitis.

10.30 P.M.—Temp. 102° F.; pulse 90, irregular; the area of pain extending; abdominal movements still more restricted on the right side. I injected 1/4 gr. morphia hypodermically.

March 7.—9 A.M.—Temp. 100° F.; pulse 96, soft, regular. Slept
well; tongue thickly coated; passed flatus, but no motion. Took milk and beef-tea fairly well. Abdominal movements still more impaired; area of dulness increased; area of pain increased; surface more tender to touch. Pressure on left side of left rectus produced pain in right iliac fossa. Tenderness in pouch of Douglas not so distinct.

11 a.m.—Mr Cathcart operated. He opened the abdomen in the right semilunar line. On opening the peritoneal cavity a considerable amount of serum escaped. He had considerable difficulty in finding the appendix. When found it was bound down deeper than usual in the iliac fossa, and when freed and brought to the surface it was from three to four times its normal size, and was removed and the wound dressed. The distal two-thirds was very much inflamed, dark, almost black at places, and full of fluid. On opening it, after its removal, the mucous membrane was beginning to slough, and across the middle of the cavity the mucous membrane was thrown into a distinct fold or valve. The root of the appendix was two or three times its normal size. (See Plate.)

4.30 p.m.—Temp. 101°5 F.; pulse 84, fairly good. Much pain; restless and thirsty. Ordered morphia suppository, and milk and potash to be given at short intervals.

9 p.m.—Temp. 100°3 F.; pulse 90, irregular, fairly strong. Felt pain in area of stitches. Restless; felt faint; ordered a little brandy every three or four hours.

March 8.—9 a.m.—Temp. 99°7 F.; pulse 84, stronger; tongue covered with thick fur; urine high coloured. Had fairly good night. Wound dressed; doing well.

7.30 p.m.—Temp. 101°2 F.; pulse 86, strong, irregular; feeling well; taking milk and beef-tea.

March 9.—8.30 a.m.—Temp. 98° F.; pulse 83, fairly strong. Had very restless night; tongue foul, coated; breath smelling badly; no motion since the 5th. Wound dressed; looking well. Movements of abdomen better. Ordered calomel 6 grs., to be followed by saline. Mouth to be washed by weak carbolic lotion; milk and beef-tea at short intervals.

3.30 p.m.—Temp. 99°7 F.; pulse 80, good. Bowels moved once; motion dark, lumpy, and offensive.

7 p.m.—Temp. 99°3 F.; pulse 80, strong.

March 10.—9 a.m.—Temp. 97°7 F.; pulse 80. Had good night; no motion. Ordered calomel again.

7 p.m.—Temp. 98°4 F.; pulse 80, good. No motion. Vomited about three hours after calomel. The vomited matter was sour yellow liquid. Patient retains the milk and beef-tea well.

March 11.—8.30 a.m.—Temp. 98° F.; pulse 80. Wound dressed; tube taken out. No motion. Ordered another calomel and saline.

March 12.—10 a.m.—Temp. 97°8 F.; pulse 80. Patient doing well. Bowels moved once.

7 p.m.—Temp. 98°4 F.; pulse 78.
March 13.—8.30 a.m.—Temp. 98°7' F.; pulse 72. Wound dressed; doing well. Bowels moved once.
7 p.m.—Temp. 98°4 F.; pulse 74.
March 14.—9 a.m.—Temp. 98° F.; pulse 72.
March 15.—10 a.m.—Temp. 98° F.; pulse 80, good.
This patient made an excellent recovery, and was able to leave the house at the end of four weeks.
He was shown to the members of the Medico-Chirurgical Society on July 4, 1894, along with A. H., and in an equally satisfactory condition.

Remarks on the Pathology and Treatment of Acute Appendicitis based on the two previous Cases, by Charles W. Cathcart.

There are few cases in practice which call for a "happy mean" in action more strongly than do those which are now grouped under the head of appendicitis. While some surgeons, chiefly in America perhaps, consider that the mere diagnosis of inflammation in an appendix is a sufficient warrant for its summary removal, others, and with them a large number of physicians who, of course, are the first to see such cases, go on temporising with even those of the worst kind till the one chance of relief by operation is past and gone. Each has his own class of case upon which he founds this faith. The temporising practitioner remembers only the mild forms of the disease, where a few days' rest in bed, hot fomentations, and a purge have cleared up the anxious symptoms. On the other hand, the over zealous surgeon keeps his eye exclusively on the patients who have been commended to his care when the appendix was perforated or gangrenous, suppurative peritonitis widely diffused, and the pelvis full of pus, and where an operation, if attempted, has only hastened the end. What is really wanted is the power of diagnosing at a sufficiently early stage the cases which demand an operation from those which will recover under palliative treatment. The latter are in the majority, and it would be a great misfortune if we could never recognise them, for otherwise, in order to save the endangered minority, we would need to subject many patients to an unnecessary operation, even if we could gain their consent, which is doubtful. I am not disposed to minimise the evils of an operation for removing the appendix. However small the risk to life may be when the details are carried out with adequate skill and care, still "accidents will happen," the anxiety to the patients and their friends is unavoidable, and the sure conviction that the operation is the lesser of two evils can be its only justification.

If, however, in some quarters there is a danger of too frequent operations, that danger does not seem to threaten us in Edinburgh. We need not stop, therefore, to argue that many mild cases of appendicitis will recover under palliative treatment. What
seems more necessary to remember is that many patients have died and still die from acute perforative appendicitis and its complications under palliative treatment. This will lead to what is the chief purpose of these remarks,—the enquiry whether recent investigations, post-mortem and clinical, help us, and if so, how far, to recognise such cases in time.

My own attention was first sharply roused to this subject by a case of the worst type which came under my care some years ago, before operations had come into vogue. An able and very promising young man, X., went to bed one night in apparent health, and at 2 A.M. awoke with intense pain in the right iliac region. Having been summoned a few hours afterwards, I saw him at 8 A.M., and found him suffering from great pain and tenderness in the right iliac fossa, with a high temperature, a quick thready pulse, and a very anxious look. His thighs were flexed, and his abdomen remained absolutely still in respiration. I applied leeches and hot fomentations to the part, deadened the pain with morphia, and allowed only a minimum of fluid food by the mouth. He remained in much the same condition for twenty-four hours, then got rapidly weaker, and died within forty-eight hours of the first onset. At the post-mortem examination the appendix was found ruptured about the middle, but not gangrenous, and the abdomen was full of putrid pus, so that this must have been one of those cases of rupture of the appendix without appreciable previous inflammation. The patient's only chance in this instance would have been a very early operation, probably on the forenoon following the onset, i.e. within twelve hours. The responsibility of the delay rested on myself, and the result was a lesson never to be forgotten. Since then I have been called to see three cases of perforative appendicitis at a time when, as it proved, they had gone too far to be relieved by operation. In all of them I undertook the operation as a forlorn hope, but without success. One patient died during the administration of the anaesthetic; the other two bore the operation well, but, although the ruptured appendix was removed and a collection of pus round it evacuated, neither survived longer than the third day. Two of the above three cases were patients in the Infirmary, and besides them, in my visits to the post-mortem theatre, I have been present at the post-mortem examination of so many cases of a similar kind (even up to the present summer) that I feel sure that severe appendicitis is still far from being generally recognised while in its remediable stage.

During the last ten years, and especially during the last five, a great deal has been written upon the etiology of this disease. Many important facts have been established, but, although the mists of uncertainty which long veiled the subject are gradually rising, much still remains to be cleared up. The two cases now recorded by Dr Smith are examples of only one of the types of the
disease—i.e., severe appendicitis; but the one, perhaps, which from a practical point of view it is most difficult to recognise. It may be well, therefore, to consider carefully what information can be gathered from these cases, and we may state some of the more important points as follow:—

1. The lumen of the appendix is apt to become narrowed or blocked at some point either with (A. H.) or without (T. C.) the presence of a calculus or concretion—(whether the partition in T. C.'s and similar cases is due to a former calculus or not it is difficult to say).

2. The blockage may exist without causing symptoms, but may at any moment give trouble, without evident exciting cause, and without warning.

3. The dangerous factor in such cases is not so much mere accumulation of fluid behind the obstruction, as the fermentation of the fluid, for we found inflammation of the coats of the appendix in the obstructed part, and beyond it, ulceration of the mucous membranes behind the obstruction, as well as impending gangrene and perforation, and such changes would not result from mere distension.

4. Peritonitis may occur without perforation. Although no perforation had occurred in either case, in both there was peritonitis, with lymphy adhesions and little fluid in A. H.'s case, and with less lymph and more fluid in T. C.'s case.

5. After a severe onset, a lull in the severity of the symptoms may be consistent with steady progress of the inflamed appendix towards gangrene, as in A. H.'s case; or towards perforation, as in T. C.'s case.

I wish to refer in detail especially to the last four of those points. As to the first, I will only express my adherence to the view so well worked out by Dr R. J. A. Berry,¹ that the concretions are formed within the appendix, and are not forced into it from the cæcum, as Talamon supposes.

2. Blocking of the Appendix.—Although no definite cause for a narrowing being changed into a blocking may always be traceable, still we can see how such might easily be brought about. To understand this we must remember that when the circumference of a tube is increased owing to infiltration of its walls, the lumen is diminished,—not increased, as we are apt at first to suppose. In the case of the prepuce, for instance, we often see that when the part is swollen from soft sores or other causes of inflammation, the orifice becomes so narrow that it cannot be drawn back so as to expose the glans. As soon, however, as the swelling subsides, the orifice again enlarges. Applying this to the case in point, suppose that there is a narrowing of the lumen of the appendix from cicatricial contrac-

¹ "Pathology of the Vermiform Appendix," Journal of Pathology, 1895, p. 164.
tion, or the presence of a calculus or foreign body. Some slight and otherwise trivial bruising, an accumulation of faeces in the cæcum, or some digestive disturbance may excite congestion in the appendix, and at once the consequent further narrowing of its lumen may become serious. Fluid may be accumulated behind the obstruction, and, by fermenting, hurry the passing congestion into inflammation with all its dangerous possibilities. Had there been no previous narrowing extensive enough to be serious, such a congestion might, by causing a partial obstruction, lead to one of those subacute attacks of appendicitis which do well with soothing applications and a purge.

3. Cause of Gangrene.—The points noted under this head open up the very interesting and important question as to why gangrene should so often terminate inflammation of the appendix. The theories which have been advanced to account for the frequent occurrence of gangrene mostly turn on questions of vascular supply, but I confess that they have never seemed to me to be convincing. I do not propose to discuss what seems unsatisfactory in these theories, but will rather offer what I think is a better explanation of the facts. If we only remember that we have to deal with a blind tube, blocked at some part of its lumen, and distended behind that point with a fermenting fluid, we can see a sufficient reason for an intense inflammation running on to gangrene. It is not even necessary to assume an initial low vitality in the vermiform appendix, although that may actually be an additional factor to its disadvantage. If we consider what happens in one of the forms of sloughing of the prepuce, we will perhaps understand this better.

When a man acquires soft sores beneath a long and narrow-orificed prepuce, the discharge is pent up, and bathes the whole of the reflected portion of the prepuce. From this circumstance and from the many ulcers which form, the fermenting fluid gains access simultaneously to a large area of relatively thin tissue. A severe inflammation is the consequence, and this often ends in gangrene and sloughing of the greater part of the prepuce. That no specially virulent micro-organism has been at work may be known from the fact that as soon as the slough, by separating, has allowed the discharge to escape, the inflammation subsides. In so far this form of gangrene is distinct from the true sloughing phagadæna of the penis, which tends to spread.

If the highly vascular skin of the prepuce may thus become gangrenous when bathed inside by a discharge which is only partially confined, we need not wonder if the less vitally active vermiform appendix runs into the same condition when, owing to the blockage, tension of the walls is superadded to the interstitial septic inflammation. We must not forget, however, that the gangrene of the appendix does not cease, as it does in this form of sloughing of the prepuce, after rupture has taken place; but
a consideration of the surrounding conditions of the two contrasted parts will explain the difference in the progress of the disease. The penis being on the surface of the body, the discharge, when set free from the prepuce by the separation of the slough, at once escapes. On the other hand, since the appendix is within the peritoneal cavity, the fluid which bursts from its interior does not get away, but only accumulates on its outer side. Hence a rupture or slough in this case, instead of relieving the part, will only add to its complications, and we may thus easily see why the gangrene should spread, as it often does, beyond the part originally affected.

This view of the real cause of gangrene in appendicitis, if correct, is important as affording, as I shall afterwards try to show, good ground for early operation.

4. Peritonitis without Rupture.—These two cases confirm what has often been observed before as to the existence of peritonitis round an inflamed but still intact portion of the alimentary canal. The subject is fully discussed by Treves in his admirable Lectures on Peritonitis.1 The micro-organism which has been shown to be most frequently present in such cases is the bacterium coli commune; and the form of peritonitis thus caused, although non-suppurative at first, may afterwards become so if the condition be allowed to continue unchecked. This, of course, explains why in some cases there is suppuration round an inflamed appendix although it has never ruptured. The type of case where this would occur would be one which had been sub-acute and slowly progressive in its symptoms. In some such cases the presence of pus round the appendix may, indeed, hasten a perforation in its walls, and thus reverse the usual order, i.e. where the perforation precedes and causes the surrounding suppuration.

5. The insidious lull.—The lull in the severity of the symptoms which often precedes a more violent outbreak is well known to clinical observers as one of the insidiously dangerous features of the disease. Talamon, for instance, has drawn special attention to it,2 and indicates what we ought clearly to understand, that the first and second outbreaks are probably seldom, if ever, identical. They are due to different pathological conditions, and these give rise to symptoms which, although similar, have points of difference which should be capable of discrimination. The cases under discussion will help us to understand this, for they show us what the condition of the appendix was before a second outbreak occurred.

The early severe symptoms may be looked upon as due to the irritation of the nerves of the appendix itself, while the later severe symptoms are due rather to irritation round the appendix following rupture. Thus Fowler3 has shown that mechanical irritation to the appendix, when it is exposed in a patient who is

1 British Medical Journal, February 1894, p. 342.
2 Appendicitis and Perityphlitis, translated by R. J. Berry, M.B., p. 171.
3 Annals of Surgery, vol. xix. p. 148.
conscious, causes pain which is attributed to the umbilicus. Now, in our two and in other similar appendices excised early, the sharp onset of septic inflammation is a sufficient explanation of irritation to the tissues of the appendix, including its nerves. Hence may be traced the early severe abdominal pain attributed by the patient to the umbilical or epigastric region, and also the early vomiting, which seems to be reflex, like that caused by any other severe irritation of the splanchnic nerves. But the tissues of the appendix will soon soften and relax, and as they do so the irritation to the nerve terminations will be relieved. This will explain the lull in the early intensity of the pain. As the pain subsides, however, it locates itself more definitely to the region of the appendix. This later pain we can understand to be mainly due to the relatively mild form of local peritonitis, caused by transudation through the walls of the inflamed appendix, and which naturally follows the primary condition after a variable interval of time. Should the inflammation of the appendix pass on towards gangrene or perforation, the symptoms attributable to the condition of the appendix itself would not be thereby increased, rather the reverse. Hence the danger of the lull; and we have before us the following interesting and very important problem: in an organ out of sight a state of inflammation may be shortly followed either by subsidence or by perforation and gangrene, but although in either case the early symptoms will subside, the final results will be very different indeed. Can we have no clue as to which of the alternative processes is going on in any particular case? What, indeed, ought we to expect? The acute inflammations which end in gangrene will probably be the more severe at first; they will probably be associated with more septic absorption, showing itself by fever and depression, and with more rapidly severe local peritonitis than those which end in resolution. These are indications which ought to guide us in acquiring our experience.

When, however, rupture or perforation has taken place, the severe symptoms which follow a lull will be found to be more than a mere increase of the early ones. They will be due to intense septic peritonitis, localised at first, but probably spreading rapidly over the general peritoneal surface. The pain may not be quite so severe as at first, but it will be more localised to the region of the appendix, and will be accompanied by more tenderness. The local muscular rigidity and restriction of respiratory movements will be more marked, and the general constitutional symptoms of septic fever will be graver, the quick, thready pulse especially giving ground for serious alarm. The features of different cases will vary with the exact position of the appendix and the part of it affected, with the extent to which walling-in has proceeded before the rupture took place, and with the constitution of the patient.

It will be remembered that we are now discussing only one form of dangerous affection of the appendix, i.e. true appendicitis of a
severe type. There are others, however, which must be considered in contrast before we frame practical deductions and rules for when to operate.

Thus there are the cases of perforation with very little previous inflammation where acute suppurative peritonitis exists from the first, and there are those of slowly advancing supputation, either without perforation or where it has occurred only after the region of the appendix has been thoroughly walled-in by adhesions. Neither of these classes of case present such difficulties in determining a line of action as those we have been discussing. The first kind, represented by the case of X. to which I referred, demand an operation at the earliest possible date; the second are relieved by an operation, but the pus may find its way to the surface and open spontaneously, so that there is more time for careful deliberation. In severe appendicitis, however—i.e., that now under consideration—the lull in the severity tempts one to delay, while if we do wait and allow the appendix to rupture and discharge its fermenting contents, the subsequent septic peritonitis will not be properly, if at all, walled-in by adhesions, and the chances of success by operation are therefore greatly diminished.

**Indication for operating in Acute Appendicitis.**

What, then, are the symptoms which will enable us to diagnose a case of impending gangrene or perforation of the inflamed appendix, and justify us in operating upon it? From the above discussion of the pathology of the condition, I would say that whenever we believe that the appendix is severely and acutely inflamed, we should at once take the question of an operation into consideration. If the onset has been very severe, and if the lull is associated with definite and increasing signs of local peritonitis and of general septic absorption, I think the sooner the operation is undertaken the better. The risks of leaving the appendix to rupture are many and great, and I have no hesitation, in view of the many disastrous results which the post-mortem theatre reveals, in urging that an operation in such circumstances is by far the lesser of two evils.

Considering that it is quite as important a part of a surgeon's business to know when and why he is to operate as to know how, it would be well if physicians would more frequently call in surgeons for consultation in such cases at a time when if an operation should be required it will have a reasonable chance of success.

In conclusion, I may be allowed to say a word as to the method of removing the appendix. In the first of the above two cases I ligatured the appendix with strong catgut, cut it off close to the ligature, and after paring off with scissors what I could of the mucous membrane on the stump, I cleansed the remainder and drew the muscular and serous coats over it with a fine silk suture.
SUCCESSFULLY TREATED BY OPERATION.

The result of this has been quite satisfactory; but as I thought that an equally good method might be devised which was easier to carry out, I made a few experiments, and fixed on the following:—After ligaturing and cutting through the mesentery of the appendix, divide with the knife or scissors the muscular and serous coats of the appendix about $\frac{2}{3}$ of an inch from the cæcum, and on the side opposite the attachment of the mesentery; carry this incision longitudinally for about $\frac{1}{2}$ an inch towards the cæcum; then, having peeled off the serous and muscular coats from the tube of mucus membrane, ligature and cut it off as near the cæcum as the previous stripping will allow; lastly, cut through the serous and muscular coats at the point where the stripping began, i.e. beyond the point where the mucous membrane is divided. This flap of serous, muscular, and connective tissue now only needs to be ligatured. It is thereby drawn over the mucous membrane stump, and will be sealed by adhesions in a few hours. As the second of the above cases followed the first in a week, I had not long to wait for an opportunity of putting this method into practice. It was easily carried out, and in every way satisfactory. The result on the part which was left is shown in the drawing made at the time. Mr Barker, in the British Medical Journal for April 20th of the present year, has published a method which is similar to the above in principle, but different in some of the details. He advocates only a circular incision through the muscular and serous coats; these are then to be turned back off the mucous coat, which is to be pulled out before it is ligatured and cut off. The turning up of the two outer coats must be a very troublesome process when they are swollen by congestion, otherwise the method has the advantage of complete closure when the outer coats are ligatured.

III.—A SUMMARY OF SIXTY-THREE CASES OF CHLOROSIS.

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Having, during the past few years, treated 63 cases of chlorosis in hospital, it may be of interest if I give a short summary of the conditions found, and of the frequency and severity of some of the chief symptoms. The notes of the cases were almost invariably taken by myself, but unfortunately were not always as full as they might have been, and hence the presence or absence of a certain symptom has been sometimes left unmentioned. I have simply entered these in the tables as "not noted," although it is most probable that the condition as found was healthy, and had nothing about it worth noting. The cases were all typical and well-