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,

but the lower part from the umbilicus downwards was retracted. The margin of the liver was visible during respiration. The liver dullness in the mammary line measured $5\frac{1}{2}$ in., extending from the upper border of the third rib to $2\frac{1}{2}$ in. below the costal margin, behind it measured 6 in., and in the axillary line $6\frac{1}{2}$ in., extending from the fourth rib downwards. The circumference at the costal margin was $23\frac{1}{2}$ in., at the umbilicus it was $19\frac{1}{2}$ in. The margin of the lung expanded about an inch on inspiration over the dull area. Breath sounds were weak over the dull area in the axilla, elsewhere fairly marked vocal resonance and fremitus conducted. Heart normal, impulse fourth space in left nipple line. Respiration rapid, averaging 32 to minute. Temperature 100° at night. On palpating the liver there was distinct but regular enlargement of this organ below the ribs, but nothing like a cyst could be made out. The conclusion came to was that there was probably a hydatid in the liver pushing the lung upwards. An exploring needle introduced by Dr. Macalister two or three days later drew off pus.

Operation.—On August 7th, 1900, the patient being under chloroform, I put a large needle through the eighth interspace in the mid-axillary line and got clear yellow fluid, which had a foul smell. I again put the needle through the ninth interspace, with a similar result. I therefore cut down upon and removed a piece of the ninth rib in this region, and opened the chest. The lung which was healthy at once retracted, and the wall of a cyst bulged up at the lower part of the wound. I aspirated the cyst, and obtained fluid of the same character as before. Having drawn about 8 oz. off, I caught the cyst wall with forceps, and drew it up into the wound, sewing it to the soft parts so as to shut off the cavity of the chest. On opening the cyst freely a large quantity of fluid escaped and numbers of cysts of all sizes, some containing pus, and all being abominably fetid. I was now able to get away the whole lining of the cyst in one piece, and having washed out the cavity I put in a full-sized drainage tube, and packed it around with gauze. The girl stood the operation well.

Progress.—The temperature, which at the time of operation was 99.6° , ran up to 102° at the night of operation. The pulse was 120, and the respirations 64. For several days I was very anxious about her on account of the quick respiration and pulse, though her temperature kept low, but everything gradually quieted down, and she made a perfect recovery, leaving the hospital at the end of November with the wound soundly healed and with normal physical signs on the affected side of the chest. The discharge from the wound for many weeks was bile-stained and most profuse.

CASE II.—Abscess of the Liver opened through the Chest Wall.

History.—James McC., aged 37, a fireman, was admitted to the Royal Southern Hospital on December 4th, 1901, and placed under the care of Dr. Macalister. The history he gave was that in February, 1901, he had an attack of malarial or swamp fever in India, but no previous illnesses. There was also a doubtful history of dysentery. Eight days before admission he was seized with pain in the right side of the chest, low down, which had been getting steadily worse, and in addition to this he had a troublesome cough.

State on Admission.—There was slight tenderness over the right side of the chest, with impairment of movement. Wooden dullness, extending upwards to a level with the right nipple. The breath sounds were diminished, and almost inaudible, and vocal resonance and fremitus were also diminished laterally and behind. In front there was skodaic resonance at the right apex, and the breath sounds were somewhat bronchial and cavernous; pectoriloquy was present. The left lung was normal. The apex beat was outside, and on a level with the left nipple, evidently being pushed over by fluid in the right side. The pulse was 120, irregular, of small volume, and low tension. Bowels were constipated. Urine acid 1020 , and the temperature varied between 99° and 101.5° . The patient lay on his right side, and was sweating profusely. An exploring needle gave a negative result. On December 6th I saw the patient with Dr. Macalister. He looked white and ill; the right side of the chest was dull, and there was an absence of breath sounds; friction could be heard at the upper level of the dullness, and also when the patient turned on to his right side from his back, but this movement was attended by a good deal of pain. The liver could be felt below the ribs, and was somewhat tender and enlarged, but there was no sign of deep fluctuation, and it gave one the impression of being pushed down from above. The heart's apex was displaced, upwards and outwards. There was distinct tenderness on deep pressure in the interspaces over the right side of the chest below, and oedema with some bulging of the chest wall. The man had a bad cough, attended by profuse expectoration.

Operation.—On December 10th, the patient being under ether, I introduced a big needle between the ninth and tenth ribs in the mid-axillary line, and at once got pus. I next exposed and removed $2\frac{1}{2}$ in. of the ninth rib and opened the pleural cavity. It was now evident that there was a large abscess in the liver, and the tension in the abscess cavity was so great that pus was escaping by the side of the needle. I therefore packed some gauze around so as to shut off the pleural cavity, and after allowing a good deal of pus to escape through the needle I freely incised the abscess wall, catching it with forceps and pulling it up into the wound. After allowing most of the contents to escape, I plugged the opening into the abscess cavity with a sponge and sewed the margins to the parietal pleura and chest wall, thus shutting off the cavity of the chest. I left the silk ligatures with which I did this long so that I could remove them easily when loose. In a previous case of hydatid opened in this way I cut the ligatures short, and one of them not separating kept the sinus open for a long time. I was now able to explore the abscess cavity, which was of large size, occupying the upper surface of the liver. It contained about a pint of chocolate-coloured pus, not offensive in character, and was lined by a soft pyogenic membrane. After gently scraping the walls of the cavity with a lithotomy scoop, I inserted a large double-barrelled drainage tube, and washed out freely with boracic lotion.

Progress.—The patient was rather collapsed for some hours after operation, but he rallied well, and the cavity was washed out daily. The symptom which gave him most trouble was the cough, probably due to the interference with his diaphragm. His pulse and temperature both dropped after the operation, and remained down until December 26th, when his temperature rose to 100° , and he was rather ill for about a fortnight. There was some pneumothorax, and as this complication occurred just after the removal of one of the six big silk ligatures holding the parts together, I think it possible that air entered through the aperture left by the ligature or by a minute separation of the edges of the wound. However, this cleared up gradually, the man put on flesh, his cough subsided, and he was discharged on February 6th perfectly well, and remained so when last seen some three months after operation. There was never any bile in the discharge from the wound nor was he at

any time jaundiced, so that it is probable that the abscess was situated between the capsule and upper surface of the liver.

The diagnosis in this case rested upon the fact that from the temperature, pulse, sweating, and oedema there was evidently pus either in the chest or liver. The tenderness on deep pressure in the intercostal spaces over the liver, and on that organ below the ribs, the bulging of the side of the chest, but not so much of the intercostal spaces, together with the aggravated pain on movement, made us suspect that the pus was in the liver, though of this one could not be certain.

The point which struck me was the danger of putting an exploring needle into a tense cavity like this without being prepared to open up freely or empty the cavity for the time being with the aspirator. If this had not been done in this instance, I am sure that the tension in the abscess cavity would have forced pus through the needle track into the pleural cavity, producing an empyema. The withdrawal of a portion of the contents before incising allowed the abscess wall to come well up into the wound, and thus avoided the necessity of a preliminary stitching of the adjoining pleural surfaces, and a more prolonged operation. Both of these cases were described at a meeting of the North Wales Branch of the British Medical Association, and both were transferred to me by my colleague, Dr. Macalister.

CASE OF LIVER ABSCESS IN A CHILD AGED TWO AND A-HALF YEARS.

By W. J. J. ARNOTT, B.A., M.B.,
St. Helena.

Abscess of the liver in childhood is almost unknown—it is said by Manson in his *Tropical Diseases* not to occur. Given, however, a predisposing condition, debility, and the same exciting cause as in adult life—namely, dysentery and its associated organism—there is no obvious reason why the disease should not occur, even if only rarely, in a child.

It was this view of the matter which led me to diagnose an abscess in the above case.

The child was admitted to the Civil Hospital on April 16th, 1902, with a history of a neglected attack of dysentery. The stools were typically dysenteric in character. In addition to dysentery the signs of commencing tubercle in the lung were present. The general aspect was tuberculous, complexion very pale, and somewhat waxy in hue, and the mucous membranes extremely anaemic. There was at no time any appearance of jaundice.

Treatment was carried out in the open air, and both the bowel lesion and lung affection rapidly improved, all dysenteric symptoms disappearing in little over a week.

The temperature in the evening had ranged to about 100° for the first ten days after admission; it then remained about normal for the next nine days. At the end of that time it rose to 100° , two days later to 102° , and for the ensuing fortnight the morning and evening temperature ranged irregularly between 101° and 104° . There was nothing in the chest to account for this rise of temperature, as now, three weeks after admission, all signs of pulmonary disease had disappeared. The abdomen was distended, and with a little pressure to displace the bowel the liver could be felt to be enlarged about two fingerbreadths below the ribs, and to about the same extent in an upward direction. On inspection there was a slight fullness in the contour on the right side in the hepatic region, which was absent on the left side. The respiration was almost altogether of the thoracic type, and there was a certain amount of "catch" in, and acceleration of, the breathing, with nothing in the lung to account for it. Beyond this slight respiratory embarrassment the child did not appear to suffer pain. The pulse was weak and rapid, ranging generally between 120 and 130. Vomiting now became a very troublesome symptom, the child being only able to retain very small quantities of nourishment, and exhaustion was clearly threatened. The pressure of an enlarged liver was regarded as the cause of this vomiting, and on May 17th an exploring trocar and cannula were inserted in the tenth interspace in the anterior axillary line. Pus escaped through the cannula at the first puncture. The skin was frozen with ether, and an incision was immediately made over the spot in the intercostal space; a drainage tube was inserted, about 12 oz. of pus being discharged through the tube. Next day the temperature had dropped from 103° to 99° , the vomiting had ceased, the child was much relieved and slept well. During the next four days the evening temperature was below 100° , the pulse was quiet, the abdominal distension had dis-