Locality.

1. Masborough, Rotherham: "Woman. No inquest."
2. Rawmarsh, Rotherham: "Mrs. G., aged 34 years. November, 1904. Source of pills unknown. No inquest."
3. Bedford: "Woman, 1904 or 1905 (reported by Dr. Savory). Inquest. The person who sold the pills was known, but no punishment followed."
4. Sheffield: "Mrs. A., aged 25 years. June, 1905. Inquest. Unable to trace the source of supply."
5. Leeds: "Mrs. B., aged 23 years. Inquest, March 23rd, 1905. Pills made by a Mrs. Oxley, and indirectly purchased by deceased. The jury found 'that death was due to lead poisoning, but that there was no culpability on the part of Mrs. Oxley.'"
6. Sheffield: "Mrs. H., aged 32. Inquest, January 16th, 1906. She was brought to the Royal Infirmary from a country district outside, and absolutely denied having taken anything. The jury found a verdict of 'Death from lead poisoning, source unknown.' Since then I have heard that a box of 'Nurse O—'s' female corrective pills, which are the chief offenders in this district, and contain diachylon, was found in the deceased's house."

ADDENDUM BY DR. W. B. RANSOM.

In order to collect further information on this subject, I sent out 200 copies of the following questions to medical men living within twenty miles of Nottingham.

1. Do you find it common, and can you say how many cases you have seen in 1904 and 1905?
2. Is it an efficient abortifacient?
3. What symptoms does the poison usually produce?
4. Have you known of any fatal cases, if so, how many?
5. Is the lead usually bought as Diachylon, or as secret "female pills"?
6. Can you suggest any means of preventing the practice?

While a considerable number of doctors, especially those engaged in rural or in better class practice, were not familiar with this use of lead, sixty replies were received which showed it to be widespread and common. Thus Dr. Cassidi of Derby had seen 100 cases between 1896 and 1905, and some Nottingham medical men practising in the poorer districts sent the following replies:

- Dr. C. "about 20 in each year."
 Dr. S. "6 in the last nine months."
 Dr. F. "18 in the last 3 years."
 Dr. T. "about 9 a year."
 Dr. N. "15 in 1904 and 1905."
 Dr. W. S. "33 in 1904 and 1905."

Dr. J. W. Scott, formerly House-Physician at the General Hospital, Nottingham, reported 30 cases as in-patients or out-patients there in 1903 and 1904, and Dr. Edward, the present house-physician, 22 between January, 1904, and October, 1905. It appears to be common in the colliery towns and villages of the Leen and Erewash valleys, and round Mansfield.

It is well known in Newark and Loughborough, but does not seem to have reached Melton Mowbray.

In reply to Question 2, most replies indicate that it usually does produce abortion, although some are emphatic about its uncertainty, and all are clear as to its damaging effects to health and serious risk to life. The symptoms described fall into three groups:

1. Those of acute lead poisoning, such as colic, vomiting, or encephalopathy.
2. Those attending abortion, such as metrorrhagia and metritis.
3. Those of chronic lead poisoning, such as anaemia, headache, and occasionally wrist-drop.

Insanity and blindness from optic atrophy have been enduring after-effects. In 10 cases it is said to have caused death, while many others were dangerously ill and barely escaped with life.

In regard to the form in which lead is taken, it appears to be usually bought by the patient or by a friend (for example, a midwife) as diachylon in the lump, and made into pills, either alone or mixed with colocynth, aloes, and such drugs.

In the latter case the "lead colic" may be accompanied by diarrhoea instead of constipation.

But there is also no doubt that a large number of "female pills" sold by herbalists and quack medicine vendors contain lead. Some are specially labelled "not to be taken by pregnant women."

As to the means of preventing the practice, no very satisfactory replies were received.

One very general suggestion was to schedule diachylon and other preparations of lead as poisons, another that

diachylon should only be sold spread as plaster, a third that frequent analyses of "secret female pills" should be made, and their vendors prosecuted, a fourth that chemists should be warned as to the use being made of diachylon, and the danger of selling it indiscriminately, and a fifth that lead poisoning in women should be a notifiable disease.

In regard to these suggestions, it may be remarked that even if the pharmacopoeial preparations of lead were scheduled as poisons, persons who knew its properties could still buy it in other forms, such as white lead.

Nevertheless I am of opinion that a considerable diminution in this practice would follow the scheduling of diachylon as a poison, and that the evil is of sufficient magnitude to justify this step; unless, indeed, its sale were stopped altogether.

The chief use of lead plaster in this district is to "sweal the milk out of the breasts." It can hardly be maintained that lead plaster is necessary for this or any other purpose.

The scheduling or suppressing of diachylon need not involve the publishing to the public of the reasons that led thereto.

I brought the matter before the Nottingham and Notts Pharmaceutical Association, and found that many of the leading chemists were quite unaware of the use to which diachylon sold in the lump was put. Their Council at once gave their kind consideration to the matter, and issued a circular to their members, recommending that diachylon should be labelled as a poison, "for external use only." I am told that within a fortnight the sale of the preparation had diminished.

The question of the prosecution of vendors of "female pills" is one for careful consideration from the legal point of view; but I am decidedly of opinion that lead poisoning in women should be made a notifiable disease.

BIBLIOGRAPHY.

Pope, *BRITISH MEDICAL JOURNAL*, vol. ii, p. 9, 1893. Crooke, *Lancet*, 1898, vol. ii, p. 255. Bell Taylor, *ibid.*, p. 742. Branson, *BRITISH MEDICAL JOURNAL*, December, 1899. Ransom, *ibid.*, June and July, 1900. Wrangham, *ibid.*, 1901, vol. ii, p. 72. Scott, *Quarterly Medical Journal*, February, 1902. Jacob and Trotnam, *BRITISH MEDICAL JOURNAL*, 1903, vol. i, p. 242. Layton, *ibid.*, p. 849. Hall, *ibid.*, 1905, vol. i, p. 584. Gill, *ibid.*, 1905, vol. ii, p. 1642. W. H. Nutt, Thesis for M.D. University of Edinburgh, 1905.

ON THE INDICATIONS AND CONTRA-INDICATIONS FOR THE REMOVAL OF THE GALL BLADDER;

WITH A DESCRIPTION OF THE TECHNIQUE AND ANALYSIS OF A SERIES OF FIFTY-SEVEN CASES.

By A. W. MAYO ROBSON, D.Sc., F.R.C.S.

MANY surgical advances, especially in recent years, have been carried out with more zeal than discretion, and in several well-known instances the bounds of good judgement have at first been far passed, though ultimately moderation has prevailed. The purpose of my lecture to-day is to offer a protest against the indiscriminate removal of the gall bladder in all cases in which an operation on the bile passages is called for.

In 1904, at a meeting of surgeons in America, there was a decided preponderance of opinion in favour of cholecystectomy in all cases in which an operation is necessary for gall stones, or for any other morbid condition of the gall bladder, and I know that one or two British surgeons have adopted the same views.

I know it has been said that the gall bladder is a useless organ, very liable to infection, whose debased function is that of forming concretions and ultimately becoming cancerous. On the other hand, I would urge it must not be forgotten that gall stones, though usually forming in the gall bladder, may arise in any part of the biliary apparatus, both within and outside the liver; and, as a matter of fact, I have seen gall stones to develop in a dilated common duct two years after a cholecystectomy, whereas in the very large experience of myself and several surgeons whose aggregate of cases of operations on the gall bladder amount to fully 3,000, it is universally acknowledged that the recurrence of gall stones after cholecystotomy is an extremely rare event.

Bile is constantly being formed in the liver at the rate

of about 1 oz. per hour, as I proved by a long series of observations some years ago, the exact details of which can be found in vol. xlvii of the *Proceedings of the Royal Society*, but it is normally

Fig. 1.—A gall bladder, measuring 5 in. in length, which was excised during life. Its walls are thickened so as to measure about $\frac{1}{8}$ in., and its interior is of a deep black colour from congestion and interstitial haemorrhage. With the gall bladder is mounted a flake of exudation which was removed from within it at the operation, and in which many small polyhedral calculi are entangled. The peritoneum is intensely congested. Microscopic sections reveal extensive interstitial haemorrhage into, but no destruction of, the mucosa. From a gentleman, aged 37, who had suffered from indigestion and flatulence since youth. From the beginning of January, 1905, he had had pain in the right hypochondrium, but no tumour was noticed till early in February, from which time it rapidly enlarged, the symptoms becoming more acute. At the operation on March 1st the tumour was found to be an elongated right lobe of the liver overlying an enlarged and inflamed gall bladder. The gall bladder and cystic duct were distended with pus, and contained 400 small calculi. The patient made a good recovery.

and absorption, as it is only absorption, for almost normal gall bladders has been adopted by some enthusiasts as a routine procedure.

Whether cirrhosis of the liver and of the pancreas will result in a certain proportion of cases remains to be seen.

In ordinary cases of cholelithiasis, cholecystotomy with drainage of the gall bladder is a very safe and efficient operation, and if the ducts are cleared there need be no fear of fistula or of recurrence of gall stones. Seeing that cholecystotomy has led to such good results, both immediate and remote, in the surgery of gall stones, the operation should not be too hastily condemned and replaced by cholecystectomy as a routine procedure. My own experience is that cholecystectomy, though a more prolonged operation than simple drainage of the gall bladder, can with due care and in experienced hands be performed with hardly more immediate risk, and that when the gall bladder is contracted and infected, or inflamed and thickened, or gangrenous, or much dilated, it is better to remove it.

Since introducing the method of more completely exposing the biliary tracts when operating for gall stones, I find no difficulty in deciding as to the bile ducts being quite free from concretions—a necessary condition before cholecystectomy is justifiable.

Seeing that recurrence of gall stones after cholecystotomy with efficient drainage is an extremely rare event, that the danger of cholecystotomy in uncomplicated cholelithiasis is almost nil, not more than 1 per cent. over a large number of cases; that drainage of the

intestine after food has been taken and is passing through the pylorus, the sphincter at the orifice of the common duct opening in response to the reflex effect of the stimulus of food passing the pyloric sphincter. In the intervals the gall bladder acts as a reservoir in storing the bile until it is required to neutralize the acid chyme and to help in emulsifying fat.

It is a question whether the loss of the gall bladder does not lead to a dilatation of the common duct so as to replace to a certain extent the reservoir function of the gall bladder. That this has occurred in some cases I know from personal experience. If this is universal, it seems not unlikely that after cholecystectomy the dilated common and hepatic ducts may ultimately form a reservoir for the development of concretions. Moreover, if the bile ducts within and outside the liver have to act as reservoirs there must necessarily be back pressure on the secreting part of the liver and possibly biliary absorption, conditions which do not apply when the gall bladder is acting as a bile storer.

Sufficient time has not elapsed to show whether the liver is injuriously affected by this pressure recently that cholecystectomy for almost normal gall bladders has been

bile passages after any gall-stone operation is distinctly advantageous; and that if at some future time it should be necessary to drain the bile passages—say, for obstructive jaundice or interstitial pancreatitis—the difficulties would be increased by the absence of a gall bladder, though not by a cholecystotomy, my feeling is very decided that cholecystectomy should not replace the simple operation of cholecystotomy as a routine procedure in operating for gall stones.

Cholecystectomy is indicated in the following conditions:

1. In cancer or other new growth where the disease is local and limited.

2. In contracted and useless gall bladder the result of repeated attacks of cholecystitis.

3. In dilated or hypertrophied gall bladder resulting from obstruction in the cystic duct.

(a) Always, if resulting from stricture.

(b) Usually, if resulting from impacted gall stones which may have induced ulceration that will subsequently lead to stricture.

(c) Usually, if resulting from kinking of the cystic duct or from adhesions.

4. In phlegmonous or gangrenous cholecystitis.

5. In empyema of the gall bladder.

6. In calcareous degeneration of the gall bladder.

7. In mucous fistula of the gall bladder, the result of stricture or other obstruction of the cystic duct.

8. In gunshot or other serious injuries of the gall bladder or cystic duct.

It is unnecessary in ordinary cholelithiasis, where the gall bladder is not seriously damaged and where the cystic duct is not ulcerated or narrowed by stricture; and it is contraindicated in all cases where the surgeon cannot be certain that the deeper bile passages are free from obstruction unless at the same time the cystic or common ducts be short-circuited into the intestine.

A series of 57 cases in which I have performed the operation of cholecystectomy show how varied are the conditions which may demand removal of the gall bladder. They may be conveniently divided into simple and malignant. For simple conditions there were 46 operations and for malignant 11.

Thirty-three were for gall stones complicated by various morbid states, such as phlegmonous cholecystitis, gangrene of the gall bladder, perforation of gall bladder or bile ducts, calcification of gall bladder, tumour of cystic duct, contraction of gall bladder, and hour-glass contraction. Of the 33, 32 recovered; the 1 that died had perforation of the common duct and abscess in the right kidney pouch preceding the operation.

Thirteen cases were for fistulae of various kinds, such as gall bladder, duodenal fistula, biliary fistula, mucous fistula, due to stricture of the cystic duct or for tumours, such as cystic dilatation of the common bile duct,

Fig. 2.—A gall bladder of which the walls are much thickened from acute infective inflammation, the swelling reaching a maximum of three-quarters of an inch. The mucosa is of a deep brownish-black colour; the peritoneum is intensely and uniformly congested. The gall bladder contained three large calculi. The deep colour of the mucosa is chiefly due to interstitial haemorrhage, the lining epithelium has not been shed. The parts were removed from a middle-aged lady on February 20th, 1905. On the 17th she had been seized with severe pain in the right side of the abdomen, but until then had had no trouble. When seen her temperature was 104° F., pulse 120; there were signs of peritonitis in the region of the gall bladder. Operation was carried out on the following morning. A sero-purulent exudation was found in the general peritoneal cavity, and the exterior of the gall bladder was of a plum colour. After separation of adhesions, the cystic duct was grasped in forceps close to the common duct, the bladder and cystic duct being then removed. The patient made a good recovery.

associated with acute cholecystitis and for adenoma of the gall bladder itself. In several of these cases, at the same time that I removed the gall bladder I connected the open end of the bile duct with the intestine in consequence of stricture or other obstruction in the common duct.

Fig. 3.—A gall bladder of which the walls are greatly thickened and the lining congested from chronic inflammation. A calculus of considerable size lies in the fundus, and numerous other calculi are in the gall bladder itself. Good recovery.

Of the 2 cases in this group that died, in one there was suppurative cholangitis present before operation, and in another (one of the earliest operations) an obstruction was left in the common duct which led to the extravasation of septic bile.

Eleven were undertaken for malignant disease, and of these, 3 succumbed. These operations were very formidable: in 2 cases colectomy and partial hepatectomy accompanied cholecystectomy, in 2 pylorotomy formed part of the operation, and in no less than 9 the adjoining portion of liver had to be excised.

The after-results of cholecystectomy in complicated gall-stone cases have been excellent; instead of prolonged drainage being necessary and a mutilated organ being left, liable to give further trouble, the wound as a rule has pursued an aseptic course, the drain has been removed in twenty-four to forty-eight hours and primary union has occurred.

The ultimate results have usually been equally good, except in one case where a recurrence of gall stones took place two years later and I had to perform choledochotomy and to drain the common duct.

In the malignant cases, operation is necessarily formidable and unless the disease is strictly localized to the gall bladder and adjoining part of the liver it is better to stop at an exploratory operation; though I cannot forget that in one of my cases where I removed a portion of the liver with the gall bladder and in another where I removed the pylorus along with a portion of the liver and the gall bladder the patients are now living and well six and a half years and over five years respectively after operation.

The operation of cholecystectomy may be performed in several ways, but the one I now always adopt is as follows: The patient is prepared by having an aperient given so as to secure the bowels being moved the day before operation, and an enema is given the evening before, if the operation is to take place early the next morning. If there is any feebleness of pulse, 5 minims of liq. strychninae are given subcutaneously on the afternoon and evening of the day before operation, and 5 minims as soon as the operation has begun. Should there be chronic jaundice or a tendency to haemorrhage, calcium chloride is given; for, although there is a greater tendency to bleeding in chronic jaundice from pancreatic disease than when jaundice is due to gall-stone obstruction, I think there can be no doubt that in all cholaemic conditions the blood becomes so altered that the coagulability becomes seriously diminished.

The skin of the patient over the operation area is prepared the day before by thoroughly washing with soft soap or some soap, not necessarily antiseptic, that will give a good lather; if needful, shaving is then done, and the whole area is gently rubbed with paraffin. A dressing of lint, wet with 1 in 1,000 biniodide of mercury solution in spirit, is then applied. The dressing is changed early the next morning, and the skin is thoroughly cleansed, so as to clear away all loose and sodden epithelium, after which another 1 in 1,000 dressing is applied, to be removed on the operating table.

If the patient is feeble, a pint of normal saline solution, with 1 oz. of brandy, is given by enema a short time before the operation. As shock is intensified by exposure to cold, my patients are enveloped in cotton-wool, which is conveniently done by making a suit of gamgee tissue that can be readily run together by the nurses in an hour or two the day before the operation.

It will be found that a firm sandbag, about 18 in. long by 6 in. wide and 3½ in. deep, covered with flannel, and placed on the operating table at the liver level, will push the spine forward, and with it the liver and bile ducts, so that the common and hepatic ducts are brought several inches nearer to the surface. By opening out the costal angle and tending to make the intestines slip down from the liver, it acts like the Trendelenburg position in pelvic surgery. The same effect may be obtained by a special table that I have recently employed, which, by the simple action of a screw, may be so arranged as to make the part of the table lying under the liver prominent. The table is the invention of Drs. Guyot and Greville.

Operation.

I now always make my incision over the middle of the right rectus in a line parallel with its fibres, which are then separated by the finger, the posterior sheath of the rectus and peritoneum being divided together. When it is necessary to explore either the hepatic, common, or deeper part of the cystic duct or to excise the gall bladder, instead of prolonging the incision downwards as was formerly done, I now carry it upwards in the interval between the ensiform cartilage and the right costal margin as high as possible, thus exposing the upper surface of the liver very freely. It will be found that by lifting the lower border of the liver in bulk (if needful first drawing the organ downwards from under cover of the ribs), the whole of the gall bladder and the cystic and common ducts are brought close to the surface, and as the gall bladder is usually strong enough my assistant can take hold of it or the liver, with his fingers covered with an aseptic swab, and by gentle traction can keep the parts well exposed, at the same time that, by means of his left hand with a flat sponge under it, he retracts the left side of the wound and the viscera, which would otherwise impede the view.

It will now be observed that instead of the gall bladder and cystic duct making a considerable angle with the common duct, an almost straight passage is found from the fundus of the gall bladder to the entrance of the bile duct into the duodenum, and if adhesions have been thoroughly separated the surgeon has immediately under his eye the whole length of the ducts, with the head of the pancreas and duodenum. So complete is the exposure that the surgeon, whose hands are both free, can perform whatever operation may be necessary on the gall bladder, cystic, common, or hepatic ducts quite easily. By inserting a gauze pad into the kidney pouch, another into the wound on the left side so as to cover the stomach, and a third below, so as to protect the lower end of the wound, all fear of soiling the peritoneum or the surrounding viscera is avoided.

After the deeper ducts have been satisfactorily cleared will arise the question: How must the gall bladder be dealt with? Under certain conditions which I have previously mentioned it is desirable to perform cholecystectomy, which may be done as follows: The cystic duct is seized a little beyond its entrance into the common duct by means of strong pressure forceps which at the same time grasp the cystic artery, and thus control bleeding during the remaining stages of the operation. Another pair of pressure forceps is employed to seize the

Fig. 4.—Gall bladder much thickened and contracted around small gall stones and debris. Patient, aged 48, subject to frequent attacks of pain for six years. Excision of gall bladder performed in February, 1905. Patient made a good recovery.

cystic duct half an inch nearer to the gall bladder, and between the two forceps the duct is divided. The finger or a blunt dissector can now be used to separate the gall

Fig. 5.—Specimen of gall bladder with biliary fistula, showing gall stones impacted in the beginning of the cystic duct. From a lady, aged 36, who had had cholecystotomy performed in South Africa some months previously during acute cholecystitis, when the gall bladder had been simply stitched to the surface and emptied. No bile flowed through the fistula until after an attack of vomiting six weeks later, since which time there had been an irregular flow of bile with occasional attacks of pain. The gall bladder, including the fistula, were completely removed by me in November, 1904, together with the stone impacted in the first part of the cystic duct. Good recovery followed.

without any fear of leakage, and by the time the catgut has dissolved a track will have been isolated from the general cavity of the peritoneum, so that the tube may be safely removed then or left in longer should more prolonged drainage be necessary. The form of tube I usually employ is a No. 12 Jacques catheter. In order to avoid visceral adhesions I usually bring the right border of the omentum up and place it between the tube and the viscera.

If the patency of the common duct is doubtful, yet the gall bladder is too badly damaged to be safely retained, the cystic duct may be cut long and the open end anastomosed into the duodenum, either directly by suture or by means of a small decalcified bone bobbin, or a small Murphy button, so as permanently to short-circuit the obstruction. This may be advisable in cases where the pancreas is inflamed and compressing the bile duct.

The wound is closed by continuous catgut sutures, first to peritoneum and deep rectus sheath, and next to the anterior rectus sheath, the deep wound being strengthened by some through-and-through sutures of twenty-day catgut; lastly, the skin margins are brought together by means of a few interrupted silkworm-gut sutures inserted quite 1 in. from the line of incision and brought out 1 in. beyond the incision on the other side, so as to allow the edges to fall together without tension, thus securing union by first intention. Recently I have been using the ingenious metal sutures invented by Michel, which avoid the danger of infecting the wound through skin punctures. To those having little experience in these operations the modifications I have employed may seem trivial, but to those who have experienced the difficulties of the ordinary operation of removing the gall bladder through an incision which gives imperfect exposure, or, under similar circumstances, of removing gall stones from a contracted gall bladder or from the deeper parts of the cystic or common duct, I feel sure the method I have

described, which enables the whole of the bile passages to be dealt with as a straight tube close to the surface, will be sufficiently appreciated.

In these operations I employ forcepressure for the immediate arrest of haemorrhage, but I find it is more satisfactory also to ligature all the bleeding points, as in jaundiced cases the compressed and unligatured vessels are apt to bleed subsequently and to lead to complications that are avoidable by careful haemostasis. For the same reason I prefer to divide and ligature firm visceral, especially hepatic, adhesions where that is practicable, rather than as formerly to separate them with the finger or tear them through.

If the liver be slightly torn in separating adhesions the bleeding must be carefully arrested before the abdomen is closed. Sponge pressure is usually sufficient if the laceration be small, and this may be made more efficient by using at the same time a solution of adrenalin; but if the laceration be extensive, deep catgut sutures, applied by means of a round intestinal needle, will usually accomplish the desired effect, or, this failing, gauze pressure, the plug being left in until it becomes loose, will be certain to answer.

The question of cancer of the gall bladder has been brought very prominently before the profession by the late Dr. G. R. Slade in the *Lancet* of April 22nd of last year, and the author of the paper did me the honour to refer to my Bradshaw Lecture for 1904, wherein I made some observations on the causative relationship between gall stones and cancer (pp. 20 and 21 of my published lecture).

Dr. Slade's observations fully support the views that I have been advocating many years, that gall stones are the chief determining causes of cancer of the gall bladder, though his pathological findings are, to put it in the mildest way, "startling," and must surely be exceptional, for he asserts that carcinoma of the gall bladder was found at necropsy in the pathological department of the London Hospital in 30 per cent. (10 in 33) of all cases of gall stones; in 56 per cent. (9 in 16) of all cases where gall stones had caused symptoms during life; and in 58.8 per cent. of all cases in which at the necropsy the wall of the gall bladder showed inflammatory thickening; and even this he believed to be an under-estimate of the true proportion. Under the heading "Surgical Aspects" of his paper, he stated that 62 operations for gall stones were performed in the London Hospital during the period under review, and that 17 patients died; in 4 autopsy was not permitted, in 4 the gall bladders were not examined microscopically, but in 9 in which a microscopic examination was made there was carcinoma of the gall bladder. Of the 45 patients that recovered 2 had carcinoma of the gall bladder removed at operation. He then goes on to say: "It follows that of 62 patients in which operation was called for owing to the presence of stones in the gall bladder, 11 (nearly 18 per cent.) were shown either at the time of operation or by *post-mortem* examination to have carcinoma of the gall bladder."

These figures are at variance with the published experience of all surgeons who have performed a large number of operations and have had the opportunity of following up these cases subsequently, and I cannot help feeling that the diagnosis of malignant disease based purely on microscopic findings is in this case not so sure a guide as clinical experience. In my own experience malignant disease has been found in a little over 5 per cent. of cases of operation for gall stones.

Fig. 6.—Contracted gall bladder with completely-stricterured cystic duct, removed from a lady of 55 on December 1st, 1904. She had had attacks of pain over the liver for ten years, and her health had been seriously affected by the repeated seizures. A small cavity in the gall bladder was connected by a fistula with the duodenum. Patient made a good recovery.

Although, as will be seen later, I can support Dr. Slade's conclusions in advocating cholecystectomy in cases where the gall bladder is thickened and seriously altered at the time of operation, I cannot agree that any thickening of the wall of the gall bladder is presumptive evidence of a carcinomatous change, for I know that in my earlier operations on the biliary passages I found many thickened gall bladders containing gall stones, and the operation of cholecystotomy proved entirely curative, and the patients are continuing well many years later. Moreover, I only know of two cases in which cancer of the gall bladder developed subsequently to cholecystotomy, one of the cases having been under my immediate observation.

The practical conclusions which I feel confidence in urging, both from my own experience and that of others, are, that there is an undoubted relationship between cholelithiasis and cancer of the gall bladder and ducts; and as gall stones produce characteristic symptoms, and are therefore as a rule easily diagnosed, and since they can be removed in the early stages before serious complications have supervened with very little risk (in my experience, extending over some hundreds of operations, less than 1 per cent.), the preventive treatment for cancer of the gall bladder is obviously removal of the source of irritation. So impressed am I with the importance of this view, that although I know the symptoms of gall stones, which frequently depend on the associated catarrh, can often be relieved for a time by general treatment (though the gall stones producing the catarrh cannot be removed by medicine), yet I consider it wise to recommend their early removal, not only because it can be safely done, but also because the symptoms are likely to recur and lead to other complications, and, not least important, because, in a considerable percentage of such cases, malignant disease will be likely to supervene if the irritation be not removed.

[A number of specimens of gall bladders removed by cholecystectomy were shown, and others were demonstrated by photographs thrown on the screen.]

CASE OF INTRAHEPATIC CALCULI.

BY
H. R. VACHELL, M.D., and W. MITCHELL STEVENS, M.D., M.R.C.P.,
PHYSICIAN TO THE CARDIFF INFIRMARY. FELLOW OF UNIVERSITY COLLEGE, LONDON; ASSISTANT PHYSICIAN AND PATHOLOGIST TO THE CARDIFF INFIRMARY.

SINCE large intrahepatic calculi in the hepatic ducts are very rare the following case is of much interest:

R. V., a coffee-tavern keeper, aged 52, was admitted to the Cardiff Infirmary on May 2nd, 1905, complaining of "painful swelling in the stomach and jaundice."

Past History.

He had a severe attack of typhoid fever when 11 years of age and was never robust afterwards.

Since the age of 23 years he had been much troubled with constipation, and had suffered at frequent intervals from what he called "bilious attacks," the attacks being characterized by severe colicky abdominal pain, never lasting more than a day or two, and being always relieved by purging. These attacks at one time occurred almost every week. About two years ago he had a prolonged and severe attack, and after this there was an intermission of three months, and subsequently the attacks recurred every three or four weeks. He was never jaundiced during or after any of these paroxysms. His appetite was good and he seldom took stimulants of any kind.

In October, 1904, he was laid up for a few days with a rather severe attack of pain, since which time he had fewer recurrences and had expressed himself as feeling better than usual until taken ill on April 16th, 1905, when he was seized with very severe pain in the abdomen and back without any definite localization; the face was flushed, the pulse rapid, he was very restless and irritable, and the temperature was 102° F. There was marked tenderness in the epigastrium, especially just below the xiphisternum, and the liver was felt extending to three fingerbreadths below the right costal margin.

The pain and pyrexia continued till admission to the infirmary and frequent hypodermic injections of morphine

were necessary. Jaundice made its appearance for the first time on April 27th, and rapidly deepened.

State on Admission.

May 2nd. The patient complained of pain over the epigastrium and right hypochondrium, of flatulence and of insomnia. He was very weak and considerably wasted, there was deep jaundice with drowsiness, and the pain caused him to be restless and sleepless.

The appetite was much impaired; the tongue was dry, cracked and furred; nausea and vomiting were absent and the bowels constipated. The temperature was normal. Slight albuminuria was present and there was some oedema about the ankles. The abdominal muscles were rigid above the umbilicus and there was tenderness on pressure, especially marked in the epigastrium. The liver was considerably enlarged, extending downwards to within a fingerbreadth of the navel, and the organ was tender and smooth, but the gall bladder was not palpable.

Fig. 1.—Section of the liver showing numerous dilated ducts from which calculi have been removed. It also shows an enormous cavity.

Progress.

The patient rapidly became worse, with marked prostration; subnormal temperature; rapid, feeble pulse; drowsiness; partial unconsciousness; rapid, feeble breathing; deepening jaundice, and increasing hepatic enlargement.

On May 11th a marked change occurred. The jaundice became much less marked, bile appeared in the motions for the first time since admission, the hepatic enlargement diminished, and the patient's general condition was better than it had been since the beginning of his illness.

On May 13th 46 oz. of a clear, bile-stained fluid was removed from the right pleura.

On May 14th the patient became worse and rapidly sank into his former grave condition; the jaundice