Operation, August 5th, 1901.—Pyloric stenosis, with dilatation of stomach and gall stones, in gall bladder and common duct found; twenty gall stones removed from gall bladder by cholecystotomy, and two removed from common duct by choledochotomy. Pylorus treated by pyloroplasty. Smooth and rapid recovery. July, 1902: Patient very well, and had gained over 2 st. in weight.

CHOLELITHIASIS AND ENLARGEMENT OF PANCREAS.

In common-duct cholelithiasis, especially where there is a small floating gall stone, it is common to find the head of the pancreas enlarged and hard, the result of chronic pancreatitis, this will give rise to the suspicion of cancer of the head of the pancreas, and may lead to an unfavourable prognosis being given, but the following out of many cases that I have had shows that it is well to reserve our opinion in such cases, and to give the patient the hope of cure.

CASE XXIV.—*Enlargement of Head of Pancreas suggesting Malignant Disease: Cholecystenterostomy: Recovery.*

On October 20th, 1899, I was asked by Dr. S., of Sunderland, to see a lady, aged 51, who had been suffering for three years from attacks resembling those of gall stones, each attack being followed by jaundice. During the past fourteen weeks the seizures had been more frequent and severe, and jaundice had never quite cleared away before another attack came. She had lost flesh and strength considerably, and had vomited from time to time between the attacks. Her digestion was much impaired, and there was a want of appetite. She had had no rigors, and had only slight fever at the time of each seizure. The urine contained abundant lithates and a slight trace of albumen, but no sugar. On examination the abdomen showed no manifest enlargement of the liver or gall bladder, but some tenderness over the gall bladder and at the epigastrium, where there was an indefinite sense of fullness.

Operation, October 23rd.—After detaching numerous adhesions fifteen gall stones were removed from the cystic and common ducts, but as a large nodular mass was occupying the head of the pancreas and partly obstructing the common duct, it was deemed advisable to perform cholecystenterostomy, so as to make a permanent opening between the fundus of the gall bladder and the duodenum. The tumour gave the impression both to myself and to Dr. S., that it was malignant. Recovery was, however, uninterrupted, the button was passed on the tenth day, the wound healed by first intention, and the patient immediately began to put on flesh. She returned home, and has since been perfectly well in every respect. It is now over three years since the operation, and her health, I am informed, is perfect.

I have entirely given up cholelithotripsy as a set operation, as although in my earlier cases it answered well in some cases, in several the fragments did not pass, and gave further trouble or led to relapse. Moreover, the very complete exposure which the operation I have described gives renders all uncertain methods, such as crushing, quite unnecessary.

It would be easy from my own experience to add to the number of examples of each operation that I have described. Some hundreds of cases have been reported or referred to in the second edition of *Diseases of the Gall Bladder and Bile Ducts*.

AFTER-TREATMENT.

It only remains for me now to refer to the after-treatment, which I previously said that I consider almost as important as the operation itself.

Expedition in operating is an important factor in lessening shock, especially in abdominal surgery, for it stands to reason that prolonged manipulation and exposure of the viscera, in patients so ill as the class of cases we are now considering must generally be, will be badly borne, for it is not only the work of the surgeon but the deep anaesthesia that adds to the shock, since for these operations to be expeditiously performed the muscles must be well relaxed. Choledochotomy should occupy from half an hour to an hour, and only in case of unusual complications a little longer.

After operation a pint of saline fluid with 1 oz. of brandy is given by enema, and 5 minims of liq. strychninae are given subcutaneously, this being repeated if called for. Subcutaneous injections of saline fluid or intravenous infusion are only rarely required.

Beyond teaspoonfuls of hot water or hot tea from time to time all feeding is by the rectum for the first twenty-four hours, though if there is no vomiting the teaspoonful of water is increased to a tablespoonful, or even two, every hour. After forty-eight hours, if there is no vomiting, milk and soda and barley-water can be freely given. A little plasmon dissolved in the tea or beef-tea or barley-water considerably adds to the nutritive value of the fluid. Light custard pudding is usually given on the fourth day, fish on the fifth, and chicken on the sixth, after which the diet becomes almost normal.

The bowels are not disturbed before the fifth or sixth day, and then only by enema, unless there is vomiting or distension, and in case of either of these complications a grain of calomel is administered, and followed by 2 oz. of Apenta water every two hours until it acts or until flatus passes freely, this being at times helped by the rectal tube or by a turpentine enema.

Morphine is avoided after all my abdominal operations, as

it tends to paralyse the intestines and leads to an accumulation of flatus. I believe that abstention from the use of morphine is a great feature in the success of abdominal surgery, just as I feel sure that in the past it has killed many patients who would otherwise have done well.

If a sedative is needed 10 gr. of aspirin will be found useful, and this can be repeated in two hours if required. In case of vomiting being troublesome or epigastric distension persisting gastric lavage will be found useful, and when the stomach is emptied a dose of Apenta water may be left in it to incite peristalsis. Under these circumstances no food or fluid is allowed by the mouth, but plenty of fluid in the shape of normal saline is given by rectum.

As a rule recovery is uneventful, and for the most part after-treatment is negative. The stitches are removed on the eighth day, and the tube usually comes away about the same time; the wound generally will have healed by first intention, and the spot where the tube was heals by granulation. The dressings are of the simplest—sterilized gauze and sterilized wool being employed as a rule, double cyanide gauze just boiled being sometimes used next to the wound.

The chief lessons I have to teach are that we should operate earlier before serious complications have ensued, and that when we do operate we should be thorough, expeditious, and careful.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, December 18th, 1891.

THE OPERATION OF CHOLECYSTECTOMY, WITH A RECORD OF CASES.*

By B. G. A. MOYNIHAN, M.S., F.R.C.S.,

Senior Assistant Surgeon, Leeds General Infirmary; Consulting Surgeon to the Skipton Hospital and to the Mirfield Memorial Hospital.

THE operation of cholecystectomy—removal of the gall bladder—first performed on July 15th, 1882, by Langenbuch, is one which is comparatively rare in the surgery of the bile passages. It is called for in the following conditions:

1. In injuries of the gall bladder, rupture, stab, or bullet wounds.
2. In gangrene of the gall bladder.
3. In phlegmonous cholecystitis.
4. In membranous cholecystitis.
5. In chronic cholecystitis with dense thickening of the walls of the gall bladder and cystic duct, with or without stenosis of the cystic duct, and in chronic cholecystitis, when the gall bladder is shrivelled and puckered, and universally adherent. In such cases it is no longer a receptacle for the bile.
6. In distension of the gall bladder, hydrops or empyema, due to blockage of the cystic duct by calculus, stricture, growth, or external inflammatory deposits; or in cases of mucous fistula following operations for these conditions.
7. In cases of fistula between the gall bladder or the cystic duct on the one hand, and the stomach, duodenum, or colon on the other.
8. In multiple ulcerations of the gall bladder or the cystic duct, when gall stones have eroded their way through the walls into the liver, the duodenum, or other protective adherent masses.
9. In primary carcinoma of the gall bladder.

In all these conditions the removal of the gall bladder is either imperative or desirable. Kehrer, whose experience of the surgery of gall stones is unrivalled, has recommended, as a routine measure in the treatment of cholelithiasis, the removal of the gall bladder and the drainage of the hepatic duct. This advice is based upon the belief that so radical a measure will lessen the likelihood of recurrence of the stones, —a belief which is probably chimerical, for we know beyond dispute that gall stones are not infrequently formed in the ducts as well as in the gall bladder. The recurrence of gall stones in his patients lessens with the increasing experience of the operator, and is best guarded against by a complete exploration of all the ducts in all operations. If this be done, the surgeon will occasionally find a stone or stones in the hepatic or in the common duct, when no symptoms have been elicited by their presence there. The complete and minute examination of all the ducts is quite easily performed if the ordinary vertical incision be prolonged upwards along the costal margin and the liver rotated by gentle traction in a forward and upward direction upon the gall bladder.

In cases of recent acute or subacute cholecystitis, due to blockage of the cystic duct by a large stone, removal of the gall bladder is certainly not necessary. I have had several such cases under my care, and in all drainage of the gall bladder for seven to ten days has been ample to permit of a subsidence of the acute inflammation. The gall bladder should never be removed unless the surgeon is convinced that the common duct is patent.

* A paper read before the Yorkshire Branch of the British Medical Association.

Mayo, of Rochester, Minnesota, has suggested a modification of cholecystectomy which has met with some favour among American surgeons. It is performed in cases of permanent obstruction of the cystic duct, the common duct being permeable, and consists in the removal of the entire mucous membrane of the gall bladder. The mucous membrane at the fundus is separated with some difficulty, but at and near the neck it strips away readily. After its removal the other coats are stitched to the upper angle of the wound. The chief advantage claimed for the operation is that it is more readily performed, and is therefore a less serious procedure.

The operation of complete cholecystectomy is performed in the following manner: A vertical incision near the outer margin of the right rectus muscle is made and the muscle fibres split. The usual length of this incision is 5 in. If additional room be required it is best obtained by continuing the upper end of the incision along the costal margin upwards and inwards. All adhesions of the gall bladder, and ducts, and liver having been cleared, the liver is rotated by gentle traction upon the gall bladder until the cystic and common ducts are straightened and brought upon a level with the wound. By this manoeuvre the operation is rendered simpler and quicker. The peritoneal investment of the gall bladder is then cut through along the line of its reflexion on to the liver, and the gall bladder is quickly stripped from the liver and grasped in the hand so as to exert a gentle traction upon the cystic duct. A few bleeding points are occasionally seen upon the denuded liver surface, and a ligature or a suture transfixing the bleeding point may be needed. A circular incision is now made through the peritoneum at the neck of the gall bladder, and a cuff of peritoneum reflected from the neck and from the commencement of the cystic duct. A catgut ligature is tied round the duct, and the gall bladder is cut away. The mucous membrane of the severed end of the cystic duct is gently cleansed and wiped with a 1 in 500 biniodide lotion, and the peritoneal cuff is replaced and sutured. A purse-string suture may be applied over this, the first line of suture being buried when the pursestring suture is tied. No drainage tube is needed as a rule. If, however, owing to great thickening and adhesion at and around the cystic duct there is difficulty in performing all the steps indicated, and if the closure of the cystic duct is imperfect or its peritoneal hood not completely satisfactory, drainage may be provided by a split rubber tube or by a petticoat of rubber tissue packed with sterile gauze. If in any case the precise closure of the duct were impossible, I should leave a long clip on the end of the duct and drain by the side of the clip with a large split rubber tube having a gauze wick. Throughout the operation the most scrupulous attention is paid to the details of cleanliness. The viscera are carefully protected by gauze or sponge packing, and all swabs which are soiled with bile or inflammatory effusions are at once discarded. If the peritoneum be unavoidably soiled it may be wiped over with a swab wet with sterile salt solution. The hands are rinsed always in salt solution. No antiseptic is at any time allowed to touch the peritoneum.

The following is a brief record of the cases I have had under my care:

CASE I.—Cystoduodenal Fistula: Cystectomy.

History.—K. H., female, aged 55. Admitted February 9th, 1901, complaining of pain in the right epigastric and hypochondriac regions. The pain is intermittent in character, comes on daily and unexpectedly, lasts a few hours, and then disappears. It is three months since the first attack; since then the spasms have increased in severity and in frequency. When an attack comes on she feels cold and faint, and almost collapses. She has never been jaundiced. A fortnight ago a tumour appeared on the right side of the abdomen described by the doctor as "a hard, smooth, globular tumour, larger than a golf ball." No tumour can be felt now.

Operation.—On February 15th the abdomen was opened through the outer part of the right rectus muscle; on exposing the gall bladder and adjacent parts the following condition was found. The gall bladder was distended with a grumous material; to its outer surface the omentum and the duodenum were adherent; the omental adhesions separated fairly easily, the duodenal with difficulty. On detaching the duodenum an opening was found between it and the gall bladder; there was, in fact, a fistula equal in diameter to a lead pencil between the two viscera. In the cystic duct a stone, about the size and shape of a nutmeg, was found tightly impacted. The gall bladder, cystic duct, and stone were removed, the cut end of the duct being ligatured close to the common bile duct and the stump covered with peritoneum. The opening in the duodenum was closed with sutures and a split drainage tube with gauze wick passed down to the common duct. Recovery was uninterrupted, and the patient left the hospital on March 12th.

Mr. Cammidge examined the gall bladder and reported, "Great increase of fibrous tissue and patches of small-celled infiltration, and patches of calcified material. No evidence of malignant disease in the material examined."

Fistulae between the gall bladder and the duodenum are more frequent than any other form of abnormal communica-

tion between the bile passages and the intestine. Roughly speaking, they form a proportion of one-third of all recorded cases, and they are followed in point of frequency by fistulae between the gall bladder and the colon. If the gall bladder is found fairly healthy it can be separated off from the duodenum and drained instead of being excised. I preferred cystectomy in this case, as I was not sure that the thick pulpy wall of the bladder might not be the seat of new growth.

CASE II.—Primary Carcinoma of the Gall Bladder.

History.—M. B., aged 60. Sent by Dr. Sykes, Garforth. Two years ago she had an attack of hepatic colic, followed by jaundice. No stone was found. Six months ago a second attack; and a fortnight ago a third attack. In each attack the pain has been acute, "sickening," and of several hours' duration, and after each jaundice has appeared. After the last attack a tumour was noticed in the right hypochondrium; it seemed about the size of a billiard ball, was not in the least degree tender, and moved very freely in all directions as though only held by a stalk to the liver. There was neither jaundice nor ascites. A diagnosis of stone impacted in the cystic duct, with consecutive dilatation of the gall bladder, was made, though the entire absence of tenderness was against this.

Operation.—On April 8th, 1902, the abdomen was opened through the right rectus muscle, and the gall bladder exposed. It was found densely hard, adherent to the omentum by moderately firm adhesions, but not bound to the liver. An incision into it showed that the enlargement of it was due to a great thickening of its walls, the lumen being small, and having a capacity of barely more than a drachm. The omental adhesions were separated, and the gall bladder freed down to the cystic duct. The bladder and the cystic duct were removed by cutting through the latter close to its junction with the common duct after a ligature had been applied round it. The peritoneum over the cut end was stitched with a continuous catgut suture, and the abdomen closed without drainage. The cavity of the gall bladder was barely as large as a thimble; it contained a dirty greyish-black fluid. No stones were present either in the gall bladder or the cystic duct. A careful search of the hepatic and common ducts was made, but no stone was found. The wound healed by first intention, except at one stitch opening, from which about 10 to 20 drops of pus were expressed about three weeks after the operation. The patient went home well in the fourth week, and her health has been maintained since. When seen in November she had gained nearly 2 st. in weight, and was in robust health.

Report on Specimen by Dr. Maule Smith.—The growth consists of tubules of epithelial cells embedded in a dense stroma of fibrous and non-striped muscular tissue. The epithelial tubules are more numerous and more densely packed together towards the internal surface of the organ. They decrease in number towards the external surface. The matrix, on the other hand, is less in amount towards the internal surface and greatly increases in amount as the external surface is reached. So that in the former situation there is a maximum of epithelial growth and a minimum of stroma; in the latter the condition is reversed and the epithelial elements are scanty. The mucous membrane is totally destroyed. The epithelial tubules are composed principally of columnar cells in one layer; but usually in some part of the tubule the columnar shape stops abruptly, and is replaced by a clump of irregularly-shaped cells of a variable number of layers deep. These project into the lumen of the tubule or outwards into the stroma. The tubules branch irregularly in all directions. The growth is traced right into the commencement of the cystic duct. The tumour is a carcinoma apparently rising from the glands lining the gall bladder. It has much the same kind of structure as the growths in the uterus described under "a typical glandular carcinoma."

CASE III.—Membranous Cholecystitis.

History.—Mrs. A., aged 43. Seen August 21st, 1902, with Dr. Carlton Oldfield. The patient had suffered all her life "from spasms." Pain was felt in the right hypochondrium, shooting thence through to the back and all over the abdomen; it was attended by vomiting and collapse. There has never been any jaundice. Seven weeks ago a tumour was noticed on the right side of the abdomen, a little above and internal to the anterior superior spine. Constipation has latterly been a marked feature, and distinct intermittent intestinal colic has been seen, the caecum rising up very prominently, and loud borborygmi have been heard. The tumour is densely hard, irregular in outline, very slightly movable laterally, and vertically during respiration; it is not tender to the touch. A diagnosis of growth of the ascending colon was made and laparotomy advised.

Operation.—The abdomen was opened on August 28th. A hard tumour adherent to the abdominal wall and ascending colon was found. On first examination it was thought that the diagnosis was accurate, but a gradual separation of adhesions revealed the gall bladder lying buried in a trough made by the colon, and adherent by strong bands to the colon and abdominal wall. The caecum was large, and very much hypertrophied, feeling tough and leathery. There was very dense thickening and stiffening of the ascending colon at the part where lay the distended gall bladder. The much thickened gall bladder was laid open and 268 stones were removed. The gall bladder was then seen to be lined with a thick membranous coating, which peeled off the mucous membrane very readily. The condition was one of membranous cholecystitis. The gall bladder was therefore removed with a portion of the cystic duct, and the abdominal wound closed without drainage. The patient made a perfect recovery, and is now in good health, doing her ordinary household duties.

CASE IV.—Chronic Cholecystitis: Cystectomy and Partial Hepatectomy.

History.—Mr. H. H., aged 56. Sent to me by Dr. Booth, Grimsby. Had been subject to indigestion for many years. Sixteen days before I saw him he complained of pain in the right hypochondrium, and on examination a smooth, ovoid tumour was felt. The symptoms were strikingly few. The patient had aged very rapidly during the last few months. He had lost a little weight, but there had never been severe pain in the abdomen nor vomiting, merely a slight discomfort and an inability to take food well. On examination a smooth, rounded tumour was found in the right hypochondrium. It was slight, movable laterally, and moved during respiration with the liver. It was almost painless on palpation.

Operation.—On September 27th, 1902, the usual vertical incision was made, and extended upwards and inwards along the costal margin. The gall bladder when exposed was seen to be livid and very tightly distended. It was aspirated, and about 6 drachms of pure pus withdrawn. A mass of

stones was then felt. These were easily removed easily, until the neck of the gall bladder was reached. Here was found a large and very dense mass, which seemed to be made up of gall bladder, cystic duct, stones, and dense adhesions. The bladder was therefore stripped as cleanly as possible from the duodenum and colon, to both of which it adhered. A large stone was felt impacted in the neck of the gall bladder and was found almost to have ulcerated through. It was somewhat doubtful whether the dense thickening was due to malignant disease, and as, whether simple or malignant, the gall bladder was useless and harmful, it was determined to remove it. This was done, a small portion of the liver also being taken away, the gall bladder being inseparably welded with it. Several bleeding points in the liver were caught by a suture. The cut end of the cystic duct, from which bile flowed freely, was ligatured and a peritoneal flap stitched over. Drainage was employed. For the first three days the patient's condition was very critical; the pulse ran up to 120, and frequent vomiting and hiccough were very distressing. For forty-eight hours—between twenty-four and seventy-two hours after the operation—there was haematemesis, inky-black fluid being vomited every hour or two in quantities of 2 to 4 oz. The vomit was very acid, the corner of the patient's mouth and his lips and chin being scalded by it. The stomach was washed out, and all fluids withheld. High enemata of hot saline solution were given. The vomiting ceased, and for the next three days great progress was made; the bowels acted, there was no vomiting, and fluid, increasing from 15 oz. to 4 pints, was taken each twenty-four hours. On the seventh day the secretion of urine suddenly stopped. Before this, urine had been passed in quantities of 30 to 42 oz. daily. On the seventh day he did not pass urine for fourteen hours, and I therefore introduced a catheter, but drew off only 1 drachm of urine, almost solid with albumen. For forty-eight hours after this, less than 2 oz. of urine passed, in spite of saline infusion, pilocarpin, and other remedies. During this time the patient complained a little of dull aching in the left lumbar region. All the urine drawn off was highly albuminous. On the ninth day I cut down on the left kidney, incised the capsule, and stripped most of it away, and then incised the kidney through the convex outer border into the pelvis. During the next forty-eight hours, 11 oz. of urine were passed, the earlier discharge being slightly blood-stained. No adequate relief, however, was afforded, and the patient became comatose and died eleven and a-half days after the operation. The abdominal wound was soundly healed. Indeed, on the evening of the sixth day I felt assured of the patient's recovery, and I am confident that, but for the suppression of urine, he would have made a good recovery.

CASE V.—Chronic Sclerosing Cholecystitis: Multiple Perforations: Stone in the Common Duct.

History.—Mrs. M. S., aged 51, sent to me by Dr. W. Graddon Mortimer, of Thorne, had suffered for between three and four years from attacks of acute pain in the epigastric and right hypochondriac regions, lasting three or four hours, and then passing gradually away, leaving a sense of stiffness and soreness for a few days. Though these were the first severe attacks, the patient had for many years experienced sensations of discomfort, and grave uneasiness in the epigastrium, which was called "indigestion." In June of this year an exceptionally severe attack was followed, for the first time, by jaundice, and the jaundice has continued up to the present time. During this period—three months and a half—the depth of the tinge had varied; it is less in the morning, and gets gradually deeper during the day. There have been several attacks of shivering and faintness, followed by sweating, and after all of them a deepening of the jaundice has been observed. The motions have been like putty, and the urine has been high-coloured. A floating stone in the common duct was diagnosed.

Operation. October 3rd, 1902.—The abdomen was opened through the right rectus muscle and the upper end of the incision was prolonged towards the xiphoid cartilage. An immense number of adhesions were found and separated. It was then found that three stones, each equal in size to a Barcelona nut, had ulcerated almost through the walls of the gall bladder. Two of these lay in pockets in the omentum, and one was almost hidden in a cavity in the liver. The gall bladder was shrunken. The stones were removed and the gall bladder cleared. A stone was then found in the common duct, and was removed. The rest of the common duct was explored carefully and found to be clear. The gall bladder, which was shut off from the bile channel by an impervious cystic duct, was then removed. Drainage by a split rubber tube and gauze was adopted for forty-eight hours. The patient is now quite well.

CASE VI.—Acute Cholecystitis: Incipient Gangrene of Gall Bladder: Cholecystectomy.

Mrs. B., aged 33, seen with Dr. Rowling.
History.—The previous history of the patient was unimportant, save for the fact that there had been occasional "indigestion." On November 6th, 1902, she went for a long drive on the top of an electric car and felt chilled. On the following day she felt cold, shivered a little at times, and suffered all day from headache. On November 8th the headache persisted. In the early morning there was a large loose stool; there was some abdominal pain, and later in the day there were several attacks of diarrhoea and vomiting. On November 9th she was seen by Dr. Rowling for the first time. The temperature was 102°, the pulse was 90. An abdominal examination proved negative. On November 10th severe pain was experienced, entirely on the right side of the abdomen, and on examination an indefinite fullness was perceived. On the following day this had resolved itself into a definite mass in the right hypochondriac region. The mass increased in size rapidly, and by November 13th it had reached almost to Poupart's ligament. The general condition of the patient became increasingly serious; the temperature never fell below 100°, a little general distension of the abdomen developed; vomiting persisted, and was most painful and distressing, and the bowels were unrelieved. On the morning of November 13th I saw the patient with Dr. Rowling, and diagnosed the case as one of acute cholecystitis, with peritonitis. On account of the increasingly serious aspect of the case, but chiefly because of a severe rigor in the early morning, I was inclined to suspect incipient gangrene of the gall bladder.

Operation.—On Friday, November 14th, the abdomen was opened through the right rectus muscle and the gall bladder exposed. It was deep maroon in colour, with irregular spotted patches of dark green. The gall bladder measured about 7 in. in length, and was tensely distended. On aspiration about 2 oz. of mucopurulent fluid were removed. The walls of the gall bladder were felt to be stiff, and very much thickened. An incision into the fundus gave exit to some small gall stones. After their removal a stone about equal in size to a walnut was taken away. Beyond it and

near the cystic duct a stone was felt encapsuled in the wall of the gall bladder or imbedded in a diverticulum; it was impossible to say precisely. As the gall bladder was almost gangrenous it was decided to remove it. This was done in the manner already described. On account of the intense local inflammation drainage was adopted for two days. The operation was fairly well borne; the patient rallied from her prostrate condition very quickly, and was out of danger in about three or four days. She is now (January, 1903) in good health.

On examining the gall bladder it was found to be intensely congested, and in parts gangrenous. The points of gangrene corresponded to deep ulcerations seen from the inner surface. A stone equal in size to a nutmeg was found in a separate loculus near the junction of the gall bladder and cystic duct.

GALL STONE IN THE COMMON BILE DUCT: CHOLECYSTOTOMY: RECOVERY.

By S. J. ROSS, M.B., CH.B. VICT.,
Assistant Surgeon to the Bedford County Hospital.

I RECORD this case chiefly on account of the age of the patient, the duration of symptoms, and the absence of complications at the time of operation, notwithstanding the long history.

History.

A woman, whose age was 67 years 10 months upon the day of operation, had her first attack of biliary colic at the age of 40 years, just after the birth of her last child. The attacks recurred at irregular intervals up to four years ago. They then became more frequent, and during the past twelve months still more frequent and more severe. During an attack she experienced severe paroxysmal pain in the region of the gall bladder accompanied by vomiting, shivering and jaundice, and fever which lasted for several days. My partner, Dr. Coombs (to whom I am indebted for the previous history, and also for the great interest he has taken in the case subsequent to the operation) advised operation. On November 6th, 1902, I saw the patient towards the end of an attack. She was then slightly jaundiced. In the gall-bladder region was a globular swelling, the lower rounded border of which could be easily defined. It was evidently the distended gall bladder. The patient was anxious for surgical relief. Calcium chloride gr. x was administered for three days thrice daily.

Operation.

On November 10th, the patient having been prepared for operation, Dr. Coombs administered chloroform, and assisted by Mr. Nash I made an incision 4 in. in length in the right semilunar line. Upon opening the peritoneal cavity the distended gall bladder was readily seen, drawn into the wound, and packed round with sterilized flat cloths. The contained bile was then withdrawn by means of a cannula and the gall bladder opened. The stone, which was lying in the common bile duct, was easily felt, pushed onwards into the gall bladder, and delivered. The stone was oval in shape, and weighed 5½ gr. x. The ducts were examined and found free from further obstruction. The edges of the wound in the gall bladder were sutured to the parietal peritoneum. The remainder of the abdominal wound was closed in three layers, a rubber tube was inserted into the gall bladder, and removed at the end of forty-eight hours. Very little blood was lost during the operation.

After-history.

The wound healed by primary union, and I removed all the sutures upon the tenth day. There was never any rise in temperature after the operation. The fistula discharged freely for three days, and then the discharge steadily decreased. It had almost closed on December 19th.

The shape of the stone accounts for the absence of such intense jaundice as usually occurs in these cases. The attacks of biliary colic were doubtless due to axial rotation of the stone in the duct. The attacks of shivering, which are a very constant feature of cases of stone in the common bile duct, are, I think, instances of nervous traumatic fever, analogous to urethral fever following the passage of a catheter, and occurring in cases in which the element of sepsis is entirely excluded.

In conclusion, I think this case illustrates the importance of operative interference in cases of biliary calculus, and even when the age is suggestive of the presence of irremediable conditions associated with the gall stones.

TWO OPERATIONS PERFORMED UPON THE LIVER THROUGH THE CHEST WALL.

By G. P. NEWBOLT, F.R.C.S.,
Honorary Surgeon, Royal Southern Hospital, Liverpool.

GENERALLY speaking, in cases of abscess or hydatid of the liver one is able to evacuate the contents of the cavity by an incision made through the abdominal wall, but there are instances in which it is only possible to do this by resecting a rib and thus reaching the collection. The two following cases are good examples of this condition.

CASE I.—Hydatid of Liver opened through the Chest Wall.

History.—A. F., aged 12, was transferred from the medical wards of the Royal Southern Hospital to my care on August 7th, 1900. She was admitted on July 23rd, 1900, and had been ill for some months suffering from shortness of breath and discomfort in the right side. She had lived on a sheep farm in North Wales.

State on Examination.—The abdomen was swollen in the upper two-thirds,