small quantity, 2 or 3 ounces a day. She at once lost the irritation of skin, had good nights, to which she had long been a stranger, enjoyed her food, and gained flesh. The subsequent course of this case is most peculiar and difficult to explain. Two points became clear. She at once lost almost completely the irritation of the skin, and the sores resulting from it rapidly healed. Indeed, the night after the operation was the first restful night she had had for some time. The second point was that she very soon began to thrive and gain flesh. Also within an hour or two after the operation she vomited fluid tinged green, from which we inferred—wrongly as it turned out—that the flow of bile into the bowel was re-established. Notwithstanding all this, the jaundice continued, the urine was generally deeply tinged with bile, and the evacuations continued to be of the tint of pale brown paper, not clearly containing bile. And yet—and this is the curious point— $\frac{3}{4}$ ij or $\frac{3}{4}$ ij of bile daily escaped from the opening in the gall bladder. At the end of a month, by daily syringing of the gall bladder numerous fragments of calculus, evidently portions of the gall stone broken up by the needle, regurgitated from the common duct, were washed out, along with two or three small oval calculi which must have descended from the hepatic ducts. Four facts at this period seem to be clear: (1) That the calculus in the common duct had undergone complete disruption by means of the needle and crushing; (2) that the fragments had failed to escape along the duct into the bowel, but had worked their way backward into the gall bladder; (3) that the passage from the bile tracts into the bowel was not free; (4) that, although there was an escape for bile through the open gall bladder, only a small proportion of the normal quantity of bile made its way through this biliary fistula. The puzzle of the case seemed to be this: Seeing that there is an obvious escape for bile through the established biliary fistula, and that apparently no bile passes into the bowel, why do we not have an escape of 20 or 30 ounces instead of 2 or 3 through the biliary fistula? And seeing that there is a vent for the bile, why does not the jaundice disappear?

At the end of eight weeks I thought it right to reopen the abdomen, in order to make sure that there was no fragment of calculus still impacted in the common duct. A careful search failed to detect a trace of any gall stone or hardness, or suspicion of a fragment, either in the cystic or common duct. And a further examination of the hepatic ducts failed to discover any source of obstruction in them. This second operation was attended with no drawbacks. The jaundice continued, the small flow of bile continued, she was restful, rarely had a trace of the irritation of skin, gained flesh, and, on leaving a month afterwards, was able to walk about.

On January 3rd, 1895, Mr. Hillaby reports "that she can go about and walk a mile. The jaundice, which had almost vanished, had again become marked. At times there is itching of skin, but never so distinct as before the operation. Flow from the fistula, variable. There is always some fine biliary *débris* washed out when the fistula is syringed."

The case remains as much a puzzle as ever.

From the foregoing cases we may fairly infer that the use of the needle is a very valuable addition to our means of dealing with impacted biliary calculi, and may prove to be an important substitute for the crushing forceps. Where the gall stone will yield to the crushing effect of the thumb and forefinger, this is probably the best and safest method. But when the finger crushing fails, then I expect that the needle will prove to be more certain and less dangerous than either the use of crushing forceps or removal of the calculus by incision of the duct.

MEDICAL LEGISLATORS IN BELGIUM.—In the last Belgian Parliament there were two representatives of the medical profession in the Senate in the persons of Professor Crocq, of Brussels, and Dr. Soupart, of Ghent, and three in the Chamber of Representatives, namely, Drs. Thiriar, of Soignies; Heynen, of Neufchâteau; and Delvaux, of Dinart. In the new legislature there are still only two medical senators, namely, Drs. Van den Corput, of Brussels, and Thiriar, of Soignies, but the number of medical members of the lower house has risen to four. These are Drs. Heynen and Delvaux, who have been re-elected, and Drs. Gillard and Rouvaux, of Namur.

ON THE CLINICAL CONFUSION BETWEEN DISTENSION OF THE GALL BLADDER AND MOVABLE KIDNEY.¹

By HENRY MORRIS, M.A., M.B., F.R.C.S.,

Surgeon to the Middlesex Hospital.

PERHAPS it does not on first thought seem that there is much resemblance between an enlarged gall bladder and a movable kidney. Yet experience shows that the one is often confused with the other, and that, too, by most capable clinicians. Much more frequently the enlarged gall bladder is mistaken for a movable kidney; but occasionally the opposite error is made. Not rarely the two abnormalities coexist, and then one may be diagnosed and the other overlooked. I have now seen both present in the same person so many times that I have come to the conclusion there is in some instances a causal relationship between them.

If we inquire in which sex gall stones and enlarged gall bladder are generally found the answer is not uncertain; women are much the most frequently affected. A glance at the surgical registrar's (Mr. Leopold Hudson) reports of my own hospital shows that in the four years 1890-93 10 patients suffering from gall stones were under surgical treatment, and of these 9 were females. So also of movable kidney. During the same period there were 19 patients with movable kidney subjected to nephrorrhaphy, and of these 17 were women and 2 men. It is true that a third male patient, making the twentieth case of movable kidney, was also under treatment within this time, but in him the mobility of the kidney had been caused by a large retroperitoneal abscess due to caries of the seventh, eighth, and ninth dorsal vertebræ, and the kidney was pushed forwards by, and moved upon the front of the abscess. Dr. Hare's figures are almost the same as these, for out of 23 cases of movable kidney 20 were in women. Thus we see from these few figures—and a larger number of cases will but confirm the statement—that both enlarged gall bladder and movable kidney are from seven to nine times more frequent in women than in men.²

The question as to which kidney is more frequently movable hardly affects the matter under consideration, but it is pretty certain that the right kidney is nearly thirteen times more often movable than the left.³

We have then these three noticeable facts: (1) That movable kidney and enlarged gall bladder are each much more frequently met with in women than in men. (2) The right kidney is many times more frequently movable than the left; and (3) movable kidney and enlarged gall bladder often occur in the same person. Another point is that though most of the women with movable kidney, and also those with biliary troubles, have borne several children, some of my patients were barren married women, or single women who had never been pregnant.

Now, can we piece these facts together to explain the association of the two states in the same person? I think we find the explanation in tight lacing, or, as no woman ever admits to have tight-laced, I will say in the time honoured fashion of wearing corsets. Lacing, I believe, causes displacement and mobility of the kidney; and it also causes displacement of the liver, kinking of the gall ducts, and the formation of gall stones as the result of obstruction to the ready flow of the bile in the ducts.

I think, too, that whereas the downward pressure of the liver induces mobility of the kidney, the mobility of the kidney in turn reacts upon the gall bladder, and causes its distension by dragging upon the duodenum and the bile ducts, and thus obstructing the passage of the bile. In this way we can understand how it is that women are frequently the subjects at once of distended gall bladder and movable right

¹ A Paper read before the Metropolitan Counties Branch, North London District, January 19th, 1895.

² Landau's tables show 273 women and 41 men out of 314 cases of movable kidney.

³ Of 173 cases, according to Landau, in which the side is noted 152 were right and 12 left kidneys, and in 9 both kidneys were movable.

kidney. That only a few women who tight lace get either an enlarged gall bladder or a movable kidney does not invalidate the argument, because the shape of the thorax of some, the amount of fat in others, and the natural strength of the visceral connections in others, may frustrate the injurious effects of lacing.

There are, of course, other causes of movable kidney and of biliary calculi; and several reasons, anatomical and mechanical, have been propounded to explain why the right kidney is so much more frequently movable than the left.

But a more important practical question is, "What symptoms are there common to movable kidney and enlarged gall bladder that the one comes to be often mistaken for the other?" There are several. Both enlarged gall bladder and movable kidney may present as a tumour in the right hypochondriac and umbilical regions. Either tumour may be capable of being pushed back into the loin or over to the left of the median line. In both cases the tumour is more or less firm, or elastic, and smooth. In both cases it may be either very tender or not at all so. In either case it may be, or seem to be, round or oval, or shaped like an egg, a pear, or an orange, or a sausage. I have known each to present a smooth, firm, and rounded projection on its surface; in the case of the kidney due to a cyst beneath the front of the capsule; in the gall bladder to a calculus in a pouch in its anterior wall. Both may have either a resonant or a dull note on percussion in front. Both give rise to various dyspeptic symptoms—nausea, sickness, flatulence, pain after eating, and constipation. Either may give rise to paroxysmal attacks of severe colic, the maximum intensity of which is referred to the situation below the ribs on the right side of the abdomen. In enlarged gall bladder these attacks are due to the sudden impaction of a gall stone in the cystic duct; in movable kidney, to kinking or rotation of the ureter or renal vessels. Either may give rise to jaundice, gastric and intestinal catarrh, or even peritonitis, though neither does so in the usual run of cases. With either there may be considerable displacement of the colon and small intestine; or adhesions, and matting together of the intestines and omentum in front of the tumour, may occur. In neither case does the condition of the urine often help us, and sometimes it actually misleads, as there may be albumen in the case of distension of the gall bladder or bile in the case of movable kidney.

There are some conditions of the gall bladder which render the confusion all the more probable; (a) the enlarged gall bladder is sometimes so much elongated and so curved that it assumes the reniform outline; (b) it can in some cases be pushed quite back into the loin and there felt with the fingers pressed into the ilio-costal space; (c) the liver in some instances is so much displaced towards the pelvis that the gall bladder if enlarged gets doubled back beneath the liver and is felt more as a loin tumour than as an abdominal one. Conversely there are some conditions of the kidney which cause it to resemble an enlarged gall bladder. (a) The kidney in some instances is tilted as on an inclined plane from behind forwards, with its lower end just behind the anterior abdominal wall, and then in position and direction it closely simulates the gall bladder; (b) the kidney is sometimes adherent to the right lobe of the liver as well as to the gall bladder, the adhesions allowing of free movements of the kidney across the umbilicus as well as back into the loin, yet not without dragging on the liver.

As illustrating some of the points just mentioned, I may refer to three cases briefly related in my Cavendish Lecture, delivered in 1893, and published in the *Lancet* on June 17th, 1893. To these cases I might add about a dozen others. I will however select six cases, to show the clinical confusion between the two affections. I might also, did time permit, quote cases to show how patients who have recovered from dropsy of the gall bladder, gall stones, or cholecystitis, have subsequently suffered from hydronephrosis or pyonephrosis in a movable right kidney, and how in these cases the mobility of the kidney had almost certainly preceded the biliary troubles, and had very probably been the cause of them.

CASE I. *Suppurative Cholecystitis; Cholecystotomy.*—A. M., aged 31, was admitted into the Middlesex Hospital under

Dr. Finlay on September 24th, 1891, for violent pain in the abdomen, accompanied by vomiting, which had continued for three days ; no jaundice. There were great tenderness and pain and distension of the abdomen, the maximum intensity of which was in the right iliac region. There was slight dulness in the right iliac fossa, but nothing abnormal could be felt in the pelvis on vaginal and rectal examination. She had the facial aspect of intense pain ; temperature 99.4° F., pulse 160 and extremely weak, respirations 30, tongue coated, bowels confined, and she had not passed urine for several hours. She stated that, eleven years before, she had been in the hospital for an attack very similar to the present. Except small-pox when 8 years old she had had no other illnesses.

A consultation was called for the following day to consider the question of an exploratory operation; but her pulse at the time of consultation was so weak and rapid and her condition altogether so extremely bad that an operation, it was thought, would kill her right off. She was ordered half a grain of opium every six hours, ʒiij of brandy daily, and nutrient enemata.

The course of the case during the next fortnight was one of slow but unexpected improvement. The bowels acted, the general abdominal pain and tenderness diminished. As the flatulent distension subsided one could make out a distinct hard swelling in the abdomen to the right of the umbilicus, and extending into the right iliac region; it had a well-defined edge, and gave a dull note on percussion (see Fig. 1). It was tender and at times the seat

Fig. 1.—This diagram shows the tumour; R, R', indicate the areas of resonance; T, the tympanic area.

of great pain. Various opinions were expressed as to the nature of the swelling.

October 12th, 1891.—On the eighteenth day after admission she was sufficiently strong to undergo an exploratory operation. When the patient was under the anæsthetic the swelling could be readily felt through the right loin, whilst in front the lower edge of the liver and what was taken for gall bladder were felt, and neither seemed to be involved in the tumour. An incision was made in the linea semilunaris, and the swelling examined with the hand in the abdominal cavity. Even then it was impossible to define the limits or connections of the tumour owing to its being completely surrounded by recent very vascular adhesions. The uterus and pelvic organ were free, and the right kidney was felt for but could not be found: the left kidney was readily discovered.

As the swelling was elastic and cystlike, and appeared to be retroperitoneal, and as the adhesions bled freely at every point detached, an attempt was made to reach the tumour from the loin. The edges of the abdominal wound were held together by temporary silk sutures clipped by long pressure forceps. An incision as for exploring the right kidney from behind was made in the loin. No sign of a right kidney was discovered, and the colon, and small intestine carrying before them the peritoneum, bulged into the wound.

It was thus made clear that the tumour was within the peritoneal cavity, and too deeply placed for successful manipulation from the loin, so the patient was replaced on her back, and the tumour was separated from some of its adhesions; whilst doing this it gave way, and 20 ounces of thick yellow foetid pus escaped. Little or none of the pus escaped into the peritoneal cavity, which was well protected by flat sponges and by the detached adhesions which formed a kind of capsule for the tumour. During the escape of the pus two faceted gall stones were removed. On pulling upon the walls of the collapsed cyst the tumour was proved to be the gall bladder. The right kidney could now be felt high above its normal situation, having been pressed upwards by the great distension of the gall bladder. The cyst and peritoneal cavity were separately well irrigated with hot water. The gall bladder was sutured to the upper angle of the abdominal wound, and drained. The abdominal and lumbar wounds were closed with sutures, a glass drain tube being inserted at the lower angle of the former, and a rubber drain tube at the lumbar wound.

She rallied slowly after the operation, and had a great deal of abdominal pain for thirty-six hours. The glass tube was removed from the abdominal wound on the second day, and the drain tube from the lumbar wound on the fifth day. She then rapidly convalesced. The last sutures, those holding the cyst wall to the abdominal wall, were removed on the eleventh day, and when she left the hospital, on November 16th (thirty-five days after the operation), the opening into the cyst had contracted down to the size of a fine probe, and no bile or mucus was escaping from it. The orifice of the fistula was almost concealed by the puckered folds of the surrounding skin. The faeces and urine were quite natural, and the patient was in good general health.

June 17th, 1894. Came to see me with a slight ventral hernia.

January 1st, 1895. Came again to report that she had kept quite well since the operation.

CASE II.—Mrs. T., aged 50 (about), a widow and the mother of a grown-up son and daughter, came to me on April 28th, 1892, accompanied by Sir J. Russell Reynolds, and a note from Dr. Goldsmith, of Bedford. Some six or seven years before she had been seized with an acute pain in the back, and was unable to turn in bed without assistance, and even when assisted, movement caused intense suffering. About this time she discovered a swelling in the abdomen, just below the right costal margin, and soon afterwards she had an attack of jaundice, and the swelling became much bigger. Vomiting and shivering also occurred at this time. The jaundice soon ceased but the swelling persisted, and she had since frequently suffered from abdominal pains, dyspepsia, flatulence, and costiveness, and had become very despondent and nervous about her health. For some time before I saw her she had been complaining of a burning sensation in the right groin, and of a feeling of bearing down in the urethra as though something was forcing its way through the passage. She had vague sensations of fulness, referred to the outlet of the vagina, which I believe were due, so far as they were not neurotic, to the pressure of a pessary which she was wearing, though she had no present uterine displacement.

She had been told, by one of her medical attendants, some year or two ago, that the swelling was connected with the kidney, and the reason for her coming to see me was because a provincial medical friend, who had examined her, and who has himself done some excellent work in the surgery of the kidney, was of opinion that she was suffering from movable kidney.

On examining the abdomen, I found a smooth, uniform, rounded, very hard, movable tumour in the right hypochondriac and lumbar regions. It was felt immediately

beneath the parietes, but could be pressed back into the loin, and somewhat beyond the middle line to the left. It moved up and down freely on respiration, and it gave us the impression of being connected with the under surface of the liver. Moreover, when pushing the swelling towards the median line of the abdomen, and dipping the finger tips of the right hand deeply into the loin from the front, and those of the left hand into the ilio-costal space behind, I could distinctly make out the kidney, and found it to be movable in what I have described as the "cinder-sifting" manner, that is, movable in the plane behind the peritoneum, but not capable of forward displacement like a "floating" kidney. My diagnosis was a distended and movable gall bladder, and in this Sir J. Russell Reynolds agreed with me.

On August 20th, 1892, Sir J. Russell Reynolds being present, I performed cholecystotomy through the linea semilunaris, and removed forty-nine biliary calculi, which were tightly packed in the gall bladder like bricks in a wall (see Fig. 2). The gall

Fig. 2.—Shows the tightly packed calculi in the gall bladder.

bladder was stitched to the abdominal wound. She left London for her home in the country on September 8th, 1892. A slender sinus persisted, through which a very little watery mucus unstained with bile escaped. Through this sinus a small biliary calculus was passed in July, 1893. In October, 1893, two more calculi came away. The larger of the two was extracted by Dr. McDermott, of Kingstown, Dublin; the other escaped spontaneously.

On November 23rd, 1893, I removed, when she was lying on the sofa in my consulting room, ten calculi from a sac-like subcutaneous pouch into which the fistula led. After this the fistula closed, but two months ago it reopened and discharged a little fluid for a day or two, but no stone escaped. It is now healed, and on January 6th, 1895, she wrote: "My general health is good. I can walk well, and all the pain and sensations I complained of have ceased since the operation."

CASE III. *Dropsy of Gall Bladder; Cholelithiasis; Movable Right Kidney; Cholecystotomy.*—Miss C., aged 56, was seen with Dr. Harbord, of Bedford Square, in January, 1893. She was supposed to be suffering from an enlarged, painful, and movable kidney. For two years she had had a painful movable swelling in the right side of the abdomen, which had caused her grave distress, and was associated with vomiting, indigestion, and loss of weight. She had been obliged to keep a good deal to her bed, and of late the swelling had increased in size, and been more painful. Her urine was always normal. She had never had jaundice. There was tenderness in the right hypochondrium. The right kidney could easily be made out; it was somewhat enlarged, and was very movable, but was not tender, and did not account for the whole of the swelling. It seemed to me that the greatest tenderness was over the gall bladder, which I thought was enlarged, with its

lower end moving in the arc of a circle, and independently of the kidney.

January 25th, 1893. I advised an operation, which was accepted, and so, in presence of Dr. Harbord and Dr. Elam who kindly assisted me, I explored the abdomen through an incision in the upper part of the linea semilunaris, and found the gall bladder distended to the size of a large pear, and free of adhesions. A quantity of green inspissated fluid and two square gall stones agglutinated together were removed from the gall bladder. A third calculus was extracted from the cystic duct after breaking it into two parts with a pair of forceps.

The gall bladder was stitched to the edges of the abdominal wound and a drain tube was placed within the gall bladder. Fine silk sutures fixed the peritoneal and muscular coats of the gall bladder to the parietal peritoneum and then five silkworm sutures transfixed the skin and the whole of the coats of the gall bladder.

The patient made an excellent recovery but with a fistula. Her general health improved materially, she lost all her pain and resumed an active life, but the discomfort of a very profuse escape of bile caused much annoyance. There were, however, no ill effects from lack of bile in the intestinal tube, no emaciation, and no absence of bile in the fæces.

April 7th, 1893. Saw her with Dr. Elam. A narrow biliary fistula still remained. As she would not consent to any operation to close the fistula an apparatus, precisely on the model of the urinal I had made many years ago for lumbar renal fistula, was suggested by Dr. Elam and made by Mr. Bailey, of Oxford Street. This has answered admirably in her case, collecting the bile which escapes and thus keeping her skin dry and her clothes clean. No operation on the kidney has been required.

CASE IV. *Cholecystotomy for Dropsy of Gall Bladder; Choledecotomy for Impacted Calculus; Nephrorrhaphy of Right Kidney.*—Mrs. E. S., aged 43, a very short, slender woman, older looking than her years, was sent to me February 21st, 1894, by Dr. Golding Bird Collet, of Worthing. She was in much suffering, and her pinched, worn face showed it, and she described her life as not being worth living as it was. For a long time she had had undue frequency of micturition, and imperfect control over the sphincter ani. For the last ten years she had been "liverish" but never jaundiced. For the last three years had suffered much abdominal pain, and Dr. Collet for some considerable time had been aware of a very movable tumour in the right side of her abdomen and right renal region, but which at times quite disappeared. Dr. Collet had always found the urine normal, and had never seen reason to suspect gall stones. The seat of the pain had always been the movable tumour. The patient stated that the amount of pain, and the distinctness of the tumour were not associated with any variation in the frequency of micturition, or in the amount of urine passed, as is so often observed in cases of intermittent hydronephrosis. There was a very movable and enlarged swelling in the right lumbar and iliac regions. The outline of it was not reniform; there was resonance over the front of it; it could be pushed quite back into the loin, and it did not descend on deep inspiration. The liver was much tilted and depressed downwards, so that its front edge was as low as the iliac crest, and it could not be pushed up so as to get the upper edge of the swelling free. Whilst I felt sure the kidney was movable, I was in some doubt about the swelling being entirely renal. I re-examined her on the day before the operation specially with the thought of a distended gall bladder; but I came to the conclusion that the swelling would probably prove to be a movable hydronephrotic kidney, partly overlaid by the very downwardly-displaced liver.

On February 23rd, Dr. Collet being present, I made an incision in the right loin down to the kidney, which was so excessively movable that it was difficult to keep it in contact with my finger whilst I was exposing it. It was of normal size and appearance. Having closely inspected the kidney, and pressed it all over between my finger and thumb, I next felt along the upper part of the ureter, and, in doing so, came upon a hard oval-shaped concretion the size of a nutmeg. It was situated in the iliac fossa, along the line of the ureter, but was covered by more tissue than the ureter is, and was not resting on the posterior wall of the pelvis, as a calculus in the

ureter would be. My next thought was of a concretion in the appendix caeci, then of gall stone, but the situation was more in favour of the appendix concretion than of the gall stone. One thing was pretty evident, that whatever the nature of the mass it was tightly fitted in a tubular cavity. However, on cutting on to it in the depth of the loin wound, some glutinous white fluid escaped, and a typical gall stone was seen. This at once gave the clue to the nature of the abdominal swelling, so a sponge was packed in the wound, the edges of which were held together by temporary sutures, and the patient was turned over on to her back.

An incision along the right linea semilunaris soon exposed the upper surface of the liver, greatly tilted downwards. The index finger was hooked round the anterior edge of the liver, and when the liver by this means was well raised an enlarged gall bladder of the shape of an orange was brought into view. On tapping it, a large quantity of white glairy fluid like white of egg escaped, but there was no calculus in the gall bladder. Some omentum and transverse colon, which were slackly adherent to it, were detached from the front of the gall bladder, so that the index finger could be passed along the cystic duct to its lower end, where the calculus was found tightly jammed. I exposed the incision I had already made in the posterior wall of this duct and enlarging it sufficiently, removed the gall stone through it.

Seven or eight Lembert's sutures closed this opening, and the omentum, previously detached from the gall bladder, was stitched over the line of incision in the duct. The trocar puncture in the gall bladder was enlarged, and the edges stitched to the parietal peritoneum and skin. The rest of the abdominal wound was closed in the usual manner. A drain tube was placed in the gall bladder. To show how much the liver and gall bladder were displaced downwards, I may mention that the incision in the abdominal wall was made more than an inch lower than usual, and yet that the gall bladder had to be sutured to the lower angle of the incision, the liver itself being beneath the rest of the incision. Generally, in my experience, the gall bladder has to be fixed at or near the upper angle of the parietal wound and when contracted it cannot always be made to reach even that.

As I was draining the gall bladder itself, and had securely closed my incision in the cystic duct, I did not drain the peritoneum. After closing the wound in the back of the peritoneum with catgut sutures I fixed the kidney to the fascia and deep muscles of the loin, and closed the lumbar wound as usual. There was a free escape of bile all the next day, then none for three days; subsequently a little bile continued to escape till the fistulous orifice was pared with a tenotome and the surfaces brought together by wire sutures. It then closed completely and finally, and the patient returned home quite well on March 29th, and has remained well since.

CASE V. *Dropsy of Gall Bladder Treated for Movable Kidney; Cholecystotomy.*—Mrs. S., aged 42, had been treated by her country medical attendant for movable right kidney, and was wearing a belt which had been ordered by a physician in a large northern town to keep the supposed wandering organ in place. I saw her in consultation with Dr. Leonard W. Sedgwick on February 13th, 1894. She had been seized by a severe attack of pain whilst dining out the evening before, and this had not entirely passed off. She was in bed, and immediately the abdomen was examined, an elongated, very hard sausage-shaped tumour was felt. It extended under the margin and seemed attached to the under surface of the liver. The lower end of this long tumour moved freely, and could be pushed across the median line to the left of the umbilicus; it could also be pushed far back into the right loin. The right kidney could be felt on deep inspiration by bimanual examination, when the fingers of the hand in front were dipped behind the movable sausage-shaped tumour. This kidney moved in a vertical plane fairly freely, but not excessively freely; it did not float forwards at all, and any lateral movement it had could not be well ascertained because of the tumour in front of it.

The history of the case was that severe abdominal pain first came on suddenly twelve years before when on board ship, and without being provoked by any cause known to her. A second attack occurred two years later, and others at long intervals up to two years ago, when they began to recur ver

often; for some time past the pain had been almost constant. The pain was described as having always been in the right hypochondrium, and as lasting for a few hours, but of late it had continued many days at a stretch. She was suffering a great deal and constantly, and could feel the "hard lump," and thought it was aggravated by the "state of her liver," and at the time of the periods. She has always been of a rather constipated habit. The urine was quite normal.

On February 15th, Dr. W. Sedgwick being present, I made an incision in the right semilunar line over the tumour, exposed the gall bladder, which was drawn out upon the surface and opened, a large quantity of thick mucus and two gall stones being removed. One of the stones was black, smooth, and faceted on one surface, and had been lying in the gall bladder; the other, like a nutmeg in shape and colour, was partly in the cystic duct. The cut edges of the gall bladder were united to the upper end of the abdominal wound, and the operation completed in the usual way.

She made an excellent recovery. The sutures were removed on the eighth and tenth days. A large quantity of bile escaped daily from the third day after the operation, yet the motions showed no lack of bile in them, and there were no constitutional ill effects.

On March 14th an attempt was made to close the fistulous opening into the gall bladder by inserting a silver wire suture after freshening the mucous surface, but without success; subsequently a modified Hainsby's truss was worn, and later cotton wool and collodion were tried.

Though now free of pain and in excellent health, the escape of bile still goes on, and there is this interesting fact about it, that during the day the discharge is slight, as it is also in the early part of the night, but in the early morning and until breakfast has been taken the flow is considerable. It would seem that during the hours whilst there is food in the upper bowel the bile finds its way into the intestine, but that during the hours of storage, whilst the small intestine is empty, the bile finds an easy exit through the fistula, which it thus tends to keep open.

CASE VI.—A. T., aged 45, a housewife, married; has had four children. For the last thirteen years has suffered from "displacement of the womb." Six years ago was very ill for two or three weeks. Her doctor told her that she had an internal abscess, and she passed a lot of matter by the bowel. Soon after this time her medical man discovered that she had a lump in her right side, and he told her that she had gall stones. During her illness she had sharp shooting pains in the "stomach" on the right side directly under the ribs, and this was shortly followed by jaundice. For three years she suffered from periodical attacks of violent pain, but on the first occasion only did she have jaundice. She never remembers having passed a stone by the bowel. She had been seen in the out-patient department by one of the assistant physicians, who sent her into my ward as a case of movable kidney.

Patient is a highly neurotic woman, who on admission was complaining of swelling on the right side of the abdomen, with occasional violent attacks of pain. On examination there is a tumour about the size and shape of a pear, immediately below and projecting from under the right costal arch. The swelling is smooth, with an even, somewhat elastic surface; it is slightly movable in a horizontal direction, descends freely on inspiration, and is tender on palpation. It lies slightly external to the right semilunar line. *There is resonance over the tumour, and also above it (as indicated in Fig. 1).* Urine 1022, no albumen, copious deposit of lithates. At a consultation of four members of the staff two were of opinion that the "lump" was a movable kidney.

December 6th. An incision was made in the right semilunar line and the abdominal cavity opened. A much distended gall bladder was found, which was drawn up to the surface, and 3 iijss of ropy white mucus were withdrawn. The bladder contained no bile. A large calculus was found in the cystic duct, which was pushed up into the gall bladder and removed. The stone was the size of a peach stone, single and unfaceted. The opening in the gall bladder was stitched to the abdominal wound.

December 26th. Wound healed soundly, except for a fistula discharging a quantity of normal bile. Edges of fistula pared and a hare-lip pin inserted. It was peculiar in this case

that though there was no absence of bile in the fæces before the operation, yet yeast-like stools were passed for some days afterwards. It is possible these were due to some inflammatory swelling of the common bile duct or to the temporary blockage of the duct by thickened mucus.

December 31st. Flow of bile increased.

January 11th. Only one or two drops of bile in the dressings during twenty-four hours. The fistula has since closed.

It now remains to consider how we can diagnose the one class of cases from the other. The first and most important thing is to bear in mind that the enlarged gall bladder as well as the kidney is a frequent cause of *movable* abdominal tumour. This is far from being sufficiently recognised. The second is, always to inquire if there has been a distinct attack of jaundice. The third is that the tumour caused by an enlarged gall bladder can in almost all cases be invariably felt, whereas a movable kidney (unless also enlarged) cannot. The latter is sometimes easily detected, at others not at all. An enlarged gall bladder is always easily felt by pressure on the front of the abdomen.

Fourthly, the fact that the size of the tumour varies from time to time goes for nothing in the diagnosis, unless it is clear that with the diminution of the swelling there invariably follows a marked increase in the quantity of urine voided. Movable kidneys are frequently of smaller size than normal, and are often degenerated in texture as well as diminutive in size; but for all that they have a tendency to swell from vascular turgescence, or, if hydronephrotic, from accumulation of urine; owing to their shifting position they are also more palpable at one time than at another. A distended gall bladder also will vary in size if the cystic duct is blocked by a calculus which from time to time slips back into the gall bladder, and thus opens the channel for the escape of the pent-up bile or mucus. But with few exceptions there is always evidence of some swelling as long as the cause of the obstruction remains unremoved. Fifthly, a gall bladder with calculi feels much harder than a movable kidney.

A sixth feature is the range and character of the mobility. However free the movements of a gall bladder, they take place in the arc of a circle the centre of which is a point beneath the edge of the right lobe of the liver. Around this point the free or lower extremity can be moved to the left and to the right of a vertical line drawn through the axis of the swelling, and further in the direction towards the left than towards the right. It can be pushed upwards and it can be also pushed backwards; but unless the liver, as a whole, is unduly mobile the gall bladder cannot be pushed downwards towards the pelvis though it descends a little on deep inspiration.

The kidney, on the other hand, moves bodily from place to place within the limits of its loose connections; it will go up or down or inwards towards the median line or beyond it, and it has an especial tendency to slip, like a greasy mass, beneath the finger tips upwards and backwards, into its normal position—unless prevented from doing so by the pressure of the other hand on the abdominal wall above it. The kidney, in other words, has a tendency to spring back into its proper position in the loin; whereas the enlarged gall bladder, though it can, in many cases, be pushed so far back into the loin that its free end can be readily felt in the ilio-costal space behind, has the tendency to spring back again to its position in the front of the abdomen.

In presence of a distended gall bladder it is generally possible to grasp the kidney, or at any rate its lower extremity between the two hands by pushing the tumour forwards and towards the median line with the back of the finger tips of the right hand, and at the same time pressing forwards the loin with the fingers of the left hand. In this way the two organs are separately distinguished at the same moment. The kidney may likewise be thus found to move independently of the tumour formed by the gall bladder. This can often best be accomplished with the patient lying on the left side.

In the descriptions of the symptoms of movable kidney too much stress is apt to be laid upon an undue hollowness and resonance, with diminished resistance, in the loin. These are very unreliable symptoms (1) because in some positions of

⁴ The whole liver is sometimes movable to a very remarkable extent.

the trunk and thighs there is much hollowness in the ilio-costal space when the kidney is in its proper place; (2) the mass of muscle and fat in this region often prevents a tympanitic note being elicited when the kidney is displaced; and (3) the natural position of the kidney is so much under cover of the lower part of the thorax that hollowness of the loin and resistance in the ilio-costal space have no bearing upon it naturally.

Another diagnostic feature to which too much importance has been attached is the relation of the colon to the tumour. Normally the colon is on the outer side of the right kidney and the transverse colon below and behind the gall bladder; and Ziemssen pointed out that if the gut is inflated with air, the kidney is pushed backwards and the gall bladder upwards. But it is so common for the ascending colon and the hepatic flexure of the colon to be considerably displaced inwards and downwards, especially when either of these affections exists, that the result of inflation is very misleading. The so displaced colon on becoming inflated will push the kidney upwards, just as, in the natural position of the viscera, it does the gall bladder.

Aspiration of the swelling has sometimes been proposed as a means of diagnosis; but apart from the danger attaching to this procedure (unless the tumour is adherent to the parietes) there is the further objection that the character of the fluid withdrawn may afford no assistance at all. In many cases the contents of a distended gall bladder are of a dropsical nature, very like the fluid of a hydatid cyst; in other cases it is glairy mucus quite unstained by bile; and in others again it is pus.

In the doubtful cases an exploratory incision is the only means of positively deciding the diagnosis; and as this is quite free of risk it should be early resorted to, with full confidence that if the tumour be an enlarged gall bladder the earlier it is dealt with by operation the better for the patient; and that if it be a movable kidney nephrorrhaphy will relieve the symptoms and prevent hydronephrotic changes which shortly destroy the kidney.

ON THE PATHOLOGY OF THE GOUTY PAROXYSM.

By J. B. BERKART, M.D.,

Late Physician to the City of London Hospital for Diseases of the Chest.

ACCORDING to the prevalent doctrine, the urates deposited in a joint are the immediate cause of the gouty paroxysm; while those that circulate in the blood determine, as shown by their rise and fall, all other symptoms preceding and accompanying the attack. In the belief of many, however, uric acid possesses a morbid influence far exceeding those limits and produces not only by its actual or assumed presence, but even by the mere "tendency to its formation," a variety of functional derangements and anatomical lesions which, by their common etiological factor, become part and parcel of the ubiquitous gout.

Views such as these involve of necessity important practical consequences, and it is therefore not unreasonable to ask upon what evidence they are founded. It is clear that the mere association of two phenomena, however constant it may be, does not prove *per se* that the one in particular is the cause of the other. But, strangely enough, the more recent literature on the subject is almost completely silent on the point here referred to. Only Sir Alfred B. Garrod² raised the question, whether the deposit may not after all be a consequence of the process; but as he could not find uric acid in the blister fluid from an inflamed part, while he readily detected it in that from a healthy spot, he inferred that the vessels destroyed it,³ and upon the teleological ground that the object of the inflammatory process was to rid the system of the impurity, he replied in the negative. All other writers have assumed the pathogenic properties of urates as an

axiom and have started with this foregone conclusion; so that the truth or the fallacy of the principle at issue can only be tested by the accounts of the action, which are variously given, of the alleged *materia peccans*.

From the theory, which Sir Dyce Duckworth⁴ adopts, it does not necessarily follow, that uric acid is at all concerned in the causation of a gouty paroxysm. Indeed, he himself claims for it only a subordinate share. Gout, he maintains, is an "alimentary neurosis," and the essence of the disease lies in a peculiar derangement of innervation. The irritation of a hypothetical centre produces the local symptoms, but this result may also ensue in the absence of the uric acid.

In the opinion of Sir Alfred B. Garrod,⁵ uric acid has chiefly a mechanical effect. Though he casually speaks of it as a "poison," which bears to the big toe a similar relation as strychnine does to the spinal cord, yet the whole drift of his views on the matter tends to convey the impression, that the morbid substance mainly acts by its mass. When the urates, he explains, in some way or another accumulate in the blood; and when the blood, for some reason or another, loses the power of holding them in solution, they are then deposited in an articular cartilage, which is specially predisposed to their reception either by an acid reaction, or by the residues of former injury or disease. Their infiltration, he insists, precedes; their crystallisation within the interstices of the tissues provokes, the inflammatory changes.

Without discussing the numerous propositions by means of which Sir Alfred B. Garrod arrived at his conclusion, it suffices to say that the objective signs of a typical attack of gout are absolutely inconsistent with his assumption of their origin. The great swelling around the joint, the extensive collateral oedema, the distended and prominent subcutaneous veins, and the desquamation of the epidermis point to a more serious disturbance in the deeper structures of the part than can ever be produced by a primary chondritis, due, as supposed, to the gradual arrest in only minute quantities of a perfectly aseptic material.

But Sir Alfred B. Garrod himself has roused suspicion as to the tenability of his teaching. Referring to the formation of a tophus in the ear, he states that the urates are in all probability at first contained in a clear fluid, which by gradual reabsorption becomes more and more opaque till it is finally converted into the chalky mass; and that this true gout of the ear takes place as a rule unperceived, and is rarely attended by pain, because the cartilage is a non-vascular tissue, and as such not prone to inflammatory reaction. All this will of course be readily assented to. But that being so, what reason is there for supposing that the same process in the same tissue produces, when it passes in a closed cavity, results altogether different from what it invariably does when it passes openly and under our eyes? Granted that, considered as organs, the ear and the joint are not quite comparable. But the joint as such does not necessarily alter the conspicuous effects of urates, as is amply shown by the fact that not infrequently bulky deposits in it, fully crystallised as postulated, are found quite by accident, when during life there never was the least trace of the local symptoms of gout.

Theories, however, proverbially die hard. To save one of them, another is generally invented. In the face of the incontestable facts just alluded to, it was intended to rescue the one in vogue by assuming an *arthritis divitum* and an *arthritis pauperum*. In the former, uric acid is said to have its typical mode of manifestation, not so in the latter. The reason given is that, in the one, it is derived from the ingesta, and in the other, from the disintegration of the existing tissues. But the time, let us hope, is past when the luxuries of the table were immediately and bodily transported to the liver, to be there at once converted, by the deranged functions of that organ, into lithates, and discharged into the circulation to exact a cruel punishment for a slight indiscretion. So far as is known at present, every trace of the nature of the ingesta is lost this side the mucous membrane of the intestinal canal; and whenever uric acid is found, it is the result of cell activity. Meanwhile this much is certain, that the poor, whose ill fate compels them to the most frugal habits, have typical gout with uratic deposits. But whether such deposits ever occur without symptoms in

¹ Jonathan Hutchinson, The Relations which exist between Gout and Rheumatism, *Transactions of the International Medical Congress*, 1881, vol. vii.

² Alfred Baring Garrod, *A Treatise on Gout and Rheumatic Gout*. Third Edition. 1876.

³ *Op. cit.*, p. 279.

⁴ Sir Dyce Duckworth, *A Treatise on Gout*.

⁵ *Op. cit.*