is perhaps too narrow. The intoxication theory is very happily expressed by Dr. Auvard when he says, "Eclampsia is the result of a 'strike' on the part of the organs of elimination." The liver is also on "strike."

4. But admitting the poison factor, the problem is not entirely solved. There is another and an essential factor which was very imperfectly recognised in the discussion: that is, the exalted nervous and vascular tension special to pregnancy. The increased nervous tension was, indeed, adverted to; but the attendant high arterial tension was not even mentioned. Now this high arterial tension is the immediate efficient cause of the kidney struggle and "strike." It is not a little remarkable that the brilliant researches of Dr. Mahomed demonstrating this arterial tension as giving rise to the pressure on the circulation in the kidney should have been overlooked. These researches explain the occasional occurrence of convulsion before the appearance of albuminuria; they prove that there is a prealbuminuric stage, the first stage of the kidney trouble. His observations, followed up by those of Fancourt Barnes with the sphygmograph, throw a new light upon the genesis of convulsion.

It is associated with a condition not adverted to in the discussion, namely, the normal hypertrophy of the heart evoked by pregnancy. This was first described by Larcher in 1857. Ducrest, Blot, Joulin confirmed this physiological fact; and I, having had opportunities of assisting at some of the observations made in Paris, and of making others in England, have almost invariably found the weight of the heart of women dying soon after labour to be an ounce or more in excess of the standard of eight or nine ounces. The observations of Marey, Mahomed, Macdonald, Fancourt Barnes and others demonstrate this hypertrophy of the heart and consequent high tension. Now this state begins in early pregnancy; it continues throughout while the child is alive; and under the mutual reactions with exalted nervous tension may so overpower the natural balance of the functions that convulsions may burst out before the appearance of albumen in the urine. The convulsion does not restore the balance; the underlying factors of nervous and arterial tension remain, and presently albuminuria may appear. In many cases the first call on the physician is to see the woman in convulsion. He, of course, examines the urine, and in all probability finds albumen. It does not follow that the convulsion was the cause of the albuminuria, or that the albuminuria was the cause of the convulsion. Both phenomena are due to the exaggerated nervous and arterial tension. The altered constitution of the blood certainly is a third factor, and it is probable that advancing toxæmia may act as the immediate cause of the explosion. The increased proportion of water and the diminution of red globules are established facts. It is not so generally known that the blood "cups" when drawn into a basin. This shows excess of fibrin. This has been taken to prove that there was fever. This, I—who am one of those who have bled, and seen pregnant women bled by others—am in a position to affirm that the blood of gravid women may "cup" when there is no fever. This characteristic must be weighed in connection with the hypertrophy of the heart and the other physiological phenomena of pregnancy.

These and other associated facts, adverted to in the work already cited, throw instructive light upon the genesis of eclampsia in puerperæ. They deserve the serious attention of those specialists who devote themselves to the study of kidney, heart, and nervous disorders, specially neglecting the luminous illustrations supplied by the great physiological experiment of pregnancy, and its analogue, menstruation. They illustrate in a striking manner the history of nephritis, Bright's disease, the capillary arterial thrombosis of Gull and Sutton, and many other pathological problems.¹

The above phenomena are physiological. Organs strained to the utmost become unequal to their functions. Overstrained physiology is, indeed, perilously near to pathology. Disease may be induced if the strain is kept up, or, on the other hand, a critical catclysm, such as abortion, or labour, or a copious hæmorrhage, may take off the strain, and physiology resumes her sway. Or the overwrought nervous system may give way to convulsion, which may eventuate in recovery, protracted disease, or death.

The principles of treatment flow logically from the obvious etiology of the affection. In the whole range of medicine, there is probably no case in which the disease so clearly dictates the treatment. In the first place, we know the main cause of the disease, the pregnancy. Some specialists, ignoring this primary factor, have enunciated the catching aphorism, "Treat the convulsion or the albuminuria, and let the pregnancy take care of itself." It would be difficult to imagine a sentence composed of two more absurdly contradictory propositions. It amounts to saying: "Treat the effect, and let the cause go on acting." I have not seldom had to contend against this theory. Wherever we find marked albuminuria, with or without convulsion, in a pregnant woman, the first and most pressing indication is to bring the gestation to an end, to reduce the complication to its simplest expression, and then to treat what remains of the effect. In many cases nothing more may be required. *Sublatâ causâ tollitur effectus*. Frequently Nature takes the right course, and frees herself from impending danger by abortion or premature labour. This is one example of what may be called "conservative abortion." Timely effected, it may save two lives; the opportunity neglected, two lives may be lost; or if the mother is saved, it is possibly at the expense of her future health.

But we cannot always depend upon delivery in time. The next indication is to moderate the high nervous and vascular tension. Here again Nature sometimes guides the physician. A copious flooding, which may or may not be the precursor of abortion, sets in, and the fit and the albuminuria may be at once relieved. This suggests venesection—a disputed point. It is not wise to make venesection a rule in practice, but the empirical evidence in its favour in appropriate cases is incontestable; nothing so quickly lowers the excessive action of the heart.

The next indication is to calm the nervous irritability and reduce nervous tension. This indication is of extreme importance. A golden rule I have always long enforced is "in any case in which a fit is probable, to make no examination, not to pass the catheter, to force no food or medicine until the patient is under the influence of chloroform." The slightest disturbance, especially touching the genitals, may provoke a fit.

In the prealbuminuric stage, salines, calomel, podophyllin are eminently serviceable. In the eclamptic stage chloroform comes first. It will frequently avert or shorten the fit. Chloral also acts well. I have seen inhalation of nitrite of amyl act excellently. I advised recourse to this agent in my Lumleian Lectures in 1873. Of pilocarpin I am not in a position to speak with confidence. Antipyrin is worthy of trial, but I doubt if it will act as well as chloroform or nitrite of amyl.

The main motive of this communication is to invite more extended inquiry into the relations of albuminuria and eclampsia; to show that there is no necessary or constant association of the two conditions; that we cannot regard either as the cause of the other; and that therefore a primary cause of both exists in the constitutional conditions evolved by pregnancy. All rational treatment flows from the recognition of this elementary fact.

THE DIAGNOSIS OF SPURIOUS AND DOUBTFUL PREGNANCY.

Read in the Section of Obstetric Medicine and Gynecology at the Annual Meeting of the British Medical Association held in Bournemouth, July, 1891.

By A. D. LEITH NAPIER, M.D., M.R.C.P.LOND.,
F.R.S.Ed.,

Physician Accoucheur St. Pancras and Northern Dispensary; Physician to Out-Patients Chelsea Hospital for Women, etc.

SPEAKING generally spurious pregnancy is most commonly met with in elderly women about their climacteric, or in young women unduly anxious to become pregnant, or guiltily conscious of the possibility of pregnancy.

Following Pajot, errors of diagnosis regarding these cases may be divided into three classes:—1. Affirmation of pregnancy which does not exist, pseudocyesis. 2. Denial of

¹ We have other evidence of high arterial pressure in the cerebral, pulmonary and intestinal hæmorrhages of pregnancy.

existing pregnancy. 3. Confusion of one species of pregnancy with another.

1. *Affirmation of Pregnancy which does not Exist.*—In this class errors may arise from:—

(a) A mistaken interpretation of certain functional troubles. The patient may honestly believe that she suffers from the usual sympathetic affections of pregnancy, and give such an account of her symptoms as may prove very misleading. Arrested or lessened or irregular menstruation, sympathetic tingling or enlargement of the mammae, lacteal secretion, sickness, flushings, irritability of temper, vesical irritation, may all be experienced.

(b) Various enlargements of the abdomen and in the pelvis may be mistaken for utero-gestation. These may be intra- or extrauterine tumours or conditions simulating tumours. Ascites, pelvic abscesses, ovarian or parovarian cysts, fibromyomata subperitoneal or interstitial, hæmatometra, pyometra, tympanites (so-called "nervous pregnancy"), extreme fatness of the abdominal walls (so-called "adipose pregnancy"), or a combination of two or more of these conditions may be cited as examples. Early pregnancy may be simulated by uterine enlargements from chronic metritis, small interstitial fibromyomata, perimetritic or parametritic deposits, which may convey a false impression of the uterine dimensions. Still, these errors are not only less likely but less important than mistaken diagnoses made when the abdominal enlargement resembles a pregnancy of five, seven, or nine months' duration. Eliminating cystomata, fibromyomata, and other large growths and effusions, there remain these curious cases of pseudocyesis named flatulent and adipose pregnancy.

(c) Modifications of the neck of the uterus resembling those of pregnancy, which are, however, less important and most often due to inflammatory or atrophic conditions, may be sources of error.

(d) Stethoscopic signs resembling uterine and fetal vascular sounds may be heard.

There is a condition of abnormal enlargement with allied sympathetic symptoms, but with no discoverable definite uterine or ovarian tumour after the patient has been deeply anaesthetised. These are the cases of so-called nervous or flatulent and adipose pregnancy, usually named "spurious pregnancy."

In such cases the diaphragm seems depressed, the intestines are projected forward and greatly distended with flatus, the recti feel rigid, there may be an undue deposit of fat in the abdominal walls and omentum. Contractions of the abdominal muscles occur, and these with the tensely enlarged flatulent colon and distended intestines resemble not only the uterine body but mimic the uterine contractions. Palpation and percussion may both prove misleading, the former, on account of the displaced intestine and unyielding abdominal walls seeming to suggest uterine enlargement, the latter on account of the fatty omentum yielding dulness instead of resonance.

CASE I. Spurious Pregnancy: Mimic Labour.—Mrs. B. was sent to my out-patient room at St. Pancras Dispensary by Mr. Parker, of Fulham, on March 17th, 1890. The patient was an intelligent, sensible woman, of good physical development, aged 42. Menstruation began at about 14 years of age. She had never suffered from irregularity except when pregnant. She had one living child, now aged 22, and had had two abortions, one eighteen years the other sixteen years previously. There was no history of uterine disease.

Present Illness.—In May, 1889, she suffered from morning sickness, had swelling of the feet and ankles, her breasts became enlarged, and there was a secretion of milk. She went to see her medical attendant, and told him she believed herself to be pregnant. She arranged for Mr. Parker to attend her in her expected confinement. About this time the periods were very scanty and irregular, but to the account she gave was confused. She gradually increased in size, and felt what she regarded as fetal movements. On one occasion in January, 1890, she suffered from rhythmic pains, and, believing herself to be in labour, sent for her medical attendant. After lasting some hours these pains passed off. Mr. Parker examined her then, and subsequently did so again in consultation with a medical friend, but he could not satisfy himself that she was normally pregnant. She thought the abdomen had become smaller since February.

State on Examination.—As I was unable to make a definite diagnosis the patient was examined under chloroform. On bimanual examination the uterus was found normal. There was a doubtful indefinite swelling about the size of a Tangerine orange in the region of the right broad ligament. This was ill defined, but there was a distinct feeling of thickening and flaccid resistance in the lump wholly different from the condition on the left side, which was normal. The cæcum was markedly distended; the size of the abdomen lessened, but the enlargement did not wholly disappear under full anaesthesia. The abdominal walls

were very fat, and the intestines bulged prominently. The breasts were well developed, and there was a free lacteal secretion. On recovering from the anaesthetic the patient was emphatically assured that she was not pregnant. Camphor, assafœtida and nuxvomica were ordered. On March 24th she reported herself as feeling much easier; she still complained of shortness of breath. The bowels were now regular, and the swelling of the abdomen not nearly so great; she could walk much better without becoming fatigued; milk persisted in the breasts. On April 24th she was feeling still better; she had had a period on April 12th which lasted two days. On being again questioned about the mammary secretion she said that about a year ago or more she experienced considerable itching on the nipples; she rubbed them to relieve this and then noticed milk flowing; it had continued in varying quantity ever since. Abdominal palpation discovered an indefinite lump in the right inguinal region. On bimanual examination the uterus was found normal in size and freely movable. There was no evident connection or adherence between the uterus and the swelling on the right side. She complained of right-sided neuralgic pain, which seemed to start from about the rectum and from there passed up to the right inguinal region.

In April, 1891, Mr. Parker kindly informed me regarding Mrs. B. The milk ceased to flow some six weeks or more before his report. Menstruation, which prior to consulting me, had been "hardly seen for a year," had since been regular, and in fair quantity; the general health was good.

The above case presents most of the usual features found in pseudocyesis, and except for the existence of a small lump in the region of the right broad ligament would be a typical example. I am unable to determine the precise nature of the swelling; I regard it as most probably a small quiescent dermoid cyst.

While false pregnancy is by no means very rare, mimic labour, as in this case, is very uncommon. The late Dr. Matthews Duncan only knew of one example.

Cases of flatulent distension which resemble pregnancy usually occur about the climacteric or in sterile women who suffer from irregular menstruation. Yet this is not invariably the case. I have seen such conditions in fecund married women, and, in these, errors are naturally more probable. If too great reliance is placed on the subjective symptoms, or even on objective signs, without taking the precaution in doubtful instances to anaesthetise the patient, mistakes might easily be made. We find an explanation for some of these curious cases of marked spasm and enlargement of the intestines, accompanied by sympathetic disturbances of the nervous and circulatory systems, by referring the initial cause to derangements of the sympathetic. Probably, in consequence of some nervous derangement acting on the abdominal sympathetic, we have in the first place spasm of the muscular coats of the intestine which is productive of more or less persistent distension above the site of contraction; then follow the various subjective symptoms which we are accustomed to associate with these cases. Painful errors have been made by a misinterpretation of such symptoms in virgins or ladies but very recently married.

One would hardly expect to find difficulties of diagnosis arising from distension due to *post-partum* or *post-abortion* pendulous belly. In these cases, while there may be a certain amount of intestinal enlargement from flatus, the belly generally feels soft, and there is an absence of resistance.

CASE II. Pendulous Belly.—One patient I saw in January, 1890, was sent in consequence of an abdominal enlargement, which was regarded as probably pelvic tumour, or, possibly, ectopic gestation. This lady had been delivered only eight weeks prior to my seeing her. I found that she suffered from a very prominent *post-partum* pendulous belly, complicated by two lipomatous growths in the sheath of the rectus muscle; the left ovary was prolapsed and enlarged.

It is always easy to be certain about a case if the objective signs are clear; yet there are certain signs which we are wont to regard as of the highest corroborative value, but which, after all, are not reliable.

Active movements seen or felt by the accoucheur are practically as certain as any secondary sign can be. Budin and Braxton Hicks have specially described these contractile movements. After palpating for a time and pressing the patient's abdomen gently, one feels below the abdominal wall a body which contracts, and the belly, which formerly was supple and soft, becomes harder and more tense. We have, in a word, the sensation of uterine contraction. There are three possible sources of error. The contraction of the uterus may be due to its being occupied by a collection of blood (hæmatometra), of pus (pyometra), or by a dead or degenerated foetus, or, again, by an intrauterine polypus.

CASE III. Hæmatocolpos and Hæmatometra.—Quite recently I saw a highly instructive case in St. Thomas's Hospital. The subject was a married multipara who had been delivered six months before her admission to hospital. She had a history of very tedious labour, followed by an inflammatory illness of two months' duration, during the greater part of

which time she had an offensive discharge. She had not nursed her child. The menses had not appeared since her confinement. On admission there was a hard body rising 5 inches above the symphysis, which felt alternately hard and soft, and contracted rhythmically. This was manifestly the uterus. The vaginal canal was occluded. The finger could not discover the cervix, which was shut off by a transverse septum; a cyst-like swelling could be felt from the vagina, still more clearly from the rectum, and seemed to be continuous with the uterus. The vaginal septum was divided by Dr. Cullingworth; over 7 ounces of dark treacly fluid slowly exuded. The case was one of hæmatocolpos and hæmatometra.

The second source of possible error is, I believe, almost equally rare—namely, contractions of the uterus sympathetically with movements in an ectopic gestation cyst. In such a case the uterus lies in front of the gestation sac, and close under the abdominal wall. It is difficult to understand why a uterus occupied only by a decidual lining should be subject to such rhythmical action unless in accord with nervous sensations conveyed from the neighbouring sac.

Thirdly, contractions of an irritable distended bladder may be mistaken for contractions of an enlarged uterus. On this account it is always judicious to catheterise the patient before examination.

Sympathetic tingling or enlargement of the mammae is so often associated with ovarian irritations, that, unless as a confirmatory symptom, this will not be likely to lead to confusion. But the classical pigmentation, and vesicles of Montgomery especially, may be held to have more weight; yet I have seen these in a non-pregnant woman. It is not very uncommon for milk to persist in the breasts long after the cessation of ordinary lactation, even for several years. I have known several instances of women who have had a free secretion of milk lasting continuously for years, and persisting during four or five consecutive pregnancies. In the first case here recorded there had been no secretion of milk for about sixteen years; it made its appearance with the other symptoms of false pregnancy, and seems to have been the last suggestive sign to vanish.

The one certain sign of pregnancy is the foetal heart beat. This, however, cannot always be discovered easily, even under normal conditions. Anyone who has listened once or twice to the foetal cardiac sounds will not readily confuse its regular "tic-tac," which is not synchronous with the maternal pulse and so much faster in rate; yet I have known vascular sounds of a fibroid mistaken for the very different foetal sounds. The uterine *souffle* used to be classed amongst the certain signs, but since the recognition of the fact that analogous sounds may be heard in certain vascular fibroids and ovarian tumours, it is not relied on. There is also the so-called placental *souffle*, the presence of which, however, depends on the development of the placenta and the situation of its insertion. It is not always recognised in normal conditions as a distinct sound.

To prove, then, that pregnancy does not exist in a case presenting elements of doubt, we must, after an enema has been given (1) anaesthetise the patient; (2) empty the bladder; (3) palpate, so as to discern if there is a pelvic or pelvi-abdominal tumour, and if so, if it contracts rhythmically; (4) ascertain the size of the uterus, and by careful bimanual examination prove whether the enlargement is due to distension of the uterus, or if this exists with some other swelling; (5) in event of uterine enlargement endeavour to discover the signs of *ballotement*; and, most important of all, (6) should pregnancy of four to five months be possible, listen for uterine and placental *souffle*, and the foetal heart.

Secondary confirmatory signs are enlargement and pigmentation of the breasts, with lacteal secretion, also pigmentation of the vaginal mucous membrane, and the well-known subjective symptoms of morning sickness, dyspepsia, neurotic conditions, and maternal sensations of internal motion. The changes which occur in the cervix might also be regarded as secondary signs, for softening of the cervix or alterations in its shape may be due to chronic inflammatory or atrophic conditions. The only certain sign of normal pregnancy is the recognition of the foetal heartbeat in a normally situated and normally placed uterus.

2. The denial of existing pregnancy is likely to bring more discredit on the family practitioner than almost any other ordinary error of diagnosis. It is one thing to diagnose an early pregnancy accurately in a multipara if complicated by other pelvic swellings, quite another and much simpler thing to be certain of early pregnancy in a nulliparous woman. It

has been pointed out that the sensation of fluctuation in the uterus (from the presence of liquor amnii) is valuable as an early sign. This, however, cannot prove more than that there is intrauterine fluid of some sort. Bimanual examination will demonstrate uterine enlargement, and may further discover the probability or improbability of pregnancy from the tenseness of the organ, and the possible differentiation of a solid body within the uterus which can be displaced on *ballotement*. At a later date, we rely on the stethoscope to verify the other signs. Still we must remember that this, the most valuable of all, has its limitations. We do not hear the heart beat before the fourth to fifth month, seldom hear it in hydramnion, and, of course, not at all if the foetus is dead, or if there is complete cystic degeneration of the chorion. Further, I repeat that, unless the observer has practised listening to the foetal heart, it may be far from easy to discover it even at the fifth month.

Ascites and cystoma complicating pregnancy are likely sources of error, and far from uncommon. It is, perhaps, more often from carelessness than from lack of knowledge that mistakes are made. Still it is easy enough to overlook an early pregnancy which arises in the course of a chronic pelvic disorder.

CASE IV. *Pregnancy in a Retroflected, Incarcerated Uterus: Tubal Disease.*—On May 11th, 1891, I examined a patient, under chloroform, to ascertain the precise nature of some chronic pelvic mischief which seemed to require an operation. The patient, aged 32, had had three children, and had aborted in February, 1890. Retroflexion of the uterus was treated by pessary in March. In April she had vaginitis and shooting pains in the left iliac region. An examination was made on September 15th, the uterus was low, retroflected, the left fornix was filled, a matted lump and a semimobile resistant body were felt on bimanual examination. These were regarded as an enlarged tube and ovary with surrounding perimetritis. The patient complained of constant pain in the left side and downward pressure of the womb. She said she always felt sick after food, but looked stouter and better. On October 20th the previously described condition was confirmed, except that, as the inflammatory matting was much less, the enlarged tube could be much more easily felt. The sound passed 2½ inches, concavity backwards. The patient had difficulty on defecation, with occasional shooting pains in the rectum. The smarting in the vagina had gone.

On May 11th, 1891, an examination was made under chloroform. The uterus lay low in the pelvis, the cervix was displaced downwards and forwards. There was a lump in Douglas's pouch, which seemed to extend over to the left side, but was also beyond the middle line on the right. On bimanual examination the uterus seemed to be retroflected and enlarged. A sound was introduced, the point was felt below the abdominal wall after the sound had passed a normal distance. The swelling occupying the posterior *cul-de-sac* was lifted up, and with some difficulty dislodged upwards; the sound then glided in to fully 4 inches. The uterus was found to be enlarged to quite the size of three months' pregnancy. It was distinct from another swelling in the pelvis to which it was attached; the latter was situated on the left side of the uterus, and felt fully the diameter of two fingers; it occupied the posterior quarter of the pelvis, running up in the direction of the left broad ligament. Beyond the middle line to the right there was a shorter but more rounded lump, which seemed to be a small cyst or inflamed ovary. Pregnancy with retroflected incarcerated uterus and tubal disease on the left side was diagnosed. This patient never imagined that she was pregnant. On the morning of May 16th she aborted; the foetus was of about three months' development.

Another not very rare class of cases is hydramnion with foetal death. I have previously published some cases with remarks referring to this condition. When hydramnion is complicated, not only by foetal death, but by localised peritonitis or pelvic tumour, the diagnosis may be very obscure.

CASE V. *Early Pregnancy: Hydramnion.*—Mrs. W., aged 32, was married at the age of 18; she had had two children, and had had twins stillborn prematurely; there was a history of bad miscarriage in August, 1887, and of severe uterine trouble in 1889; she had had two growths removed from the womb in January, 1889; on the following July she suffered from uterine displacement. I saw this lady in consultation with Dr. Lehané, of Pelham Crescent, on November 11th, 1890, within five days of her return from India. She had been sent home for operation for ovarian tumour. The abdomen seemed rather irregularly enlarged, measuring half an inch more from the umbilicus to the right iliac spine than from the central point to the left spine. There was a rounded, almost centrally situated, soft, elastic, mobile swelling rising out of the pelvis to about half way to the umbilicus; it measured four inches horizontally and about the same vertically. The swelling, if not the uterus, seemed very closely connected with it; but it seemed softer, more elastic, and less tense than a normally pregnant uterus. My colleague agreed that it would be permissible to pass the sound. We felt that the case might be one of abnormal pregnancy. The sound entered three inches readily, and gave me the impression that it would easily have gone further. A provisional diagnosis of probable early abnormal intrauterine pregnancy or of possible parovarian cyst complicating pregnancy was made. I did not see this lady again, but I heard from her medical attendant that the examination caused no subsequent pain or discharge; there was no difference in her symptoms when she left London for the North on November 17th. This patient's condition gave rise to much doubt and anxiety for some time. She was delivered in February, 1891, of a six-months' foetus, and proved to have hydramnion, as had been strongly

suspected by my friend, Dr. Halliday Croom, when he first saw her in December, 1890.

3. *Confusion of one species of pregnancy with another* is less common than confusion of complicated utero-gestation with simple pregnancy or *vice versa*. Some years ago I remember being not a little exercised clinically over an abdominal enlargement which lay markedly to one side and was associated with amenorrhœa and other signs of pregnancy. The patient was unmarried, and for some few weeks no vaginal examination was made. At first I quite thought I had a case of ectopic gestation, but discovered that extremely tight lacing had produced lateral displacement in a normally pregnant primigravida. To illustrate how difficult it is to diagnose a complicated case let me, in conclusion, relate the following case:

CASE VI. *Hydræmia: Decomposed Fetus: Induction of Labour*.—Mrs. D., multipara, aged 27, was seen in consultation with Dr. McCaskie, of Sydney Place. The history was one of amenorrhœa for four months, with pains in the abdomen all the time; these had latterly become very violent, and were referred principally to the right iliac region. Vesical irritation was very great; there was constant desire to micturate, and great pain on micturition. Vomiting was constant and uncontrollable for over a fortnight, during which time Dr. McCaskie had been in constant attendance. On April 13th, 1891, I examined this lady. The abdomen was distended and very tender on palpation; tenderness and swelling were most marked over the right iliac region. Vaginal examination elicited an enlargement of the uterus; the size was considerably greater than would be expected in a four months' pregnancy, and the tension very great. A diagnosis of pregnancy, with some complicating pelvic peritonitis, was made. The patient did not improve; and I again saw her with Dr. McCaskie on April 24th. The sickness was slightly less. The other symptoms continued; pain was very severe. The stethoscope afforded no information. The temperature had risen to 102° F., and the patient looked very ill. On April 27th we had a consultation with Dr. Cullingworth. Dr. Schacht administered ether.

Drs. Cullingworth, McCaskie, and I carefully examined the patient. When the abdominal walls were perfectly relaxed it was evident that the uterus was centrally situated in the abdomen. A sensation of slight uterine contractions was perceptible. The resistance was rather greater over the right iliac region, but on *ballotement* there was clear evidence that the uterus contained a solid body. No fetal cardiac sounds or placental *souffle* could be heard. Pregnancy, probably with hydræmia and pelvic inflammation, was diagnosed. The pulse was over 120; temperature, 103.5°. The induction of premature labour was determined on. I introduced a soft gum elastic catheter within the uterus.

April 28th. Pains supervened at 6.30. I met Dr. McCaskie at 9.30 p.m. We found the temperature still rising, being nearly 104°; pulse 126. Rapid delivery under chloroform was deemed safest. Considerable difficulty was experienced in effecting delivery. The fetus was of nearly five months' development, and was greatly decomposed. The bones of the skull were practically bare, and so soft that the examining finger actually perforated the vault. The placenta was removed entire; there was no hæmorrhage. The uterus was douched with 1,200 perchloride solution.

On April 29th I again saw the patient, who looked very well; the sickness had wholly disappeared, the pulse and temperature were normal. Her convalescence was uninterrupted. A month after the operation I heard of her perfect health.

In the above case there were various unusual and puzzling symptoms. The constant pain and vomiting had reduced the patient's strength to the lowest. When the febrile symptoms came on it seemed that her death was imminent. The fever was evidently more due to septic absorption than to peritonitis; and, taking everything into consideration, I think it likely that the pain on the right side arose from a localised perimetritis associated with salpingitis.

SECTION OF OBSTETRIC MEDICINE AND GYNÆCOLOGY.

W. J. SMYLY, M.D., F.R.C.P.I., President.

Cases Illustrating the Cure of Sterility.—Dr. ARTHUR W. EDIS narrated four cases, apparently most unpromising, in which conception followed systematic treatment. Case I, a woman, aged 36, married thirteen years, sterile; had suffered from menorrhagia for two years. The uterus was found excessively bulky, the sound passing 3½ inches and provoking hæmorrhage. Dilatation was effected by the aid of laminaria tents, and the uterine cavity carefully curetted. A quantity of soft, thickened, villous endometrium was removed, the uterus syringed out with hot iodised water, and iron applied to check further hæmorrhage. Ergot was administered and the patient kept at rest for a time. After an interval of some few months, during which time the catamenia recurred regularly every twenty-eight days, she became pregnant and advanced to full time, being delivered fourteen years and a-half from the date of marriage. In this case curetting the uterus was an important factor, but dilatation of the cervix, abstention from alcohol, and strict attention to the general health, were probably contributory measures of no mean value.

Case II. A delicate anæmic woman, aged 26, married eight years, sterile. The uterus was small, anteflexed, mobile, the cervix granular and giving exit to thick mucus, showing the presence of endocervicitis. Passage of the uterine sound caused pain at the angle of flexion similar to that experienced at the time of the periods. A chalybeate tonic was prescribed, the hot douche morning and evening, and glycerine tampons at night. Graduated bougies were employed, and occasional applications of iodised phenol. The endocervicitis proving intractable a laminaria tent was passed shortly after a period. Iodised phenol was then applied freely to the canal, a glycerine tampon inserted, and the patient kept in bed for several days. The vaginal douche was continued with an injection of borax. The periods became more regular and less painful, and the cervical discharge diminished in quantity. After the lapse of three months, as no conception occurred, a vulcanite stem was inserted, but removed on account of an attack of catarrhal jaundice. Some months later it was re-inserted. The patient overexerted herself on one occasion at the time of a period, got a severe chill, and had a retrouterine hæmatocele and profuse menorrhagia. The stem was at once removed and no further local treatment adopted for another six months, when she had perfectly recovered from the hæmatocele. A few applications of iodised phenol were made to the cervical canal, and later on a vulcanite stem was re-inserted, and the recumbent position being enforced during the periods. The stem was worn for about two months and then removed. A few further applications were made from time to time. Several months later she became pregnant.

Case III. A woman, aged 32, married four years, sterile. She suffered much pain in both iliac regions on standing or walking. Vaginismus was very marked. Chloroform was administered, and the hymen was found to be perfectly intact, very dense, and with only a small central perforation barely sufficient to admit the uterine sound. Having slightly incised the hymen in a stellate form a trivalve speculum was gradually inserted, and the aperture enlarged. A medium sized Fergusson's speculum was then inserted so as to ensure thorough dilatation. The uterus was found to be retroverted, moderate sized, the cervix conical, and the os uteri pin-hole. Conception not occurring, an elastic ring pessary was inserted after replacing the uterus, and the general health attended to. As conception did not occur within the next few months the cervix was divided by means of Küchenmeister's scissors, two incisions about half an inch apart being made in the posterior wall so as to ensure a more or less triangular shape of the os when the intervening segment became atrophied. Later on, graduated bougies were employed to dilate the upper portion of the cervical canal, and an occasional application of iodised phenol resorted to. The vaginal douche was persevered with, and the general health cared for, the ring being worn for over a twelvemonth. Her general condition improved very materially. Conception occurred shortly after she was last seen, and she was safely delivered. Some might think the treatment heroic, but it was progressive, one barrier being removed, and time allowed to elapse before resorting to further interference, until it could be seen whether sufficient had been done. Case IV: A woman, aged 33, married two years, sterile. She complained of severe attacks of vomiting which commenced six years previously; could keep absolutely nothing on her stomach. They were always aggravated at the times of her period. The uterus was retroverted, mobile, the cervix conical, with a pin-hole os. The cervix was divided with Küchenmeister's scissors, a vulcanite stem pessary passed, and a ring inserted, to keep the uterus in a normal position. After removal of the stem, some few applications of iodised phenol to the cervical canal were from time to time resorted to, the vaginal douche regularly employed, and the general health attended to. After the operation, the patient went for several months without any return of the sickness, and her general health improved very materially. Shortly after treatment was discontinued she became pregnant, and was safely delivered in due course. According to statistics, only 7 per cent. of the fertile bore first children after three years of marriage. It was fair, therefore, to conclude that pregnancy in this case was *propter hoc* and not *post hoc*.—Dr. AUST-LAWRENCE laid great stress on general treatment as well as local, mentioning as causes of sterility fatness and alcoholism. In cases of narrow os and endometritis the best

treatment was the intrauterine use of the negative pole of a continuous current battery. A large number of cases of supposed sterility were really instances of early abortion frequently repeated.—Dr. ROBERT BELL felt pretty confident that endometritis was the chief factor in producing sterility. In very young women with pin-hole os pregnancy frequently occurred. If, however, the dysmenorrhœa that resulted from this stenotic condition was of long standing then endometritis of the corpus uteri was set up and sterility supervened as a natural consequence. Versions and flexions acted in a similar manner by inducing endometritis. The direct cause in these cases was the acrid discharge secreted by the unhealthy endometrium, which destroyed the spermatozoa. If impregnation did take place, then the unhealthy condition of the endometrium induced abortion at a very early stage.—Mr. J. W. DRAPER drew attention to Dr. Dumontpallier's treatment of endometritis by the insertion of sticks of a paste consisting of chloride of zinc 1 part, *farine de seigle* 2 parts. Large sticks, about 7 inches long, weighed 4 grammes, medium sticks 2 g., small sticks 1.5 g. A stick was inserted into the uterus and allowed to remain. The patient was kept in bed from seven to twenty days. A cast of the interior of the uterus was discharged in from five to ten days. Ninety-three per cent., or 860 cases, were cured. Stenosis was very rare; it might be necessary to pass a sound two or three times in some cases.—Dr. CORDES (Geneva) observed that Dr. Dumontpallier's treatment, although very good as far as the endometritis was concerned, had the inconvenience of contracting or even occluding the cervix, unless the physician passed a sound some days after the cast of the uterus had been expelled. Dr. Cordes had seen cases in which the os was not even permeable by the sound.—Surgeon-Major R. PRINGLE, M.D., said that the possibility of sterility in the husband must be remembered. Frequent abortion in the early period of pregnancy (before the third month) was not infrequently the cause of supposed sterility.—The PRESIDENT thought it most important to remember that sterility was a symptom and not a disease. It might be the fault of the husband, but if disease were detected that should be treated, not the symptom.—Dr. EDIS, in reply, agreed thoroughly with Dr. Smyly's remarks, that sterility was not a disease, only a symptom. It was important to remember that the condition of the general health played an important part in many cases. Each case should be treated on its merits, a very careful diagnosis, excluding ovarian or tubal mischief, being essential in all instances.

Epithelioma Treated by Electricity.—Dr. J. INGLIS PARSONS related the case of a married woman, aged 52, who came under his care in December, 1890, with a recurrent epithelioma on the perineum. In July, 1889, Mr. Jonathan Hutchinson pronounced the disease to be epithelioma. In the same month the growth, which was situated at the lower angle of the vulva, was removed with the knife. This was examined microscopically by Mr. Shattock and found to be malignant. In January, 1890, pain was felt in the groins, and some enlarged glands were excised. In June, 1890, some soreness of the perineum was felt, and in December, 1890, Dr. Cullingworth stated that there was a return of the disease. On December 17th, 1890, the lower half of the perineum was occupied by a small ulcerated epithelioma about 1½ inch in diameter, which extended into and involved the anus; its edges were raised and thickened. On December 21st, 1890, with the assistance of Dr. R. T. P. Collins, the alternating current was applied to the ulcer and the tissues round for some inches, with an intensity of from 400 to 600 milliamperes. She took ether well, and the pulse and breathing were not in the least affected by the electricity. As no glands could be felt in the groin that part was not touched. The patient was able to get up the next day. In the course of a few weeks the growth separated and the healthy tissues granulated up. In March, 1891, the part had quite healed. On July 6th, 1891, there was no sign of recurrence in the perineum. One of the glands in the right groin was enlarged.—Dr. Edis thought that electricity offered a reasonable hope of cure in some cases of malignant disease. It did not seem to be of universal application, but had unquestionably been of service in arresting the growth of malignant disease in some instances which Dr. Edis had seen under Dr. Parsons's care.

—Dr. INGLIS PARSONS, in reply, said that the treatment was most suitable for cases of recurrence taken at an early stage, where a further operation by the knife was unsuitable. In order to minimise the risk he was accustomed to begin with a very weak current and gradually increase it. If the pulse or breathing were interfered with he stopped the current. Between each interruption the operator should wait a few seconds and feel the pulse. But this was only necessary when the growth was in close proximity to the heart or to some of the cranial nerves.

The Diagnosis of Spurious and Doubtful Pregnancy.—Dr. LEITH NAPIER read the paper which is published at page 988. Dr. ROBERT HARVEY mentioned a case in which the foetal heart sounds and so-called placental *souffle* were relied on to prove a diagnosis of placenta prævia, yet the patient was not pregnant. The heart sounds heard were those of the mother, who had a temperature of 104° and a pulse rate of 140. The placental *souffle* was the uterine *bruit* in a bleeding myoma.—Dr. J. G. SWAYNE related a case in which the rapid beat of the maternal heart was conducted to his ear by an enlarged spleen. The patient had lived in the tropics, was married eight years, and very anxious to have children. It impressed on his mind the necessity of always placing the finger on the mother's pulse when listening for a foetal heart.—Dr. JAMES MURPHY described several cases of spurious pregnancy, one in which connection had not taken place, and another in which a woman who had already given birth to eighteen children was deceived by flatulence. Those cases seldom went on to mimic labour; he had only seen three such cases.—Surgeon-Major R. PRINGLE, M.D., said that in a case in which he was consulted, where doubt seemed to hang over everything, as to whether there was pregnancy or not, and further, whether the foetus was living or dead, he had recalled a remark of Sir J. Simpson when at the Maternity Hospital in Edinburgh: "If you can get the mother," he said, "to be sure of foetal movements, you may leave the rest to time." In this case Dr. Pringle placed one hand in hot and the other in cold water, and then unexpectedly applied them alternately over the uterus; the mother started back in bed on one of these occasions, and said: "I felt the child move." She was then satisfied the child was alive, and all ended well. The foetal heart sounds could not be depended on in this case.—Dr. LEITH NAPIER, in reply, said that he had mentioned "active movements" as an important secondary sign, but that it must be remembered that these active movements were uterine and not foetal. In hydramnion it was very difficult to differentiate between the head and breech. *Ballotement* afforded the sign of a solid body floating in fluid. It was sometimes well to check the maternal pulse, not by feeling the radial, but the carotid artery, as the knowledge that her pulse was being felt might increase its rate and render it irregular. After all, the one certain sign of normal pregnancy was the foetal heart sound.

Treatment of Chronic Disease of Uterine Adnexa.—Dr. ROBERT BELL read a paper on the chronic diseases of the uterine adnexa amenable to medical treatment. Neither the ovaries nor tubes were prone to disease arising independently of the uterus. If, then, the origin of the mischief were in the uterus, it was only rational to direct special attention to it. Cervical disease seemed to be most potent in starting disease in the ovaries. If the cervix were lacerated, no treatment would be of any service until this was attended to. If endometritis were present the endometrium should be curetted and afterwards treated by the weekly or bi-weekly application of iodised phenol and vaginal tampons soaked in glycerine of alum and boracic acid. In many cases it was advisable to dip the uterine end of the tampon in a 10 per cent. solution of ichthyol in glycerine, which tended to promote absorption of inflammatory thickening. Strict attention ought to be given to the bowel, to the avoidance of over-fatigue, to comfortable clothing, and good food. The theory that the ovaries were secondarily affected through the channel of the lymphatics, which he had put forward two years earlier, had been confirmed by Poirier, who had shown that there were two sets of uterine lymphatics—the one surrounded the cervix and extended laterally into the parametric tissues along the lower borders of the broad ligaments, the other followed the course of the ovarian artery along the upper

margins of the broad ligaments, and took origin in a network surrounding the corpus uteri. The efferents of the latter consisted of two or three large vessels lying between the tube and ovary, receiving numerous branches from these. As valves were comparatively few in these vessels, retrograde infection was not only possible but probable. By these networks of lymphatics septic mischief was conveyed to the pelvic cavity, whereas salpingitis was invariably the result of extension of the disease along the mucous membrane of the tubes, the lymphatics of the uterus and those of the tubes not being intimately connected. Poirier had supported this assertion by pointing to the fact that the lumbar glands were never affected in tubal inflammation. On the other hand, the ovarian and uterine lymphatic systems had direct communication with each other, so that ovarian disease could readily be consequent upon endometritis without the tube being in any way concerned.

Native Obstetric Operations in India.—Surgeon-Major ROBERT PRINGLE, M.D., M.A.O.Edin., said that the condition of the native women in India differed very much in the three Presidencies; in Madras seclusion, as seen in Bengal, was unknown; their position in Bombay seemed midway between these two extremes. For years the residents of Madras had enjoyed to the full the benefits of a lying-in hospital; Bombay, thanks to the aid of the Parsees, was not far behind Madras; but in Bengal, if Calcutta were excepted, medical treatment of native women had been unknown till very lately; when the lying-in hospital at Agra was opened, the only individual who entered the zenana for the purpose of professionally (if such it could be called) treating the inmates was the *janai dhai*, or midwife of India. These women were of a distinct and separate class or caste. The qualifications of the art were held to be hereditary. It had been estimated that 30 to 40 per cent. of women treated by them succumbed within the first fortnight after childbirth. The medical treatment of the zenana women was carried on by the family *hukeem*, or native doctor, who prescribed for symptoms reported to him, either by male representatives of the family, or the *dhai*. The *hukeem* might feel a pulse or see a tongue through a curtain, but no more. The surgical treatment was a blank. The Zenana Bible and Medical Mission employed only fully qualified ladies. In Lucknow its hospital had won its way into the confidence of the natives, until the work had far exceeded the capacity of the present building; and another hospital to the memory of the friend of the women, not only of this country, but also of her sisters in India—the late Dowager Lady Kinnaird—would soon be completed. The early work of the present Lucknow Female Hospital and similar ones in the Bengal Presidency at a distance from Calcutta had led to the scheme known as the Countess of Dufferin's Association for Supplying Medical Aid to the Women of India, by exhibiting the possibilities of the work when undertaken on proper lines.—Brigade-Surgeon HARVEY, M.D., said that as superintendent of the Eden Hospital, Calcutta, he had had ample opportunity of confirming Dr. Pringle's statements. Exaggeration of the horrors of an Indian lying-in room was impossible. He had himself operated for vesico-vaginal fistula in a woman (?) of 11. He had seen a little girl of 10 with her pelvis blocked by inflammatory exudation due to gonorrhoea communicated by her husband. In one week at the Eden Hospital he had seen two women brought in with the heads of children whose bodies had been torn away left *in utero*, one case of transverse presentation with the arm torn off, and the child's chest opened by the fingers of the midwife; another in which, after four days' labour, the uterus was so moulded on the child that turning was rendered most difficult. Nearly twenty years ago he had placed on record two cases of child-wives killed on their wedding nights which were dismissed by the police as examples of legitimate intercourse, and had officially described them as "examples of the legalised rape, for it is nothing else, so common in India as a result of infant marriage." A brighter day was in store, he hoped, for Indian women, mainly due to the noble efforts of Lady Dufferin. It was a mistake to suppose that these outrages would be abolished by the Age of Consent Bill. They would still go on in the seclusion of the zenana, and the only effect of the Bill would be a moral effect; it would strengthen the hands of the few enlightened men who wished to protect these girls.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A CASE OF HIP DISEASE AND BACK SORE IN WHICH THE PRINCIPLE OF THE ELLIPSE WAS APPLIED TO A LONG OUTSIDE SPLINT.

THE patient was a lady, aged 54, and had suffered for about 2½ years with hip disease, terminating in abscess which required incision and drainage. She was very thin, and had profuse hæmoptysis on three occasions, from a tuberculous lung, during the time I attended her. The discharge from the thigh, which was very copious, soaked down in spite of all care between the water pillow and her back. The result was an extensive back sore which necessitated frequent turning of the patient, and caused severe pain by disturbing the limb. I suggested to Mr. Ernst, of Charlotte Street, Fitzroy Square, who carried out the suggestion extremely well, that he should make an iron ellipse, 9½ inches in its long diameter, 9 inches in the short diameter, with a bent bar of the shape shown in the woodcut rivetted at one end to the extremity of the long diameter of the ellipse, the other end of the bar to fit into a socket of an iron splint moulded to the shape of the limb. The splint was fitted with a flexible metal support or trough, embracing about two-thirds of the circumference of the leg and a similar support for the thigh; the upper extremity of the splint was fitted and fixed by thumb screws to a metal girdle partly encircling the waist.

The three portions embracing the trunk, thigh, and leg were well padded, and when buckled firmly to the splint, maintained the limb in complete apposition to the splint when the patient was rolled over on her right side; the foot and leg following the rotation of the ellipse as shown by the woodcut.

The comfort and convenience afforded by the splint and the ellipse allowed of the necessary attendance to the back, which soon healed, and the patient was able to lie on her side without disturbance of the affected limb. She wore the splint for many months, up to the time of her death, which took place from exhaustion. The three portions of the splint, the waistband, outside bar, and ellipse, were made in separate pieces for convenience of appliance and removal. Mr. Howard Marsh, who kindly saw the patient with me on several occasions, writes: "I think your splint quite worth describing; it was very useful in the late case." I have hitherto never met with any appliance which allows of rotation of a limb when placed on a long splint, and I believe in cases of intracapsular fracture of the neck of the thigh bone, in hip disease, and perhaps in fracture of the thigh, the proper adaptation of an ellipse such as I have described, by allowing the patient to change the position, may be of great comfort. The position of the ellipse need not interfere with extension by weight and pulley, which can be easily adapted.

WILLOUGHBY FURNER, F.R.C.S., M.D. Durh.
Brighton.