motor sympathies between the bladder, uterus, and rectum, as though there was some short cut between these organs, whereas there is no motor connexion or route whatever, except it be through the spinal centre, and by way of the excitor and motor nerves. In all, there is the excitor nerve, the spinal centre, and the reflex motor nerve concerned; at one end of the nervous arc there is the physical irritation, at the other, the motor contraction. As in other cases of excito-motor action, sensation may be present, but it is by no means essential. Physical irritation of the excitor surfaces, short of sensation or pain, may produce all the phenomena of abortion. This is one of the facts which renders the due recognition of all the excito-motor causes of abortion so essential to the prevention and treatment of this accident.

We may look on abortion as, in some points of view, comparable with spasmodic asthma, or any other excito-motor disease. From some irritating cause, an excitable condition of the excito-motor arcs presiding over parturition is induced, just as in the case of asthma, where it is the respiratory nervous arcs which are similarly affected. In either case the excitability, once induced, slight causes of irritation, which in healthy subjects would produce no disturbance whatever, are sufficient to excite, in the one case, spasmodic respiration; in the other, morbid or spasmodic parturition. Besides the ordinary periodicity of abortion—namely, the tendency to premature expulsion at the catamenial dates, there is another periodicity observable in abortion, in the tendency to the occurrence of miscarriage in successive pregnancies at a particular time. It often happens that we may see in these cases the obvious physical cause of abortion developed at the special times; but in others there seems to be a habit, or periodicity, the nature of which we cannot understand.

CENTRIC CAUSES OF ABORTION.

But besides the causes of abortion involved in physical irritation of spinal excitor nerves, there are other causes in which the circulation and the *Spinal Centre* are chiefly concerned. There are certain erythematic conditions of the system in which abortion is very prone to occur. These are, the exanthemata, particularly small-pox, and syphilis, in each of which a special poison is introduced into the blood; the pyretic state of the system which obtains at the commencement of the non-specific fevers and simple inflammations of the viscera, is attended with similar danger; the scrofulous diathesis, too, has been considered as prolific of abortion as the syphilitic; but, I believe, with far less justice. The inhalation of carbonic acid rapidly excites abortion, and during accidental or intentional poisoning by this gas the ovum is often found expelled. During the celebrated razzia in Algeria, in which a great number of Arab women were suffocated in the caverns of Dahra, those of them who were pregnant were found to have aborted. Military histories offer examples of the same kind in other countries. I believe the retention of noxious elements in the blood, in the albuminuria of pregnancy, to be a cause of abortion as well as of puerperal convulsions. There are also certain specific agents, as the essential oil of savin and the ergot of rye, which, if persisted in, are adequate to cause abortion; and lastly, all the agents recognised in toxicology may cause abortion, as well as the destruction of the parent, when administered during pregnancy. In all these instances the blood is the medium by which the exciting agent is conveyed to the spinal centre. They are precisely similar to the artificial abortion which may be excited in the lower animals by direct mechanical irritation of the spinal marrow.

Another important cause of abortion, acting through the spinal centre, is *Emotion*. This cause, unlike those which reach the spinal centre by the blood, is purely *psychical* in its nature. The influence of emotion in causing the uterus to evacuate its contents is as undoubted as the influence of emotion upon the stomach or upon the rectal and vaginal sphincters. But as in the case of uterine excito-motor action, ordinary emotion does not affect the uterus instantaneously. Time is required for the effects of emotion to develop themselves into uterine excitability. The rapidity with which emotion affects the uterus is proportionate to the intensity of the emotion. A violent fit of anger, serious fright, or intense grief, may lead to abortion a few days after the violence of the emotion has disappeared. During religious persecutions women have aborted suddenly at the stake; and here the emotion produced by excessive terror would probably be the chief cause of the accident. Thus emotion may, under extreme circumstances, act upon the uterus, and produce abortion, even more readily than ordinary excito-motor causes.

In the history of abortion, there has been a too general

tendency to attribute the accident to some particular and almost universal cause. For instance, at one time abortion is referred almost exclusively to disease of the ovum; at another, to the strumous diathesis; at another, to disease of the os uteri: on this latter point I would be understood as not in the slightest degree undervaluing the researches of Dr. Henry Bennet, or Mr. Whitehead of Manchester; but I contend that the study and recognition of ALL the manifold causes of abortion is necessary to the student and the practitioner.

The next Lecture will be devoted to the treatment and prevention of Abortion.

Hospital Reports.

LUDLOW UNION INFIRMARY.

Reported by H. MEYMOTT, Esq., Surgeon, Ludlow.

Gun-shot Wound; Extraction of Splintered Bone.

HERBERT E—, aged nineteen, a farm-servant, was admitted into the Upper Ward, on the 23rd of May, 1847. It appeared that he had been getting over a hedge with his right hand bent on the muzzle of a gun loaded with powder and shot. By some accident the gun went off, and its contents entering at the ball of the thumb, and passing upwards through the wrist, came out at the lower end of the radius, a small portion of the articulating surface of which was splintered off. The hæmorrhage was very profuse, but was effectually restrained by pressure. The point to be decided was, whether, with so extensive an injury, amputation should be performed. After some consultation, it was decided that an effort to save his hand should be made. The arm was placed upon a splint; simple dressings were applied to the wounds; cooling aperients given occasionally; and he was placed upon low diet.

After a few days the constitutional derangement became very embarrassing. The pain extended up the arm, which became very much swollen. These symptoms gave way under appropriate treatment. Small particles of bone, and some shot, occasionally came away from the upper wound. Both the apertures discharged freely. A few weeks after his admission, inflammation set up over the back of the hand to such an extent, that I found it necessary to make a free incision from the upper wound, diagonally, across to the lower end of the metacarpal bone of the third finger. The opening of the sinus formed in this part gave very effectual relief. The inflammatory action subsided, and he began to amend in his health and strength, which had suffered severely. He was made an out-patient about three months after his admission, with the apertures unhealed and discharging. He came to my surgery regularly, to have his wounds dressed, walking several miles, and his general health rapidly improved in the country. Inflammation, however, was again set up, about two months after he left the Infirmary, and I laid open another sinus that had formed in the direction of the thumb. This in its turn afforded much relief. Still the wounds refused to heal, or to cease discharging; and examination by the probe plainly indicated denuded bone. At length, after a protracted labour of eight months, I had a very fair presentation; and having recourse to the forceps, (a stout pair of dental ones,) I extracted without much difficulty the whole of the scaphoid bone. Since then everything has gone on well; the wounds healed very shortly; the patient's health became fully established, and though the outer part of the wrist-joint is necessarily ankylosed, he has a very fair use of the middle, third, and fourth fingers.

I think this case usefully shows how the powers of Nature, under careful control, will restore soundness to a very dangerous wound.

REPORT OF A CASE OF LUMBAR ABSCESS, AND RECOVERY.

By FRED. G. REED, Esq., F.R.C.S.E., &c., Hertford,
SURGEON TO HERTFORD GENERAL INFIRMARY.

On the 3rd of February, 1846, I was requested to see Mrs. —, aged forty, residing about four miles from Hertford, a Frenchwoman by birth, of sanguine temperament, and who had been in unceasing and anxious attendance upon her husband, deceased of phthisis about two months previous to the above date. I was pre-informed, that only upon earnest solicitation she had been induced to consult me, having expressed a great antipathy to "English doctors;" and she ap-

peared to be most anxious to conceal her feelings, and to withhold information as to her ailments.

I found her considerably altered in appearance, and emaciated, (since her husband's decease, when I last saw her,) and in a state of great anæmia and mental depression. I was assured that until the last three months she had always enjoyed perfect health, and that her present state had come on insidiously; neither could she recollect having received any injury. Upon examination, I ascertained that she was free from any cardiac or pulmonary disease; she had no cerebral or spinal symptoms; nor had she been the subject of hysteria or rheumatism. She acknowledged having a fixed pain in the left lumbar region, not much increased upon gentle pressure; but upon a full inspiration or coughing, with the hand placed on the front of the abdomen, and pressing deeply in the region of the kidney, the pain was acute. It was aggravated upon movement of the body, and extended down to the hip, groin, and upper part of the thigh, with an occasional feeling of numbness of that side. There was no increase of pain on bending the thigh on the pelvis; she expressed herself easier whilst lying on her back, but attempting to lie on the affected side produced much suffering: she described the pain, as not of a dull, aching character, but a burning pricking sensation in that region. On percussing the vertebræ, no pain or sickening sensation was produced; the right lumbar region was perfectly free from any tenderness. She had suffered from occasional pains in the abdomen, more particularly during the last week, on the left side, with anorexia and nausea; no difficulty in voiding the urine existed; the bowels had been costive, but not unusually so; pulse, small and feeble, and general slight febrile disturbance; and she informed me that her urine (with the exception of its being occasionally turbid with a white deposit) had always been natural in appearance, though the calls to void it had been more frequent.—Ordered a tepid bath, an alterative aperient, and a stimulating embrocation, with belladonna; mild and nutritious diet, recumbent posture, and perfect quiet.

Feb. 5th.—Her mind is very much depressed, and she expresses an unwillingness to adopt any measures, it being her conviction and hope that she will soon follow her husband to the grave; she would not permit me to examine her urine, and was very laconic in her communications. I therefore merely induced her to take another aperient, and to observe the previous directions.

7th.—Refused to see me on my visit to-day.

10th.—Succeeded in obtaining the urine she had voided during the night. It was pale, clear, neutral, specific gravity 1010, and upon testing it by heat and nitric acid, I found it highly albuminous. The pain and tenderness have increased in the left lumbar region; pulse quick and small; tongue preternaturally red at the sides: she feels feverish, thirsty, and restless.—Ordered twenty leeches to the left lumbar region; calomel with compound ipecacuan powder every four hours.

11th.—Pain slightly abated. Continue remedies.

12th.—Has passed a restless night; complains of increased pain, extending to the groin and thigh, and much thirst; had considerable febrile exacerbation last night, with copious perspiration in the morning, which she now admits has occasionally been the case for the last two or three weeks. Pulse still quick and small; urine pale, rather turbid from mucus, neutral, specific gravity 1012, highly albuminous.—Ordered sixteen leeches, a blister to be applied above the seat of pain, and warm fomentations and cataplasms to the loins, which afford much relief. Continue calomel every four hours; acetate of morphia, half a grain, at bedtime.

13th.—Pain certainly abated; has passed a better night; urine pale, less in quantity, and almost neutral; found only a trace of albumen, with ferrocyanide of potassium and acetic acid. Continue medicines.

14th.—Pain increased, and more diffused about the hips and loins; pulse quick and small; urine neutral; albumen very evident, both by heat and nitric acid.—Ordered to be cupped to ten ounces on the left side, rather above the region of the kidney—(no trace of urea could be detected in the blood;) continue calomel. Ordered wine of colchicum seeds, fifteen minims; infusion of bearberry leaves, an ounce and a half. Mix for a draught, every six hours. Tepid water enema; Blistered surface to be kept open.

15th.—Sympathetic fever very severe; pain not diminished; perspirations profuse; urine scanty, neutral, still albuminous.—Continue calomel, without the acetate of morphia, at bedtime.

17th.—Pain dull and aching; prostration, thirst, and feverishness; occasional rigors; urine neutral, albuminous, slightly turbid when passed. After standing, the supernatant

fluid is clear. I collected the deposit, and discovered pus globules by the microscope. Mouth being affected, calomel to be discontinued.—Ordered nitric acid, bark, and morphia at bedtime.

18th.—Hectic symptoms very marked; urine alkaline, turbid from mucus, no albumen or pus traceable.

19th.—Great prostration of strength; had a violent shivering fit last night, succeeded by intense heat; perspirations still most profuse; countenance very anxious; urine scanty, and albuminous, neutral, and pus globules very evident. Pain of a dull pulsating character, with a feeling of weight, and externally the left lumbar region appears swollen.

20th.—Debility and exhaustion very great; she complains of nausea; has great numbness of the affected side; considerable circumscribed fulness in the left lumbar region; no alteration in the colour of the skin. Urine neutral, slightly albuminous and purulent, specific gravity 1011.—Ordered, hydrocyanic acid, (Scheele's,) two minims; with carbonate of magnesia and orange-flower water, every six hours. Continue nourishment, &c., with brandy occasionally, and acetate of morphia, one grain at bedtime.

21st.—Less exhausted; irritability of stomach abated; swelling much increased; no fluctuation.

22nd to 24th.—Little variation in the symptoms, excepting that neither albumen nor pus globules could be detected.

25th.—The irritative fever and state of exhaustion being so great, and the swelling in the left lumbar region considerable, although I could not detect any distinct fluctuation, I determined upon making an opening in the loins. I first introduced a grooved needle, which was not long enough to afford me any information. Having no trocar with me, I plunged a French bistoury deeply into the swelling, but owing to the cellular œdema no matter followed. I therefore introduced a director, enlarged the wound, and passed a sharp-pointed bistoury more deeply, and about half a pint of the most offensive pus, with a distinct urinous smell, followed. The wound was then carefully closed with plaster, and compressed. Gave her a drachm of tincture of opium with carbonate of ammonia, and to be repeated if necessary; brandy, &c., *ad libitum*, during the night.

26th.—Feels comparatively free from pain in the loins; had some sleep, and has rallied; feverish symptoms not so severe. I did not disturb the wound. Ordered ammonia and decoction of bark, with an opiate occasionally. Has passed urine six times during the night, averaging three ounces and a half each time; the last has muco-purulent deposit, chiefly pus, by measure, seven drachms; urine neutral, albuminous.

27th.—Slept tolerably well; not much pain during the last twenty-four hours; had voided about twenty ounces of urine at eight times, in each a purulent deposit; the whole purulent matter, by measure, three ounces; urine neutral, clear, albuminous; perspirations most profuse; diarrhœa has come on during the night; pulse very feeble. Ordered, a mixture of chalk with opium; a dose every two hours.

28th.—Diarrhœa abated; had passed about twenty-six ounces of urine at eight times in the last twenty-four hours; aggregate amount of purulent deposit, fourteen drachms; hectic symptoms not so severe.

March 1st.—Much the same; had voided twenty-eight ounces of urine at nine times; pus deposited, sixteen drachms; urine only slightly albuminous.

3rd.—Hectic symptoms increased; perspirations most profuse; diarrhœa had returned; voided only fourteen ounces of urine at four different periods; neutral; specific gravity, 1008, very little deposit, (about half an ounce,) muco-purulent. Ordered, a drachm of tincture of catechu to be added to each dose of medicine.

4th.—All the symptoms much the same. Voided eighteen ounces of urine, very little deposit, (only two drachms,) chiefly mucus; neutral.

5th.—Hectic symptoms and diarrhœa not abated; she feels weaker; nausea and occasional vomiting; had voided twenty ounces of urine at four different times; scarcely any deposit; slightly alkaline; specific gravity, 1011; has a feeling of fulness in the loins; orifice of wound closed. Ordered, citrate of ammonia, with twenty minims of tincture of opium in each dose, every four hours.

6th.—No improvement; had voided sixteen ounces of urine; no deposit.

7th.—Feels weaker, and much more pain in the loins. I made an opening with a lancet, and let out about twelve ounces of pus, (mixed with urine,) which shortly relieved her. Ordered a poultice to be applied; bark with ammonia and morphia every six hours.

8th.—Great pain, with considerable œdema of the subcuta-

neous cellular tissue around the wound, which has a diffused erysipelatous blush, and from which pus, with a very fetid smell, has been discharged freely. In the evening, a burning sensation, with erysipelas extending to the opposite side and around the hip. I applied solid nitrate of silver so as to limit it. Ordered, a lead lotion, with spirit, to be applied. Hectic symptoms and exhaustion very urgent. I was sent for during the night, it being thought she was sinking. On my arrival, I found she was merging into a low typhoid state. Ordered bark, brandy, and ammonia, beef-tea, &c., *ad libitum*.

9th.—Has rallied slightly; wound discharging profusely; voided only twelve ounces of urine, which has an ammoniacal odour; no pus globules or albumen perceptible.

10th.—Erysipelas subsiding; but considerable cellular swelling; general symptoms improved; pulse stronger; wound discharges freely.

From the 11th to the 18th her symptoms gradually improved, the fistulous opening continuing to discharge from one to two ounces of pus daily, and on pressure, a very little limpid fluid, which I ascertained to be urine.

19th.—The discharge had very much diminished, and I could discover no further trace of urine; but she complained of greater tenderness about the hip, with some swelling, and slight anasarca of the left extremity. Applied a plaster of mercury with ammoniacum, on leather, to the loins, with an opening to allow exit for the discharge, which became thin, and very much diminished in quantity. The urine voided was rather scanty, but slightly turbid from mucus; contained no albumen; generally neutral; specific gravity from 1012 to 1018. From this date her improvement was progressive, until her recovery was so far advanced as to enable her to leave this neighbourhood, and visit some friends in Surrey, for the benefit of change of air on May 1st, although the swelling in her hip did not disappear.

May 11th.—I was sent for to see her at Norwood, in Surrey, from her having suffered excessive pain in the hip, which was now much swollen. I introduced a lancet, and let out about two ounces of pus, which afforded her much relief. The fistula continued to discharge a little serous fluid. The urine was tolerably natural, and her general health was improving.

24th.—Visited her again at Norwood. The wound in the hip discharges but little, and does not appear to communicate with fistula.

June 3rd.—By desire I accompanied Sir Benjamin Brodie to Norwood, in consultation upon the case, who confirmed my opinion as to its nature, and that constitutional treatment was now more called for than local measures. I therefore advised her going to the sea-side, which she accordingly did.

August 1st.—She enclosed me, in a letter, a small piece of cancellous portion of bone, which had come from the fistulous opening in the loins. Within the six following months I visited her four or five times in London, and four or five very small pieces of bone were thrown off; since which period, however, her health has gradually improved, and she is now perfectly well and strong.

Upon reviewing this interesting case, it may be debated whether the disease commenced in the substance of the kidney, in its membranes, or in the cellular adipose tissue surrounding it, or in the neighbourhood of the psoas muscle, so as to involve the kidney secondarily. From the state of the urine, which existed, as described in my notes of the case, from the absence of any predisposition or symptoms indicating the existence of spinal disease, and from the pain not being augmented by bringing the psoas muscle into play, I am inclined to believe it originated idiopathically in the kidney, or its investing membranes, and extended subsequently to the lumbar, or extra renal structures, and to have been induced by exposure to cold. The functions of excretion and secretion being disordered, and the nervous power impaired by previous mental and physical depression, may probably have had a powerful tendency to excite diseased action in parts perhaps already predisposed to disease.

Hertford, 1848.

A FACT FOR SANITARY REFORMERS.—The returns of the Registrar-General, for the week ending April 8th, record the death of a child, aged two years, from "inflammation of the stomach and smaller intestines, combined with fluid black blood in right side and large veins of the heart, supposed to be caused by mephitic vapour from a cesspool opened, of which the contents were carried through the house." Two days elapsed between the date of the latter occurrence and the death.

ON EXCISION OF THE HEAD OF THE FEMUR IN CARIES OF THE HIP-JOINT.

By HENRY SMITH, Esq., M.R.C.S.E.,

LATE HOUSE-SURGEON TO KING'S COLLEGE HOSPITAL.

(Concluded from p. 364.)

Cases in which the Operation has been performed; those detailed by M. Roux; as performed by Oppenheim, Seutin, Textor, Schmalz, Schlitching, Heim, Vogel, and himself; History of the case of M. Roux, and Remarks; Cases of Mr. Fergusson and Mr. Simon; Relative success of the cases in which Excision of the Head of the Femur has been resorted to; Considerations on the Operation. Postscript; Very recent instances of the Operation, by Mr. French and Mr. Walton.

It remains for me to give some account of the cases in which resection of the head of the thigh-bone has been performed. There have been published accounts of cases, and I flatter myself that I am in possession of the greatest number of facts connected with the subject. Mr. South, in his edition of Chelius, mentions seven cases only. M. Roux, in a valuable lecture, published in the *Gazette des Hopitaux* for March, 1847, mentions twelve cases. Since that period no further statistics of this operation have been published, so far as I can ascertain.

I have collected altogether as many as sixteen cases of resection of the head of the femur; and of these one-half proved successful. I find that the operation was not performed in every case for caries of the joint; but it has been undertaken under other circumstances. Thus, in the twelve cases mentioned by Roux, it was performed twice for a comminuted fracture of the joint by a ball; once in a case where, after an old fracture into the joint, necrosis supervened; eight times for disease of the hip-joint; and once for caries of the great trochanter and neck of the femur. The following is a sketch of these various operations:—

Oppenheim performed it on a soldier who was wounded in the hip. The operation, however, chiefly consisted in extracting fragments of bone. The patient died on the seventeenth day.

M. Seutin performed it in a case where there had been fracture of the great trochanter and head of the femur. Many French surgeons wished to amputate at the hip-joint. The head and neck of the femur, much fractured, were removed. The patient died of gangrene of the limb on the ninth day.

Textor removed the head and neck of the thigh-bone in a case where there had first been fracture of the neck of the bone, and subsequently necrosis. Death took place on the twenty-third day. After death the pelvis was found fractured in several places.

Textor performed the operation a second time in a case where there was disease of the neck of the bone and the trochanter; the head of the bone and the cotyloid cavity were healthy. Unfortunately, sloughs took place on the sacrum, and death occurred on the fifty-third day. On examination, the wound was found nearly cicatrized; there was the commencement of a false joint, consisting in bony deposits on the femur, and a depression upon the ilium.

Textor also removed the head of the thigh-bone for dislocation of the hip from disease. Caries had destroyed half the head of the bone. Gangrene of the wound took place, and death ensued on the fourth day.

Schmalz, a Saxon surgeon, removed the head of the thigh-bone, in 1816, for caries. The diseased portion, however, had separated from the rest of the bone. The patient recovered.

In 1829, Schlitching excised the head of the bone for caries, with abscesses. A cure took place in six weeks. The patient was enabled to walk.

Heim, of Wurtzburg, excised the head of the thigh-bone with success.

Vogel performed the operation on a child with success for disease of the hip.

White's and Hewson's cases I have already mentioned some particulars of.

In addition to these, M. Roux has enumerated his own operation which he performed in February, 1847, and the particulars of which he has given at full length in the *Gazette des Hopitaux*. I shall abridge them, and give the case here, as it is particularly interesting.

The patient was a boy, aged fifteen, who had suffered for a long time from severe pains in the hip and down the thigh. This was at first considered to be sciatica, and the patient was