ance from emotional causes. It is extraordinary how frequently one is able to trace diabetes, or grave functional disorder of the stomach to grief or worry; and although it is impossible to protect patients from these injurious causes, just as it is impossible to protect them from overwork, yet we must do our best to lessen their injurious effects. Probably the best way of doing this is, to remove from the patient's mind during the hours when digestion is going on, so far as is possible, the source of grief, worry, or anxiety which disturbs him. It is, therefore, well to insist, that he shall give orders that no letters or telegrams be given to him, or any commercial intelligence in the papers be looked at, until at least an hour after dinner.

Another most important factor in the proper regulation of the hepatic function is, the removal of waste products from it. The bile is one of these, and its accumulation in the bile-ducts leads to its re-absorption and circulation in the blood, with all the consequences which the injurious effect of the bile upon the nerve-centres is likely to produce. The bile is secreted under very low pressure, and its expulsion from the liver is effected, to a great extent, by the mechanical pressure exerted upon the liver by the diaphragm during respiration. When the person leads a perfectly sedentary life, so that no calls are made upon the respiratory organs for increased action, the pressure of the diaphragm on the liver is diminished, and consequently there is a tendency to the accumulation of bile in the biliary radicles, and to its absorption into the blood. This shows the physiological necessity for exercise in persons who are liable to bilious attacks; and of all forms of it, exercise on horse-back and rowing are probably the best. Half an hour's brisk ride, will do more good to the liver than two hours' walking. Here I ought perhaps to have said a few words in regard to cholagogues; but as I mentioned at the commencement, this subject of digestion is so wide, that to go into it in detail would extend my paper far beyond any limits that could be allowed to it.

THE IMMEDIATE CURE OF INGUINAL HERNIA BY A NEW INSTRUMENT.

By W. DUNNETT SPANTON, M.R.C.S.ENG.,
Surgeon to the North Staffordshire Infirmary.

The operation has been performed in the following cases since the paper published in the JOURNAL of December 11th and 25th was written.

CASE XIV. *Right Oblique Inguinal Hernia*.—Mrs. S., married, aged 27, residing at Hanley, a stout, well-developed, healthy woman, had only one child, ten years previously. She never had any serious illness. She first noticed rupture eight years ago, after falling down some steps. It had gradually increased in size, and latterly became painful. When I saw her on September 23rd, 1879, there was a right oblique inguinal hernia about the size of a duck's egg; and the inguinal ring was quite open. After preliminary preparation, I operated at the patient's house on October 7th, 1879; Dr. Partington administering chloroform. Lister's antiseptic dressings were used, and the operation was performed under carbolic spray. After the operation, some chloroform-sickness ensued, which soon subsided.—October 8th. She slept little, but had no pain. There was frequent retching. Temperature 98.5° Fahr.; pulse 96.—October 9th. She slept well after a dose of morphia. The wound was quiet. Temperature 98.5° Fahr. She had no pain.—October 10th. She was going on well. The wound was dressed under spray. There was slight serous discharge, and some oedema along the inguinal canal, with induration. She was ordered to have a dose of castor-oil. The daily progress was uninterruptedly good, and she suffered no pain.—October 15th. The wound was dressed, and the instrument removed. There was very little discharge; the track of the instrument was indurated throughout.—October 23rd. The antiseptic dressings were removed. The wound was almost healed. Simple dressing and a pad and bandage were applied.—October 26th. The wounds were quite healed. She was allowed to get up. There was no impulse in the inguinal canal on coughing.—November 14th. She had been about ordinary household duties, and felt quite comfortable, and could stoop and move about without any pain or discomfort such as she had previously. She wore a pad truss, and has continued well and strong since.

CASE XV. *Right Inguinal Congenital Hernia*.—Frederick J., aged 4, was admitted into Children's Ward, North Staffordshire Infirmary, under Mr. Spanton, on August 23rd, 1879. He was a healthy unmanageable child, with a large scrotal hernia of the size of a man's closed fist. The inguinal rings were very wide, and the finger could be passed easily within the abdomen. No truss was of any avail to

keep up the rupture. On August 23rd, after the usual preliminary treatment, I performed the operation with the screw instrument under chloroform. Owing to the great width of the pillars of the hernial ring, I could not satisfactorily secure a hold upon the internal pillar, which was, indeed, so far obliterated that it was formed chiefly by the border of the rectus-sheath. I had some misgiving at the time that the hold I had obtained was not sufficiently secure; and the sequel shows that this was well founded.—August 24th. The patient had, during the night, removed the lint pad, and also the ball from the point of the screw. The latter was not replaced; but the bandage was firmly reapplied.—August 28th. The patient was very restless, although he said he had no pain. The instrument had become twisted somewhat, owing to his constant movement. He took food well.—August 30th. A slight attack of diarrhoea came on.—August 31st. The instrument was removed (eight days after operation); there being a moderate amount of irritation in its track, and slight purulent discharge. The temperature had never risen above 98° Fahr.—September 5th. The hernia had descended again, and the inguinal ring was almost as patent as before operation. The child appeared quite well.—September 30th. He was allowed to get up. It was found impossible, even with a firm pad, to keep up the rupture. Feeling convinced that the failure was due to an imperfect hold having been obtained on the internal pillar of the hernial canal, quite as much as to the unruly behaviour of the patient, I decided to operate again; and on October 10th, under chloroform, I performed the operation a second time, taking especial care to obtain as firm a hold as possible of both sides of the inguinal canal. This involved taking up the sheath of the rectus; and I found that the adhesion of the subcutaneous tissues to the skin of the scrotum rendered the separation of them more troublesome than usual. But the operation was satisfactorily completed in the ordinary manner.—October 12th. He slept well; had no pain. He was much less restless than after the former operation. Temperature 98.6° Fahr.—October 13th. There was some oedema of the scrotum; no discharge.—October 21st. He progressed well. The highest temperature had been 99.6° Fahr. (on 13th); since then, normal. There was a considerable amount of local irritation along the course of the instrument, and a moderate purulent discharge. The instrument was removed under chloroform.—October 24th. The wounds were healing rapidly; the discharge had ceased. This morning, while dressing, the child cried lustily; but there was no tendency to any descent of the bowel. The canal was occupied by a firm fibrous mass, and completely occluded.—December 8th. He was allowed to get up, wearing a pad-truss; and on the 19th he was discharged well.

CASE XVI. *Right Oblique Inguinal Hernia*.—Thomas P., aged 20, glass-cutter, single, was admitted into the North Staffordshire Infirmary on August 29th, 1879. The rupture was about the size of a hen's egg, of three months' standing, caused by jumping. On August 30th, the operation was performed in the usual manner, under chloroform.—September 3rd. There was slight discharge from the lower wound. The general condition was good.—September 6th. The instrument was removed; the ball being embedded under the skin, owing to the screw being rather too short.—September 10th. The discharge had ceased; the wounds were nearly healed. There was a firm cord along the inguinal canal, which gave no impulse on coughing.—September 15th. He was allowed to get up. The wounds were quite healed; the plug firm.—September 22nd. He was discharged well.—September 29th. He called to report himself as feeling quite sound, and not needing a truss.

CASE XVII. *Right Congenital Inguinal Hernia*.—Albert C., aged 6, was admitted into the Infirmary on September 11th, 1879, under Mr. Alcock. Before admission, the hernia was strangulated, and great difficulty was experienced in its reduction. On admission, a rupture of the size of a small egg was present, quite reducible. On September 13th, the operation was performed under chloroform, after the usual preparation.—September 14th. He suffered but little pain, slept well, and seemed comfortable.—September 20th. The instrument was removed under chloroform.—September 24th. The wounds were nearly healed; the discharge was slight. There was some swelling of the scrotum. No impulse was produced on coughing.—October 9th. He was allowed to be up. The hernial canal was obliterated, and there was no impulse on coughing. He was discharged cured. The highest temperature in this case was 99° Fahr.

CASE XVIII. *Right Inguinal Congenital Hernia*.—William C., aged 5, was admitted into the Infirmary on September 30th, 1879. The child, on admission, did not appear strong. He had a right congenital hernia of the size of a large hen-egg. The pillars of both rings could be clearly defined, and the openings easily admitted one's finger. Cod-liver oil and iodide of iron were ordered for a few days; and on October 11th, after the usual preparation, the operation was performed by Mr.

Folker under chloroform.—October 12th. He slept well; no pain. Temperature 98.4° Fahr.—October 20th. The instrument was removed. Some difficulty was experienced in taking away the ball from the point of the screw, owing to its being buried in the tissues. Temperature 100° Fahr.—October 23rd. A hard, rather painful enlargement was felt on the right side of the scrotum. There was free purulent discharge. Temperature 101.4° Fahr. He was ordered to take some bromide of potassium mixture, and have evaporating lotion applied. The swelling gradually subsided, and on October 30th the temperature was normal. He was allowed to be up on December 7th. The swelling was quite gone; the inguinal canal firmly occluded; no tendency whatever to recurrence of hernia. He wore a pad-truss.—December 11th. He went home quite well.

CASE XIX. *Right Inguinal Hernia*.—Mary F., aged 26, milliner, was admitted under my care on November 14th, 1879. The patient, fairly healthy, but not robust, had been subject to hernia for about seven years, for which no cause could be assigned. It had never been strangulated, but was often painful; and, although a truss to some extent would keep it up, yet it often would come down and cause inconvenience. As she was engaged to be married, and anxious to have something done to effect a permanent cure, my friend Dr. Orton of Newcastle asked me to see her, with a view to operation. There was a right inguinal oblique rupture of the size of a duck's egg; the hernial opening being large, easily admitting the finger. After the usual preparation, I performed my operation on November 17th, under chloroform. An incision was made in the right labium majus; the skin was separated subcutaneously for an extent of about three-quarters of an inch in every direction; and the fascia and hernial coverings made to plug the canal in precisely the same manner as already described; the difference being, that in this case it was less easy to separate sufficient tissue to form an efficient plug. In introducing the screw, I was careful to obtain as firm a hold as possible at two points in each pillar of the canal, and to bring it up close, inasmuch as there was not the same necessity for avoiding constriction as in the case of men, where the spermatic cord has to be carefully considered. Lister's spray and dressings were employed; but we found that, owing to the position of the wound, it was almost impossible to carry out the system satisfactorily.—November 19th. Since the operation, she had had pain at the epigastrium. Poultices and an opiate gave relief. The dressings were changed. There was no discharge; a slight blush around the wound. Temperature 90.2° Fahr.; pulse 84.—November 21st. The dressings were renewed. Serous discharge and inflammation were slight. Temperature 99° Fahr. She was ordered a dose of castor-oil.—November 24th. The parts were dressed again under spray. There was slight discharge; the wound gaped a little. Temperature 98.8° Fahr. An enema was given; after which the epigastric pain was relieved.—November 26th. The instrument was removed under chloroform (ninth day); discharge slight, purulent.—December 10th. The discharge had been more abundant, coming from the track of the instrument. She felt quite well. Poultices were applied.—December 14th. There was less discharge; the wound was healing. She had no pain, but some tenderness to touch along the inguinal canal.—December 27th. Simple dressing was applied. The wound was nearly healed; the canal seemed securely closed; no impulse on coughing.—January 1st. She was allowed to get up, wearing a pad truss. The patient has since married, and has had no tendency to any return of the rupture up to this time (November 1880).

CASE XX. *Right Inguinal Oblique Hernia*.—Fred. D., aged 6, was admitted into the Infirmary, under my care, on November 18th, 1879. The patient was healthy, and the rupture was first noticed six months previously. On admission, both testes were down; there was a large oblique inguinal right hernia of the size of a small orange. The tissues were very lax, and the rings large. On November 22nd, I operated, under chloroform, in the usual manner, without experiencing any difficulty. At the same time, the prepuce was divided, to relieve phimosis which existed.—November 23rd. He slept well; had very little pain; no sickness. Temperature 99° Fahr.—November 26th. Considerable inflammatory oedema of the scrotum had appeared. There was very slight discharge from wounds. The bowels acted spontaneously. Temperature 100° Fahr.—November 29th. The instrument was removed under chloroform. Discharge free; the swelling of the scrotum continued. Temperature 101° Fahr., indicating the need for removing the instrument.—December 12th. The wounds were quite healed. The temperature fell to normal after November 29th, and remained so.—December 29th. He was allowed to get up, wearing a pad-truss, which he bore quite well.—On January 8th, 1880, he went home; the inguinal canal being firmly occluded, with no tendency whatever to any return of the rupture.

CASE XXI. *Left Congenital Inguinal Hernia*.—John C., aged 7, was

admitted into the Infirmary, under the care of Mr. Folker, on November 11th, 1879. He was rather a delicate-looking boy, in whom the rupture had come very gradually. On admission, there was a left inguinal rupture, which descended to the size of a hen's egg, with very patent ring.—November 15th. The operation was performed by Mr. Folker, after the usual preliminaries, under chloroform.—November 16th. He had had no pain nor vomiting; he was very quiet. Temperature 99° Fahr.—November 17th. The wounds were dressed. The parts were quiet. Temperature 99° Fahr.—November 19th. He had a troublesome cough. Slight discharge. He complained of pains in the legs (from lying so still?). Temperature 98°.—November 24th. The instrument was removed under chloroform. The discharge was rather profuse; but the surrounding irritation was less than in some cases where the screw was removed earlier. Temperature 100° Fahr.—December 12th. The wounds were quite healed. He wore lint pad, and bandage.—December 19th. He was allowed to get up, with a pad-truss. The parts were quite firm, without any tendency to return of the rupture.—December 22nd. He went home quite well.

CASE XXII. *Right Inguinal Hernia from Application of Sayre's Jacket*.—Elizabeth M., aged 5, was admitted into the Infirmary, under Mr. Folker, on December 18th, 1879. The child was admitted for angular curvature of the spine; and had a Sayre's jacket applied in the ordinary way. Very shortly afterwards, she was found to have a right inguinal rupture coming down as large as an egg, and easily reduced. On January 10th, 1880, the hernia was operated upon with the screw instrument under chloroform.—January 11th. She had an opiate last night, and was quite easy to-day. Temperature 98.6° Fahr.—January 17th. The instrument was removed easily. There was considerable irritation around the wounds. Temperature 98.4° Fahr.—January 22nd. The wounds were still discharging. There was a good plug of thickened tissue in the hernial canal.—February 2nd. Over the track of the screw, a small abscess formed, which broke this morning. *She had a bad cough.* She continued to improve; but, on March 15th, for the first time, there was noticed a tendency to a return of the hernia at the internal ring when she cried or coughed much, but at no other time. She left the infirmary, wearing a pad. The chief point of interest in this case is in the unusual cause for the hernia; and this was probably the reason, moreover, why the operation was not perfectly successful. If it had been deferred until the child's health had improved, and her cough relieved, it is quite possible that the result would have been more perfect. But even as it is, a pad sufficiently controls what tendency to bubonocoe exists to gradually complete the cure in all probability.

CASE XXIII. *Right Oblique Inguinal Hernia*.—Daniel A., aged 25, miner, was admitted into the Infirmary, under Mr. Alcock, on January 6th, 1880. Four years previously, the rupture was caused by lifting a weight. At first, only a bubonocoe existed, until three weeks before admission, when the hernia descended to the extent of two inches below the external ring, and was easily reducible. He had been wearing a truss, but this failed to keep up the bowel. On January 10th, the operation was performed under ether. The tissues were very loose, and invagination was easy. After the operation, he had much pain, requiring opiates. Evening temperature, 99.8° Fahr.—January 12th. The right half of the scrotum was oedematous, and the skin somewhat inflamed. The ball came off the point of the screw, but was not replaced. He complained of considerable pain and thirst. An opiate at night, and soda-water, were ordered. Temperature 101° Fahr.—January 14th. The scrotum was much inflamed and swollen. Castor-oil was ordered. Temperature 101.4° Fahr.—January 16th. The bowels acted after an enema. The swelling and inflammation of the scrotum were increased; the discharge profuse. Temperature 102.4° Fahr. The instrument was removed.—January 21st. The discharge was still profuse. The inflammation of the scrotum was subsiding. He had but little pain, and felt much better. Temperature 98.2° Fahr. Some matter formed on the outer and upper part of the scrotum, which was opened on February 1st, and washed out with carbolic acid lotion. From this time, he gradually improved; and, on March 1st, the wounds were quite healed. A firm mass of tissue occupied the lower part of the hernial canal; but the hernia could be felt slightly to enter the internal abdominal ring, and then was stopped by the plugged canal. He left the infirmary on March 15th, wearing a pad-truss. In this case it would appear that an insufficient hold was obtained on the pillars of the internal ring; or it may possibly be that the excessive suppuration which occurred tended to loosen the early adhesion which was set up, and allow the invaginated tissues to slide, as it were, from their first secure position. As it is, the patient is much better for the operation.

For the two following cases, I am indebted to Mr. Jabez Thomas, Surgeon to the Swansea Hospital.

CASE XXIV. *Left Congenital Hernia*.—Charles E., aged 11, was

admitted into Swansea Hospital, under Mr. Thomas, on December 26th, 1879. "The operation was carried out in all its details on January 12th, under the carbolic spray, and the whole instruments and wounds covered with a pad of gauze, secured by a bandage. The patient once vomited during the night, and the following morning complained of pain and tenderness over the lower part of the abdomen; no tympanites. Temperature, A.M., 102°; P.M., 100.4°. Liquor morphine (Mx) relieved him, and the next day this had disappeared.—January 14th. Temperature, A.M., 102°; P.M., 100.4°. As the gauze was saturated with blood and serous oozing, the parts were dressed under spray. Looked well; tender; no redness; a little œdema of scrotum, and orchitis.—January 19th. The temperature gradually went down, until it reached normal on this day. The wound was dressed as before: slight suppuration; induration along canal well marked. Soap-and-water enema caused good evacuation, the patient feeling no pain or inconvenience. The left testis was still swollen.—January 23rd. The screw was removed; there was no suppuration; the wound was dressed as before. There was good induration along the course of the inguinal canal. The bowels acted naturally.—January 26th. The bowels have continued to act daily naturally.—January 28th. The dressings were removed. The wounds were healed. *The canal was occupied by a good firm elongated plug, to which no impulse was imparted on coughing.*—February 12th. He was discharged cured."

CASE XXV.—Mr. Thomas writes: "The second case, in a child nine years and a half old, ran a similar course to the first, with equally good results." "I saw my first case a few days ago, and found the inguinal canal quite obliterated; and there was no impulse imparted to the induration which occupies its site."

It would be difficult, I think, to adduce stronger testimony than this of the practicability and efficiency of the operation.

A NOTE ON THE ALUMINOUS CHALYBEATE WELL OF HARROGATE.

By GEORGE OLIVER, M.D.Lond., M.R.C.P.

THE publication, in the JOURNAL of December 18th, of the recent analysis of the ancient alum-well at Harrogate by my friend Mr. R. H. Davis, F.C.S., suggests, in the absence of published experience, a note on some therapeutical applications of it.

My observations have been mainly directed to the external use of this powerfully astringent water; and during the past season it afforded gratifying results in the following classes of cases.

1. *Relaxation and loss of tone of pharynx and larynx; chronic congestion of pharynx.* This water was administered as a spray-inhalation.

2. *Profuse phthisical perspiration.* The undiluted water sponged, or, what was more grateful, and perhaps more efficacious, sprayed over the skin, surpassed all other remedies in one extreme case.

3. *Leucorrhœa; relaxation of vagina and mucifarious glands.*

Other applications, promisingly useful, may be further noted. In relaxed and debilitated conditions of the skin, the addition of this strong aluminous chalybeate to the bath-water—e.g., the spray or needle-bath, or the ordinary sponge-bath—may prove adjuvant to the valuable chalybeate and other courses of treatment prescribed at Harrogate; and, as a dressing or lotion in certain obstinate skin-diseases (e.g., chronic eczema, the vegetal parasitic diseases) and chronic ulcers, this stimulating and astringent water may play an useful part in the local treatment.

My limited experience of the internal use of the water does not enable me to draw any definite conclusions as to its therapeutic force or range. I am, however, persuaded that it may prove beneficial in some cases of chronic diarrhœa and dysentery, and other chronic discharges, whether hemorrhagic, mucous, or purulent. My few observations suggest that the commencing dose should be small—a tablespoonful, or even less; that it should be well diluted, and should not be taken on an empty stomach, but an hour after meals.

Such medicinal virtues as the water possesses appear to depend mainly on the acid and astringent properties of the persulphates (which exist in the large proportion of one grain to the ounce), and the rich charge of iron salts (proto- and per-sulphates). It may be noted that, unlike some allied waters—e.g., Sandrock, Isle of Wight; Vicar's Bridge, near Dollar; strong chalybeate of Moffat—it is not too concentrated for convenience; and, though a very strong chalybeate, its constituents are in perfect solution, and not in suspension, like some of the muddy mine-washes which have been dignified as mineral waters.

Among the well-known rich and varied resources of Harrogate, this sulphated chalybeate may be easily passed over, as it has been for more than a hundred and fifty years. But, though its range of application

as a curative agent is undoubtedly limited, it cannot be supplied by any member of the unexampled series of medicinal waters which Harrogate possesses, and should not, therefore, be ignored. Among its richly endowed fellows, it will doubtless hold its own, whatever the shape ultimately given to its province of usefulness by observation and experience.

A CASE OF CÆSAREAN SECTION, IN WHICH BOTH THE MOTHER AND CHILD WERE SAVED.*

By WILLIAM WALTER, M.A., M.D.,

Obstetric Surgeon to St. Mary's Hospital, and the Manchester and Salford Lying-in Hospital.

My paper consists of an abstract of some notes which I took of a case of Cæsarean section that occurred four years ago in the North Staffordshire Infirmary, under the care of Mr. Alcock; and I am much indebted to that gentleman for his kind permission to make use of the case on the present occasion.

During the last four years, Porro's operation has become known, and laparo-elytotomy has, through the exertions of Dr. Gaillard Thomas, been so much improved, that both are now fully recognised as rival operations to the Cæsarean section. Time and experience are yet needed before we can arrive at accurate conclusions as to the relative merits of these various operations over one another; but much can be done towards the solution of this difficult and important problem if the profession will search for and record all those cases of Cæsarean section which still remain unpublished. In Manchester, our veteran and highly esteemed obstetrician, Dr. Radford, has during the last two months collected from various sources upwards of a dozen cases of the Cæsarean operation that have never been published; and he has mentioned these cases in a second edition of his *Observations on the Cæsarean Section*, which is now going through the press.

On June 23rd, 1876, K. T., a dwarf, in labour, was sent into the North Staffordshire Infirmary by Mr. Alcock, who, a few hours before, had seen the case in consultation with Mr. Taylor of Burslem. The patient, a primipara, twenty-eight years of age, was of remarkably low stature, being only three feet six-and-a-half inches in height. This diminution in stature was mainly owing to the shortness of her lower extremities, which scarcely equalled one-third the length of her body. Notwithstanding this, she could walk very well, and on many occasions accomplished a distance of three or four miles without fatigue. The expression of her countenance did not betoken a high mental development, and her general disposition was decidedly apathetic. Her health was good, and her body well nourished. The catamenia commenced when she was seventeen, and rarely showed any irregularity. She told me that she had been married more than a year, and had come on the previous day to the Burslem Wakes, to be exhibited with her husband, whose height was an inch and a half less than her own. He was forty years of age, and, from his conversation, seemed fairly intellectual. She stated that, for several successive days, she had been driving in a caravan through the country; and the jolting she sustained had induced labour three weeks before the proper time. The pains had commenced twenty-four hours before her admission, and for the last six hours there had been but a short interval between them.

Her face wore no appearance of anxiety; nor did she seem to have suffered much constitutionally from the somewhat protracted period of her labour. Her pulse was good, 100 in the minute, and showed no perceptible alteration during the continuance of a pain. The temperature was normal, and there was no abdominal tenderness. On passing my hand over the uterus, I perceived that its long axis corresponded to a line drawn from the centre of Poupart's ligament on the left side to the floating ribs on the right side. The placental *bruit* was audible over most of the anterior right aspect of the uterus; while the foetal heart was only distinctly heard over a small area at the upper half of the same side. The vagina was not too hot, and was well moistened with a slimy discharge. The membranes had been ruptured five or six hours. The os uteri was of the size of a shilling, quite soft, and responded feebly to the pains, which were coming on every ten minutes; it was situated very high, and in close proximity to the bladder. The promontory of the sacrum was very large, and certainly did not leave more than one inch and a half for the antero-posterior diameter of the inlet; the transverse diameter was below the normal; and the diameters of the outlet were not appreciably altered. The presentation was a knee; but, in addition, part of a foot could be felt very high up and near the pubes.

A consultation of the staff was held soon after her admission into the

* Read in the Section of Obstetric Medicine at the Annual Meeting of the British Medical Association in Cambridge, August 1880.