laid him aside for several months. Two years after this another attack occurred. Fifteen years ago he was carefully examined by a medical man, who told him he had heart-disease. For all these years this man had followed his occupation—not so hard lately, he admits, as formerly—without in the least having suffered from the effects of this lesion. His only complaint is that he suffers from flatulence, and a sense of fullness after eating. His pulse varies from 70 to 74; a tracing of it shows the tidal wave carried above the percussion, indicating, therefore, firm arterial tension. And if I might be allowed to quote a third case, it is that of a manager of a public-house, whom I was asked to see a year ago, as he was suffering from gout. His urine, beyond being extremely acid, was healthy. On asking to examine his heart, he laughed, and told me I would find something there, as years before he was told he had a peculiar affection of the heart, which, he said, was spoken of as “double action.” To my astonishment I found aortic and mitral regurgitation, great heaving of the chest and vessels of the neck. And what was his history? Twenty-four years ago he met with an injury whilst in Edinburgh, for which he was taken to the infirmary, and his fractures treated under the direction of Professor Syme. On his recovery he was examined by Drs. Heron Watson and Gillespie, as well as others, and was afterwards, on account of his heart, made the subject of a clinical lecture in the theatre of the infirmary. His pulse is under 70, and is anacrotic, and, from the day on which he was told that he had a heart-affection, he had suffered no inconvenience from it whatever. From a review of the life history of the above cases, therefore, and of others that have done well under treatment, or lasted more than five years without any serious symptoms, I am inclined to think that, all things being equal—good home, good food, regular rest, and temperance in the use of alcohol—the occupation of the individual has influenced but very little the after history of the case. For all that, however, we must regard rest as very essential. And yet, at the present time, I know of a few young ladies who, a few years ago, were under my care, some for mitral stenosis, others for mitral regurgitation, who, in winter, skate a good deal, and, at private and public dances, dance every waltz on the programme; and, in the summer months, spend much of their time playing lawn-tennis, without suffering any inconvenience whatever. Speaking now of girls, these are the hopeful cases whose development has gone on; menstruation has not been retarded, as in the other stunted individuals. In fact, as the result of the advent of puberty, there has been sent through the whole system an influence making for increased nutrition or development concurrently with the establishment of menstruation. As for aortic disease, however, the cases that do well are those where the pulse ratio remains from 60 to 74, or thereabouts, where, with a slowly, regularly acting heart, the pulse tracing shows heightened arterial tension. Theoretically, this is not what we expect, but, with a hypertrophied left ventricle behind or below the lesion, and the peripheral arteries in a state of good tension, I see in these a means whereby the circulation can be effectually carried on, and the growing wants of the system supplied. For such a condition in all forms of heart-disease, slow pulse, good tension, and good nutrition of the heart, I strive to get by treatment, and, when I obtain it, the patient ceases, at least for the present, to be an object of anxiety to me.

Sir ANDREW CLARK: In replying, I will confine myself to three things. First, with respect to life-insurance, I defined my position very clearly, that I did not feel myself at liberty to enter upon the subject; but, as it has been taken up, I may say something about it. I have nothing to do with any life-insurance office, but I frequently have submitted to me cases for arbitration. First of all, the mitral disease shall have existed independently of degeneration in the heart; secondly, that it shall have existed for two years; thirdly, that the ventricles shall be in good order; fourthly, that the arteries shall be sound; fifthly, that there is no persistent basic congestion nor recurrent hepatic congestion; that the patient should not be liable to colds which hang about him; and, finally, that his general health shall be good. Under these circumstances, I am prepared to say that the mitral disease will not shorten life. My second remark is this: We have been told how very important it is not to tell patients of any disease of the heart, and I gave cases in which the disease arose apparently from the information. I must recall that the attitude of the public towards us obliges us sometimes to do so. Patients are only too pleased to find out a mistake or an omission on our part. I am of opinion that it is the duty of a medical man, when he discovers any sort of injury, to deposit that knowledge with some discreet friend, with whom shall rest the responsibility of its use. Dr. Bowles has said that it would have been better for me to include in my tables cases of murmurs heard within the pulmonary area. Now, what would have been the result of that? Many of you would have said

directly these tables do not show the existence of the very valvular lesions the existence of which it is necessary to prove. Two things are well worth remembering: that, with the existence of aortic injury, it may be said that the valvular affection is to be considered, not in relation to the murmur at all, but in relation to the state of the ventricles and to the general health of the patient.

HERNIA OF THE CÆCUM.

By FREDERICK TREVES, F.R.C.S.,

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HERNIA of the cæcum, although not actually common, is certainly not rare. It has been met with in the umbilical, inguinal, and femoral regions; is most frequent in the first-named situation and most uncommon in the last. In the umbilical district it is associated, so far as I know, only with that variety of rupture known as the congenital umbilical. This rare hernia is met with at the time of birth. The coverings of the sac are formed from the tissues of the cord, and into that structure the protrusion originally extends. The condition depends upon a defect in the closure of the visceral plates, a defect that seems to be often consequent upon some imperfect development of the bowel. There is a time in the history of the formation of the gut when the cæcum lies without the future abdominal cavity. It then enters that cavity and, performing nearly a circuit in the abdomen, finally reaches the right iliac region. In the congenital umbilical hernia, the cæcum is often found arrested at the umbilical aperture. It occupies the rupture. The rupture is provided with a perfect peritoneal sac, and the cæcum lies free within it as would any segment of the small intestine. I have met with and operated upon three examples of this hernia (*Lancet*, 1881, record of one of these cases). In two the sac contained the caput coli, and in the third it was mainly occupied by a large Meckel's diverticulum. With this form of caecal protrusion, I do not propose to deal further, but to limit my remarks to the herniae that occur in the inguinal and femoral regions.

I shall describe two examples of this rupture in the situations named, and shall deal mainly with the question of the sac. There is a remarkable statement that seems to have attached itself to this condition. It is to the effect that the caecal hernia has no sac. This statement occurs, with one or two exceptions, in all the modern text-books in English and French that I have specially consulted. It appears to have been handed down from one manual to another as a species of entailed property. I shall endeavour to show that caecal ruptures are, except in a few instances, always provided with a sac, and that the gut lies clear within the interior of that sac. I believe also that there is little or no evidence to show that the cæcum may descend into the scrotum or crural region entirely bared of peritoneum, and unaccompanied by any diverticulum from that membrane. Further, I doubt if the *hernie akystique* of the French has any existence, so far, at least, as caecal ruptures are concerned.

Among the early reported cases of caecal hernia is one recorded in 1732 by Arnaud (*Dissertation on Hernias*, pt. 2, obs. xvii.) that may here be noticed. It concerned a man of 60, who had had a scrotal hernia for twenty years. The tumour had a circumference of twenty-seven inches, and reached to the middle of the thigh. For some years he had had occasional attacks of colic. At last the rupture became incarcerated, and on the fifth day herniotomy was performed. The sac contained the ileum with the cæcum and colon—some ten inches in all. “The intestines were adherent to the hernial sac and to each other, and were even gangrenous at several points.....I employed one hour and a quarter in dividing the adhesions and bridles which connected the colon to the hernial sac. At last, being at a loss what method to follow in order to finish the operation, I resolved to cut away the whole mass of the protruded intestines close to the internal ring.....The ileum, the cæcum, and the beginning of the colon were twisted together, the colon having passed over the ileum towards the inner side and the ileum towards the outer side, and both of these intestines had contracted strong adhesions with the edges of the inguinal ring.” The patient made a good recovery, a permanent fecal fistula, however, resulting. Scarpa, in commenting upon this case, maintains that the adhesions were natural, and that there was an imperfect sac. The description, however, more closely accords with the view that the adhesions were the result of the local peritonitis that is frequently associated with this form of hernia.

With regard to the question of sac or no sac, I may in the first place point out that the anatomy of the parts concerned would fully support the view that the cæcum, when herniated, may be provided with a complete sac, and lie free within it, as would any loop of the smaller bowel.

In my Hunterian Lectures on the Anatomy of the Intestinal Canal and Peritoneum, delivered at the Royal College of Surgeons in 1885, I pointed out the following facts bearing upon this matter. In opposition to current views, I stated that I had never found the posterior surface of the cæcum uncovered by peritoneum; I had never found it attached by areolar tissue to the iliac fascia; and I had not met with a single example of a meso-cæcum. These statements were founded upon the examination of 100 fresh bodies. Other points were these: in the great majority of instances the apex of the cæcum corresponds with a point a little to the inner side of the middle of Poupart's ligament; in a number of cases the cæcum hangs over the pelvic brim; in 18 per cent. it is lodged entirely within the pelvic cavity. In every instance, out of 100 examinations, the cæcum was free and entirely invested by peritoneum. The line of reflection of the peritoneum from the posterior wall of the cæcum on to the posterior abdominal parietes varies. It is usually placed between a line on a level with the summit of the iliac crest, and another on a level with the anterior superior spine. Those who are impressed with the orthodox description of the cæcum, will scarcely believe that the average measurement in a vertical line along the back of the colon from the tip of the cæcum to this reflection of peritoneum is four inches. In one quite exceptional case it was eight. The mobility of the cæcum is great, and depends upon two conditions, upon the length of intestine that extends between the tip of the cæcum and the reflection of the peritoneum, or upon the presence of an ascending meso-colon. In eleven instances the cæcum could be made to touch the liver, or any part of the left side of the pelvis. In some of these specimens it may well have occupied a hernia on the left side. In one case the tip of the cæcum could be made to touch the xiphoid cartilage, and in several instances this mobile piece of intestine could be drawn down the thigh to the level of the great trochanter.

With these anatomical conditions it is easy to conceive a hernia of the cæcum unattended by any peculiarities as regards the sac. The statement that the cæcal hernia has no sac, or an incomplete one, can be traced back at least as far as Scarpa's celebrated treatise on hernia. This work was published in 1809, and here I think the statement—in its present form—takes its origin. Authors previous to this time had spoken of sacless cæcal hernie. Thus, Chopart and Desault (*Traité des Maladies Chir.*, t. ii, p. 195), writing in 1796, state that they had seen the cæcum lying bare of peritoneum under the integuments of the scrotum. Seruin (*Journ. Gén. de Méd. par Sedillot*, t. xvi, p. 302) had met with a like condition, and had indeed introduced the term "entéroécle akystique." Scarpa took up the following position. He owned that the free and movable portion of the cæcum may form the contents of a hernia in the groin, may lie in a clear sac, and be susceptible of ready reduction. He gives a case of this form, and an excellent illustration of the parts when exposed (Plate vii, Fig. 1). With regard to other forms he writes thus: "In dissecting several of these hernie, I have found that the cæcum with the appendix, and the beginning of the colon in descending through the internal ring into the scrotum, not only relax the natural bridles which connect these intestines to the os ilii and to the psoas muscle, but likewise that these intestines in descending draw after them into the scrotum, that part of the great sac of the peritoneum to which they are naturally united opposite to the right side. Consequently, the hernial sac within which these intestines are contained, is formed of the same identical portion of the great sac of the peritoneum, which in the sound state lined the ilio-lumbar region.....Whence it happens that on opening the hernia the intestines are found adhering to the hernial sac in the same manner as they were united to the great sac of the peritoneum within the abdomen in the right ilio-lumbar region." He supports this statement with cases, and some admirable illustrations. I cannot say, however, that these figures serve to prove the point. They show that the herniated cæcum may have only a partial sac, and be covered by peritoneum only on its anterior aspect. No anatomist could say that they show an arrangement of the peritoneum, that would be normal were the gut lying in the iliac fossa instead of in the scrotum (Plate vii, Fig. 2). In the chief case it is stated that "the appendix was, in several places, in continuity with the hernial sac." The figure shows this; but it cannot be said that an adhesion of the appendix to the peritoneum of the iliac fossa in several places is a normal condition.

Pelletan (*Clinique Chirurgicale*, Paris, 1810); Hesselbach (*De ortu et progressu herniarum*, Würzburg, 1816); Cloquet (*Recherches sur les*

causes et l'anat. des hernies, Paris, 1819), and others, all adopted Scarpa's view of the state of the sac in cæcal hernia, namely, that it was partial only in the majority of cases. Lawrence, in his famous *Treatise on Ruptures* (5th edition, London, 1838), accepted Scarpa's explanation entirely. He went further, however, and described a cæcal hernia without any sac at all. A few years later, the *System of Surgery*, by Chelius (London, 1847), appeared in English. In that work it is simply said with reference to cæcal hernia, that "there is not any sac." From Chelius to the present text-books of surgery is only a step.¹

Lawrence's case of cæcal hernia without a sac requires notice. It is reported in the following words: "A man, aged 45, had laboured under scrotal hernia for several years, without wearing a truss. He was attended by a surgeon in this city, in consequence of symptoms of strangulation, which had existed for three days. The usual means to afford relief were employed without success; hence an operation was deemed necessary. A careful dissection was made through the various coverings to the gut, but no sac or peritoneal coat could be found. In searching for a sac, an opening was made into the cæcum, from which fecal matter escaped; until this occurred, the operator could not know that he had opened the intestine, as the coats were thickened and greatly changed in appearance. That the passage of the contents of the bowels might be quite free, the lower margin of the internal oblique and transversalis was divided. In the space of thirty-six hours fecal discharges took place through the wound, but the patient died three days after the operation. On examination after death, the hernia was found to consist of the inferior and posterior parts of the cæcum, which could not originally have been covered by peritoneum to the usual extent. The portion of intestine had passed behind the peritoneum, between the spermatic cord and the cremaster muscle. The appendix and the junction of the ileum with the cæcum were close to the internal ring, and it was in this situation that the peritoneum was reflected from the walls of the abdomen to the cæcum."

To prove his point, Lawrence makes an anatomical assumption which some may not be disposed to allow. It is difficult to understand how the tip of the cæcum, that is usually wholly covered by peritoneum, could have bared itself of that membrane, and yet have shown such a reflection as is described. The case better accords with some such theory as this. The free end of the cæcum is protruded into a hernial sac. It inflames. Its walls are thickened, and become adherent to the sac; the latter is obliterated. Apart from all explanation, the case is not so clear that it can be said to prove the existence of a sacless hernia. It is, however, the best reported case of this supposed condition with which I am acquainted.

One specimen, however, must be mentioned in connection with this matter. It is in the museum of St. Bartholomew's Hospital (No. 2,115), and is thus described: "Inguinal hernia, combined with hydrocele of tunica vaginalis. The hernia is situated behind the enlarged tunica vaginalis, which is flattened by the pressure of the hernia. The hernia is opened posteriorly, and its contents, which are the cæcum and part of the colon, are there shown. The vessels of the spermatic cord are separated; the spermatic artery and the vas deferens pass together along the inner and posterior part of the hernia, and the spermatic veins are at some distance external to them. There is no true hernial sac."

Through the kindness of Mr. D'Arcy Power, I have been enabled to examine this specimen carefully. In the first place, it presents a sac of clear outline, capable of holding a hen's egg. The continuity of this sac with the general peritoneum can be readily traced. In the second place, the gut contained in the hernia is not cæcum. It is a loop of colon quite free from adhesions. Its anterior part only is covered with the sac, so that a large portion of the circumference of the loop—less than one-half—is uncovered by peritoneum, and is outside the sac. The specimen affords an excellent example of incomplete sac, but it is not an example of a cæcal hernia without a sac.

Another specimen in the same museum (No. 2,086) shows a cæcal hernia with a large sac that is nearly but not quite complete.

It may now be convenient to describe the two examples of hernia of the cæcum upon which this paper is based. The first case is that of a man, aged 41, who was admitted into the London Hospital on May 31st, 1886, with a very large and remarkable looking scrotal hernia. The patient was a potman, and had always been engaged in public houses. He was of average height, was spare, of slight muscular development, and unhealthy-looking. He was flabby, and a little anæmic. He had been in the habit of drinking a great deal. Apart from the rupture, the patient appeared to have had no definite ill-

¹ It is but fair to say that South, the translator of Chelius, adds a footnote in which he protests against his author's statement, and declares that "the cæcum does descend into a true hernial sac beyond doubt."

nesses, other than such as may depend upon excessive drinking. His account of the hernia was as follows. Fourteen years ago, when turning a drunken man out of a public-house, he was thrown violently to the ground, and was knelt or jumped upon. From this resulted a small strangulated hernia in the right inguinal region. The patient was not aware he had a rupture prior to the assault in question. With its first appearance, it became strangulated. It was of small size, and did not extend to the scrotum. He was taken to St. Thomas's Hospital, where the gut was reduced by operation. The wound appears to have been attacked by erysipelas, and sloughing and copious suppuration followed. He remained in the hospital for nearly twelve months. When he left, there was a large and irregular scar in his groin, but the rupture had entirely disappeared. The suppuration does not appear to have involved the scrotum. He wore no truss, and saw nothing of the hernia for six years. At the end of that time, it appeared again very insidiously, and increased slowly but steadily. In less than a year, it had descended into the scrotum.

About two years ago, the tumour "began to be double;" the outer or second swelling appeared, and increased very rapidly. The scrotum became larger, and in a little while the whole mass had attained to twice its previous size.

For some years the scrotal tumour had been readily reduced. When, however, the second swelling appeared reduction became difficult, and, for the last year or so, the patient had made no attempt to replace the intestine. With regard to the outer tumour when it first appeared, and was of small size, its contents were readily returned; as its dimensions increased it became quite irreducible. The patient had

never worn a truss; when the tumour was small he wore a suspensory bandage, but of late years the mass had become too large for any kind of supporting apparatus. The rupture gave him a great deal of trouble, and the inconvenience of it was still increasing. It was the seat of a wearisome dragging pain, that became unbearable after much exertion or long standing. It was the cause, he thought, of some pain he felt in the back. He was liable to frequent attacks of slight colic and to indigestion. He was troubled with flatulency, and the bowels were irregular; sometimes he was constipated, at other times he had diarrhoea; he was often a little sick; it is very probable that some or all of these latter symptoms were due in part to his habit of excessive drinking.

The large size of the swelling exposed it to frequent injury, and he had difficulty in concealing it from view even when he wore an apron. Of the two tumours, the outer one had been the most troublesome; it had been now and then the seat of definite pain, attended with considerable tenderness. The patient sought relief because the hernia was beginning to incapacitate him from work.

In the right inguinal region was a tumour of considerable dimensions, divided into two distinct parts. (See Figure.) The inner of the two swellings presented the ordinary characters of a scrotal hernia of large size. At the posterior and inferior part of the mass the testicle could be indistinctly felt; the tumour was resonant on percussion, and appeared to contain intestine only; the greater part could be reduced, but the reduction was effected slowly, and with difficulty; the scrotal tissues, apart from the effects of distension, were perfectly healthy; the left side of the scrotum and the left testicle were normal. The outer tumour was irregularly oval, its long axis being vertical; it covered

nearly the whole of the front of the thigh near the groin, and extended down the limb for seven inches; the surface was lobulated, and covered by thin integument that near the inguinal ring was composed mainly of scar-tissue. The tumour was connected to the body by a narrow pedicle, with a diameter of less than two inches; this pedicle joined the neck of the scrotal hernia, and the two fused together at an enormous external inguinal ring. Beyond this point the swellings were perfectly distinct. It was evident, however, that they communicated, for when attempts were made to reduce the scrotal rupture, the other tumour increased in size; the outer swelling was resonant on percussion in front and at its outer side, dull on its inner side. Its contents were irreducible, although the size of the tumour could be greatly diminished by squeezing the contained bowel; masses of omentum could be felt in the inner portion of the swelling. The abdomen was quite flat, and not disposed to be pendulous.

The operation for radical cure was performed on June 4th; it was carried out "antis-ptically," the spray being used. I made an incision, four inches long, in about the usual position for inguinal herniotomy. It was so arranged as to cross the united neck of the two tumours; the interior of these was soon exposed; they were both entirely lined by peritoneum, and possessed a common neck placed at the opening in the abdominal parietes. The scrotal tumour simply contained a mass of perfectly free coils belonging to the ileum. These were reduced without difficulty.

The outer tumour was less easily dealt with. At its inner side there was a very large mass of omentum, a considerable portion of which was adherent. At its outer side was the cæcum, the appendix, the commencement of the ascending colon, and the last few inches of the ileum. The appendix and ileum were free, but the cæcum was attached to the sac in several places by a number of firm peritoneal adhesions.

All that part of the cæcum and colon that occupied the hernia was entirely covered by peritoneum. There was no meso-cæcum. The bowel, but for the adhesions, would have been hanging free into the hernial sac. These adhesions were divided, the omentum was freed, was clamped as high up as possible, and the part below the clamp cut away. Of the divided omental vessels, the six largest were secured by catgut ligatures; the remainder were nipped by Wells's forceps, which were twisted off, without loosening the blades, before the operation was completed.

When all intestine had been reduced, the neck of the sac was carefully separated from its connections at the opening in the parietes, and firmly closed with stout whipcord. There was no inguinal canal, simply a large hole in the situation of the canal capable of receiving all the fingers. The margins of this aperture were brought together by two sutures of Chinese twist. The structures of the cord were widely separated over the surface of the sac. The testicle was wasted and hard, and the epididymis could not be distinguished from the gland. The testicle, the cord, and the whole of the sac below the ligature were now removed. The testis appears to have been inflamed after the first operation. On section, it was found to be represented only by a homogeneous fibrous mass. The greater part of the skin covering the double tumour was cut away; the piece removed measured about six square inches. After the sutures and drainage-tube had been inserted, the incision was represented by a simple line. The operation occupied one hour.

I did not approximate the margins of the hernial ring under the impression that union of those margins would follow. I considered that the two sutures would serve to prevent protrusion of bowel during the healing of the skin-wound. If healing by first intention were to follow, the encysted sutures would long serve to keep the edges of the ring together. If suppuration followed, the amount of inflammatory material poured out while these two foreign bodies were being eliminated would, when organised, form a fair barrier against further protrusions. The stump of the omentum was introduced well into the abdomen, and left free in that cavity. The coils of ileum in the scrotal hernia, and the small segment of that gut in the outer tumour, were not continuous. So far as I could ascertain, a considerable length of unprotruded ileum must have existed between the two herniated segments.

When the cæcum was free, it was carefully examined. The appendix had not become adherent, either to the sac or the gut. When the extreme upper limit of the protruded colon was examined, the line of reflection of the peritoneum from that bowel to the posterior parietes was reached. This reflection was just at the hernial ring, and, from it, it would appear that there was no mesocolon to the ascending colon.

In attempting to reduce the scrotal hernia, a little of the gut could be pushed by the omentum into the outer rupture-sac.

It would be safe to assume that the original scrotal hernia contained small intestine only, and that the formation of the second tumour was encouraged by the weakening of the parietes, due to the suppuration and sloughing. The second sac was formed from the first, the two having a common neck.

The wound was dressed with sponge and iodoform, and subsequently with iodoform-gauze. The patient made a good but slow recovery. The skin-wound healed, but suppuration took place in the deeper parts. A month after the operation, the patient was up and about, and a small sinus alone existed. He was seen again two months after the operation. There was considerable thickening about the inguinal opening. A minute discharging sinus, which gave no trouble, still existed. On examining this, the whipcord-loop applied to the neck of the sac was found lying quite loose; on its removal, the sinus closed. There was not the least trace of any return of the rupture four months and a half after the operation. No truss had been worn.

The second case was that of a woman, aged 56, who was admitted into the hospital on June 18th, 1886, with a severe contusion of the hip. She incidentally drew attention to a large rupture in the right groin. She looked much older than she was; was very thin and flabby, and in feeble health. She had had several children.

She first noticed the rupture about two years ago. She discovered it by accident. It appeared so gradually that she was unable to give any account of its early condition. She followed no occupation apart from her own household duties. The rupture never gave her any trouble. She never had made any attempt to reduce it, and could not say whether it was reducible or not. She had never worn a truss. The swelling had increased gradually in size.

The hernia was femoral and of considerable size. The long axis of the tumour was parallel with Poupart's ligament, and measured 4½ inches, reaching to the anterior superior iliac spine. The vertical width of the tumour was 2½ inches. It was irregularly lobulated on the surface. The coverings were very thin, and the integument was white and atrophied. The tumour was always tympanitic on percussion. The thin parietes and the general wasted condition of the patient enabled one to make out with great distinctness the vermiform appendix. It lay in the lower part of the swelling, and could be rolled between the finger and thumb. It could be followed into a large rounded and lobulated mass of gut that was evidently the cæcum. The sacculi of the bowel were reproduced through the thin wall of the hernia. The swelling was tympanitic. The whole of the contents of the rupture were reducible. After pressing upon the rupture for a few seconds, the gut within slipped suddenly back *en masse*. The patient had never seen it reduced before, and it was apparently little affected by the recumbent posture. When the hernia reformed, the same physical characters were reproduced in the tumour, and the appendix reappeared in the same place. The femoral ring would have readily taken three fingers. The abdomen was flat and, indeed, sunken.

The patient stated that she was very liable to indigestion, and to attacks of "spasms." She was occasionally sick during such attacks. Her bowels were irregular; they were sometimes confined and sometimes were opened freely. Latterly she had had diarrhoea. These symptoms were probably independent of the hernia. They had existed before the rupture was noticed. The patient lived very poorly, and for several years had been practically edentulous. In this case, the thin coverings of the hernia made it clear that it contained the cæcum and appendix. There was evidently a perfect sac, the reduction, when effected, was complete, and the protruded bowel must have been provided with a perfect peritoneal covering. In Guy's Hospital Museum (No. 2,503-52) is a specimen closely allied to the present case. It shows a right femoral hernia in a woman aged 47, that contains the whole of the cæcum. It lies free within a distinct sac. The rupture had been irreducible for years, but had given little trouble.

Speaking of cæcal hernia generally, museum specimens and recorded cases show that the rupture is much more common in inguinal than in femoral herniæ, is more common in males than in females, occurs on the right side, and is practically limited to adults. With regard to the last-named points, Schmidt (Pitha and Billroth's *Handbuch*, Stuttgart, 1878, p. 38) mentions a case of cæcal hernia in the left inguinal region. The gut had a mesentery, and hung quite free in a well-formed sac. It was readily reduced. Sandifort (*Icones Herniæ Congenitæ*, 1781) records the case of a male infant, aged 3 months, with a congenital scrotal hernia of the right side. The sac contained the cæcum, appendix and end of the ileum. The appendix was adherent to the testicle and to the bottom of the sac. Sandifort suggests that this adhesion was congenital, and that as the testis descended the cæcum was dragged after it. Mr.

Lockwood has reported a case of congenital scrotal cæcocele and refers to like examples by Wrisberg and Cloquet (*Med. Chir. Trans.*, vol. lxi, p. 506).

The large museums of London, namely, those of the College of Surgeons, and of St. Bartholomew's, Guy's, and St. Thomas's Hospitals, contain seven specimens of cæcal hernia. Eight cases, including the two now reported, occur among recent records. In two out of these fifteen cases (St. Bartholomew's Museum, No. 2,086, and Schmidt, p. 38) the sac is incomplete. In one there is a sac, but its limits are obscured by morbid adhesions, and the results of dissection (Guy's Museum, 2,487-10), and in the remaining twelve cases² there is a perfectly clear sac, such as exists in ordinary ruptures.

In the cases with perfect sacs, that part of the cæcum and colon is protruded that would naturally have been free and covered by peritoneum while in the abdominal cavity. In the very excellent specimen in St. Thomas's Hospital Museum some four inches or more of a normally arranged cæcum and colon lie free within the sac.

It is to be noted that in these cases the peritoneum that lines the iliac fossa is actually drawn down, as Scarpa believed. This is shown by the fact that the line of reflection of the peritoneum from the colon to the parietes, instead of being about the level of the iliac crest, will be just within the inguinal ring. This was very evident in my case, and is clearly demonstrated in the museum specimen just named. In a case of Petit's (*Traité des Malad. Chir.*, t. ii, p. 352, published about 1790) the same arrangement was evidently present. Should such a protrusion increase, the enlarging sac may obtain a fresh supply of peritoneum from this very reflection; and so in time some of the upper part of the herniated gut may be bared posteriorly, and an incomplete sac be established.

An incomplete sac, when it exists, may be formed also in this manner. The cæcum protrudes as a free segment of gut. It alone occupies the sac. Some loops of small intestine now descend, the sac increases, and in its growth drags the peritoneum from the hinder wall of the cæcum. Schmidt records a good example of this, which is illustrated by a clear figure. The cæcum is covered only on its anterior aspect. From the apex of the cæcum, which is high up in the sac, there extends to the bottom of the sac a falciform fold of peritoneum, which certainly appears to have been stripped from the cæcum. In such a case the connective tissue aspect of the caput coli is not necessarily turned backwards. The gut may be so distorted in its position that all the cæcum visible from the front may be bared of peritoneum.

The cæcum may be protruded alone, or with it may be coils of ileum and omentum. In such cases the cæcum will usually lie to the right, the ileum to the left and the omentum between the two.

Of the clinical characters of the cæcal hernia, there is little to be said. It is usually irreducible or difficult of reduction. This may depend upon mere bulk or engorgement, or upon adhesions, or upon an incomplete sac, or upon the fact that the line of reflection of the peritoneum is close about the hernial neck.

It is apt to become inflamed, and, as a result, to become adherent. Typhlitis and perityphlitis—so-called—may occur when the cæcum and appendix are in the scrotum, as well as when they are in the iliac fossa.

The hernia is frequently in the condition known as that of incarceration or obstruction, and, when so affected, it appears to present no distinctive symptoms. It then compares with a loop of transverse colon obstructed within the sac of an umbilical hernia. The rupture may be strangulated, but this condition does not appear to be so common as that just named.

² Guy's Museum, No. 2,503-52; St. Thomas's Museum; College of Surgeons Museum, Nos. 2,634, 2,635, 2,638; *Medical Times*, June, 1859, p. 578; *Gazette des Hôpitaux*, March, 1871, p. 149; Pathological Society's *Transactions*, vol. i, p. 101; *Ibid.*, vol. i, p. 103; Schmidt, *loc. cit.*, p. 37.

SEA-WATER SUPPLY OF BOURNEMOUTH.—The Bournemouth Improvement Commissioners contemplate spending £9,000 in a scheme for supplying the town with sea-water for street-watering and sewer-flushing. The Local Government Board has informed the Commissioners that it would be necessary to obtain the consent of the Gas and Water Company to the proposed scheme; but the Company objects, on the ground of the largely increased rates and the injury the sea-water may do to their pipes.

JUBILEE HOSPITALS AND ENDOWMENTS.—A proposal will be submitted at the annual meeting of members of Sir Sydney Waterlow's Industrial Dwellings Society, to set apart a sufficient fund for maintaining beds in convalescent homes for the use of the Society's tenants, thus providing a permanent memorial of the fiftieth anniversary of Her Majesty's accession.