patients, although they had no real paralysis, had not the power of continuing long in action—there was certainly a diminution of nerve-force in them. This has been noticed by the celebrated surgeon Larrey in a case in which part of the brain had been carried off in a military man, in whom the mental power had remained pretty good, but could not be employed for a very long time. There seems to be, therefore, a clear use of a great part of the nerve-tissue in the brain in producing nerve-force. There may be also something else; and I will conclude by this, regretting that I have no time to develop the subject. I have had, in several instances, to deliver lectures on what Professor Carpenter has called unconscious cerebration. I have tried to show that there is a power of the nervous system, whatever it may be, which is of a mental order; that is, it has psychological attributes, psychological faculties, mental faculties as our ordinary mind; but it is by far, infinitely I should say, superior to our ordinary mental power. It is that other power which makes discoveries, and not our common power. The discoveries come like a flash to us, just as a tune or a piece of poetry will come to a composer or a poet. There are experiments which certainly show that that mental power makes use of our senses much better than we can—appreciates distances much better than our mind does. There is, therefore, a power besides our own mental power which must be located somewhere. It is very likely that the brain is its location. I would not say that it is located in one part more than in another; in fact, I cannot but believe that it is located in cells and diffused, as cells having special functions are, according to my view, in the brain, but certainly as functions belonging to that kind of power. It would be a most interesting point to ascertain, in men of eminence who have the misfortune to be attacked with disease of the brain, if they lose that power of discovery, that power of policy, that power of composing, that in health they possessed. If so, it would show that a good part of the brain possesses that power through the few fibres of which I have spoken, as being essential for communication between the brain and the body. I cannot conceive that anything else but something like telegraphic messages are sent; and that, of course, implies that in the spinal cord there are other powers of a mental order also, quite inferior of course, and having no spontaneity, but able to receive, to understand a message, and to execute what it states.

I am very sorry to have indulged in these few hypotheses, as I have no time to dwell at length upon them; and it remains for me to thank the President for his kindness in permitting me to deliver this course of lectures, and to thank the gentlemen who have been so kind as to honour me with their presence.

OVARIAN DROPSY: SOME POINTS IN ITS PATHOLOGY AND TREATMENT.

By PROTHIEROE SMITH, M.D.,
Physician to the Hospital for Women, London.

IN bringing the subject of ovarian disease and ovariectomy before the Association, I am not so much actuated by the desire to express my own opinion as to invite discussion, in order to determine what is the most eligible mode of dealing with a malady which has become of frequent occurrence, and which, without the aid of operative assistance, almost invariably proves fatal in its issue. To accomplish my purpose satisfactorily, I shall divide the matter of which I am about to treat into three parts or inquiries; and the replies to these inquiries will, I hope, elicit such remarks from others as shall greatly enrich, if not exhaust, our subject.

The three heads or questions alluded to are:

1. Can any reliable prophylactic means be devised to lessen the frequency of ovarian disease by obviating *in limine* its cause?
2. What is the best manner of preparing patients for ovariectomy, and of performing the operation with a view to success?
3. What treatment after the operation is best calculated to ensure the recovery of the patient?

1. Can any reliable prophylactic means be devised to lessen the frequency of ovarian disease by obviating *in limine* its cause?

During a period of thirteen years, commencing in 1836, whilst engaged there as assistant obstetric physician with the late Dr. Rigby, the result of my observation of the out-patients of St. Bartholomew's Hospital in comparison with those seen subsequently at the Hospital for Women, leads me to the impression that ovarian dropsy has, during the last thirty years, increased in frequency. If such be the case, it would suggest the importance of inquiry into the possible causes of this increase. First, assuming that the ovaries usually become diseased in consequence of a morbid procreative effort—of which the subjects of it

may be and generally are entirely ignorant—we should naturally expect that these maladies would be most frequent during that period of life which is allotted to menstruation and utero-gestation; and, as a rule, such is the case. As I have before elsewhere observed, there are certain developmental stages in our existence when organs receive additional force to perfect that which was incomplete at first—as in dentition, at the termination of the first seven years; and, in puberty, at the end of the second seven years, etc.

From this time of life, in accordance with the unerring wisdom of an all-wise Creator, there is imparted to woman an additional nutritive power for the purposes of procreation. This is shown by a state of hyperæmia; and, if this be not employed according to the divine law, "increase and multiply", or by the counteracting vital expenditure at menstruation, she, at times, realises the curse pronounced against her at the fall, viz., "I will greatly multiply thy sorrow and thy conception". Whilst, however, the laws of God and man necessarily limit marriage life, it follows that this restriction, when menstruation is faulty, may lead to uterine and ovarian engorgement, and so explain the origin at times of ovarian and uterine disease.

This predisposition to disease may be recognised by the flushed countenance, with dysmenorrhœa, and other disorders of menstruation, and a full bursting sensation, with hysterical affections, mental disturbances, contracted and incompressible pulse, and sound, as the twang of a tense string, accompanying the heart's action, and a heightened temperature. Such conditions I often saw, in my early professional career, treated by venesection; a remedy which appeared almost invariably to relieve the patient at once of her distress. At this time, forty years ago, when I was resident in Devonshire, ovarian disease was there very rarely seen; but since bleeding has gone out of fashion, whether *post hoc* or *propter hoc*, the malady has apparently become more frequent. With a view to confirm the idea that the frequency of ovarian and uterine disease might, during the procreative period of life, to a certain extent depend on undue or excessive nutrition, insufficient menstruation or sterility, and the general neglect of bleeding as a remedy, I have in vain sought for statistics at a time—half a century ago—when the lancet was more commonly employed, in order to compare the relative frequency of ovarian disease then with what now obtains. Failing this, I sought for information in a country in which bleeding is still often employed; and the result of such investigation has been to confirm me in the belief that, by judicious dietetic restrictions and cautious use of the lancet, many cases of ovarian disease might be at times prevented, by removing that condition of hyperæmia which, if not relieved naturally by menstruation or utero-gestation, tends to mischief in those organs for whose special use it had been supplied.

I should not find time now to give in full my correspondence with Dr. Saucher, Marquis de Foca, of Madrid; but, in reply to my inquiry, whether he could supply me with any facts, statistical or otherwise, to show whether, as venesection is still commonly practised in Spain, and had been virtually abolished in England during the last half century, the instances of ovarian disease were less numerous in Spain than with us, he states: "Venesection is frequently employed in Spain, especially in hot climates and in the south provinces"; and again, after speaking of the predisposing causes of ovarian disease, and generally tracing them to hyperæmia, hypertrophia, or hypersthenia, he says, "ovarian cysts are very rare among us comparatively with England".

Although I admit that the opinion herein expressed offers insufficient grounds to allow any definite conclusion, still I hope I may have advanced enough to warrant the anticipation that others, with more time and ability, may be led by my remarks to obtain more conclusive evidence as to the cause of the frequent occurrence of ovarian disease. I pass on now to my second inquiry.

2. What is the best manner of preparing patients for ovariectomy, and of performing the operation with a view to success?

It is desirable, when not contraindicated by extreme weakness, that, for some time previous to the operation, the patient should abstain from animal food and stimulants, and be kept quiet; and, if possible, in bed, attention being paid to the state of the bowels, the character of the urine, and the temperature of the body. Should slight attacks of circumscribed peritonitis occur during the development of the cyst, it may be enough only to apply leeches and hot poultices to the abdomen, and to prescribe a light diet without stimulants. As a rule, advanced cystic and other diseases of the ovary, requiring operative treatment, are accompanied more or less with inflammation, partial or general, of the peritoneum, proper to the cyst itself, or covering adjacent organs. The pathognomonic signs of this condition are often indistinct; but where, in addition to abdominal pain, there exist crimson lips, and a hard though small and very incompressible pulse, so that no pressure above by an assistant obliterates the radial pulsation, venesection will

generally relieve this state, and show by the buffed and cupped character of the blood, if drawn *pleno vivo*, and by the excessive proportion of firm crassamentum in comparison with the serum, an element of mischief which, in the prospect of ovariectomy, it is most desirable to remove. It has been, therefore, my custom of late to employ phlebotomy before operating; either to take a small quantity for the purpose of testing the quality of the blood, or the existence of inflammatory action; or, when the pulse and other symptoms demand it, a larger quantity (from 8 to 18 ounces or more), occasionally repeating it, or otherwise applying leeches to the seat of pain, to the anus, or to the uterus. By reducing the patient in this way, as well as dietetically, to a condition opposed to that which predisposes to inflammation, hæmorrhage, and serous exudation, she is so prepared that she is more likely to escape from any unfavourable consequences after operation; and the result of such practice has justified the means employed.

As to the operation, the best manner of performing it after taking the above-named precautions is, I believe, to make as small an abdominal section as is consistent with the easy abstraction of the emptied cyst or cysts—to pass the hand within the primary cyst, and break down any secondary ones, evacuating their fluid contents thus, through one aperture—very gradually withdrawing the diseased mass by traction, and peeling off any bands of connecting lymph, adhering to the sac, as close to it as possible. Considerable time and care should be given to this, and to securing and stopping bleeding vessels. The pedicle, if long, is best treated with a clamp; if of moderate length, by actual cautery; but, if the cyst be close to the uterus, by ligatures.

After carefully mopping out ascitic and other fluids and coagula from the abdomen and pelvis, the wound should be closed with silk sutures at about half an inch apart, and the wound dressed simply with a small piece of lint squeezed out of carbolic oil. Over this should be placed a cloth and a compress of cotton-wool, firmly held in place by long strips of ordinary strapping and flannel bandage.

I must apologise for entering into these ordinary details; but I have known ovariectomy to fail from want of their adoption.

3. What treatment after the operation is best calculated to ensure the recovery of the patient? Amongst the causes of death after operation may be enumerated, according to the frequency of their occurrence, peritonitis and serous and sanguineous exudations, followed by so-called septicæmia or pyæmia; as also effusions into the pleural cavities (by no means an uncommon accident in ovarian dropsy), and those of the brain; whilst the frequent occurrence of hæmoptysis, hæmatemesis, albuminuria, hæmaturia, and the undue occurrence of menstrual discharge, show a tendency to relieve the surcharged vascular system; and the sudden withdrawal of the cyst, preventing that serous drain into it after the operation which beforehand the custom of months, and sometimes of years, had made second nature, sufficiently explains this tendency.

Regarding the disease as an effort to relieve the hyperæmia of the ovarian organs, it would naturally follow that vicarious efforts by means of other organs would be made after the customary reservoir had been summarily removed by ovariectomy. To meet this habit of depletion, thus established, and to prevent the injurious consequences just named, I have usually, of late, not only prepared my patients by abstinence from animal food and stimulants, and by venesection, before the operation; but afterwards I have endeavoured to cut off all occasions of distress to the wounded parts which might ensue from disorder and flatulent distension of the stomach and bowels. This is done by keeping these organs absolutely at rest; that is, by entirely avoiding any act of digestion and assimilation, by which means excessive peristaltic action of these viscera and tympanites are avoided for the first five or eight days after the operation. To satisfy the cravings for food and drink, it is enough to administer at first only distilled water sweetened with glycerine in teaspoonfuls, or to give small pieces of ice; whilst life is sustained, and the nervous system tranquillised, by the repeated use of morphia hypodermically, or by the anus—watching temperature, tongue, and pulse, etc., for the time when more support will be indicated.

As peritonitis and sanguineous exudations in the abdomen and pelvis, in the cavities of the brain and pleura (apt to be mistaken at times for septicæmia or pyæmia), are amongst the most frequent of the unfavourable sequels of ovariectomy, when such an attack is threatened by rigors, a rapid increase of temperature, tympanites, and pain, with a wiry, hard, incompressible pulse, and dry hot skin, one or two bold bleedings will often cut it short. This course I adopted in my second case of ovariectomy in 1848, in which peritonitis appeared fifty-five hours after the operation, when the patient was bled to ten ounces. She made a good recovery, and is still alive and well. With a view to relieve brain-symptoms and to reduce temperature, bladders of powdered ice and salt to the head and face, and cold sponging with vinegar and

water to the extremities, are of great use. Dr. Day has recently proposed an ingenious mode of employing cold to the head by means of a double cap and flowing iced water, which has, I understand, been employed with good results by Mr. Spencer Wells. Observing the frequent recurrence of menstrual discharge immediately following the operation, when the catamenia are not present, and the symptoms are not sufficiently grave to demand venesection, I have seen leeches, applied *per speculum* to the uterus, produce the greatest relief by reducing the temperature and the frequency of the pulse.

Whilst, however, advocating the use of the lancet, I do not wish to overlook the importance of the greatest possible vigilance for the moment, when such treatment may not only be contraindicated, but the judicious use of ammonia, brandy, and champagne, may become as urgently required.

Time restricts me to this mere outline of a subject too extensive and important to allow of anything more in so short a paper. It only remains for me, in illustration, to say that since November 1874, when our hospital was reopened, having invariably pursued this course, I have operated on four cases at the Hospital for Women, and they have all made satisfactory recoveries, although some of them had serious complications, as seen in the following summary.

CASE I.—Elizabeth W., aged 27, married, was admitted into hospital December 1st, 1874. The pulse was small, wiry, and incompressible; and the lips deep red.—December 8th. Six leeches were applied to the abdomen.—December 10th. She was bled to 1½ ounces (crassamentum=1 ounce; serum=½ ounce).—December 17th. She was bled to 3½ ounces. The pulse was rendered softer and fuller, and more compressible.—December 31st. Four leeches were applied to the abdomen.—On January 2nd, 1875, ovariectomy was performed. A great number of adhesions were found, which were broken down. The tumour extended high up into the chest on the right side, and was adherent to the diaphragm, omentum, and abdominal walls. There was free hæmorrhage from the place of the adhesions, which was stopped after some considerable time by pressure and cold sponges. The peritoneum of the abdominal wall was found inflamed. The cyst was multilocular. At 10.48 P.M., she was bled to 4½ ounces (crassamentum=2 ounces; serum=2½ ounces). Thin pedicle, of moderate length; clamp.—January 3rd. She was bled to 3 ounces (crassamentum=2 ounces; serum=1 ounce).—On February 6th, she was discharged cured.—[This patient has since given birth to a healthy child, and is herself very well.]

CASE II.—Ann W., aged 42, married fourteen years, was admitted on January 21st, 1875. Before she was admitted, she had been tapped in August 1874, when 32 pints of dark fluid were drawn off; and again in November, when 28 pints were removed. She came in complaining of abdominal pain. There was a history of phthisis in the family. The chest was sound; no evidence of tubercle. The lips were deep crimson. The pulse was hard, small, and incompressible.—January 23rd. She was bled to 15 ounces.—February 4th. The operation was performed. There were adhesions of the cyst to the abdominal wall, and a multitude of secondary cysts. There were 25 pints of fluid. The abdomen was sponged out. There were a considerable number of adhesions to the omentum and intestines. The pedicle, which was short, was clamped. After the operation, the patient suffered from sickness, abdominal pain and distension, with pulse 40 and temperature 103 on the fifth day. On February 10th, at 9.30 A.M., the clamp was removed on account of its dragging on the pedicle. Before doing so, I transixed the charred edges of the pedicle with two wire and one silk ligature, and allowed it to drop into the abdomen. I pumped out of the abdomen 10 ounces of bloody serum, with relief to the symptoms; and the wound was brought together by plaster. At 12.30, three leeches were applied to the cervix uteri; a fair quantity of bleeding followed. At 4 P.M., she was bled to 2½ ounces (crassamentum=2 ounces; serum=½ ounce). On February 11th, the wound was again opened, and the abdomen syringed out with distilled water and Condy's fluid; a quantity of serum having been previously pumped out of the abdomen and pelvis. On March 16th, she was discharged cured.

CASE III.—Eliz. B., aged 34, married eleven years, was admitted March 27th, 1875, complaining of pain in the back, slight dyspnoea, and frequent micturition. She had deep-coloured lips, and a hard, wiry, incompressible pulse; temperature 102. On April 1st, she was bled to 13 ounces (crassamentum=8 ounces; serum=5 ounces). On the 8th, six leeches were applied to the abdomen.—April 17th. The expectoration was pneumonic.—On the 23rd, six leeches were again applied.—April 27th. Four leeches were applied to the os uteri.—On April 29th, ovariectomy was performed. There were no adhesions. The pedicle, very thick and broad, was clamped.—On May 6th, there was hæmorrhage from the pedicle, which was stopped by the application of

ice. The patient had no food for eight days, except glycerine, brandy, and distilled water. On May 26th, she was discharged cured.

CASE IV.—Mary W., aged 21, single, a servant, was admitted April 30th, 1875. On May 28th, she complained of severe pain in the left side. On the 31st, five leeches to the abdomen gave great relief. On June 6th, twelve leeches were applied to the seat of pain. On June 17th, the operation was performed. The cyst was multilocular, and extending into the right hypochondriac region. There was slight hæmorrhage. There were adhesions of the peritoneum to the cyst anteriorly, but none to the other neighbouring organs. The abdomen was carefully sponged out. The clamp was applied. During the first forty-eight hours after the operation, the patient took nothing but small quantities of tepid water (24 ounces in all). The urine contained albumen and lithates; these disappeared on the 19th. The amount of nourishment taken between 11 A.M. on the 19th and 11 A.M. on the 20th was, glycerine, 5 drachms and 5 minims; brandy, 7 drachms; water, 23 drachms; with 40 minims of aromatic spirits of ammonia. The nourishment taken during twenty-four hours between 11 A.M. of the 20th and 11 A.M. of the 21st consisted of glycerine, 1 ounce, 1 drachm, 25 minims; brandy, 1 ounce, 1 drachm, 40 minims; water, 20 drachms.

ON DISLOCATIONS OF THE ELBOW-JOINT AND FRACTURES OF THE LOWER END OF THE RADIUS.*

By ALEX. OGSTON, M.D.,

Surgeon to the Aberdeen Royal Infirmary, etc.

THE preparation of compound dislocation of the elbow-joint and injury to the lower extremity of the radius, which I have the honour of showing you, has the following history.

A. B., a boy, aged twelve, was climbing a cherry-tree in the country, about ten miles from Aberdeen, on August 10th, 1875. He fell to the ground, and received a compound luxation of the right elbow-joint. He could give no account of the position of the arm at the time of the fall. He was seen by Dr. Fiddes of Aberdeen, who sent him into the Aberdeen Infirmary. Dr. Kerr being ill, I saw the boy for him, two hours after the receipt of the injury. There was no swelling of the arm. The lower end of the right humerus protruded completely through a lacerated wound on the front of the elbow, and could not be reduced. On inserting a finger into the cavity of the elbow-joint, the epitrochlea and epicondyle could be felt separated from the humerus, and lying in their proper position in relation to the radius and ulna. The pits from which they had been torn could be seen in the protruded humerus. The posterior surface of the protruded humerus was stripped of its periosteum for two inches up. There was almost no hæmorrhage.

The wrist of the same arm exhibited signs of fracture of the radius above the wrist-joint. The fracture could be reduced, and its signs made to disappear temporarily. When this was done, the deformity did not tend to reappear unless the arm was lifted by the hand. It was observed, however, that bony crepitus could not be elicited, and that the styloid process of the radius did not present the displacement upwards, which is observable in cases of Colles' fracture. It was, on the contrary, in its normal position, of a quarter of an inch lower than the styloid process of the ulna, instead of being shortened so as to be on the same level.

The arm was amputated above the lower fourth of the humerus.

The subsequent dissection of the extremity showed the following peculiarities. The wound through which the humerus projected was found to be transverse in direction, with lacerated margins, and to involve the skin, superficial fascia, and deep fascia. It was smaller than the circumference of the protruded part of the humerus, and embraced it so tightly as to preclude reduction. The subcutaneous veins of the forearm were uninjured; the humerus having protruded above the fork formed by the median vein, dividing into the median-basilic and median-cephalic veins. The cutaneous nerves of the forearm had also escaped injury; the nerves of Wrisberg and the cutaneous branches of the internal cutaneous passing on the inner, and the cutaneous branch of the musculo-cutaneous on the outer side of the wound. The tendon of the biceps muscle lay in the outer side of the wound, but the slip which it sends off to the deep fascia of the forearm was torn through. The brachial artery lay in the wound against the inner side of the protruded humerus; it was quite exposed, but not denuded of its sheath. Still more inwardly lay the uninjured median nerve. The brachialis

anticus muscle was almost wholly torn through; for the lower end of the humerus had perforated it, giving rise to a large hole through its middle, a bundle of the lateral fibres, of the size of the little finger, passing down on each side of the shaft to the insertion of the muscle, and thus forming a muscular collar embracing the bone, which of itself would have been sufficient to have prevented replacement. A slight extravasation of blood existed in the hollow of the elbow in front of the torn lower end of the brachialis anticus. The fleshy origin of the pronator radii teres from the humerus above the internal condyle was torn through. The epitrochlea was detached through its epiphysal cartilage, and a shell of bone from the humerus, corresponding to the common attachment of the flexor muscles of the forearm, was detached along with it. The epicondyle was fractured off along with a small thin shell of bone corresponding to the common origin of the extensor muscles of the forearm. On the outer side of the humerus further up, the origin of the extensor carpi radialis longior, and of the supinator radii longus, as well as the external intermuscular septum, were detached from the bone for a distance of two inches upwards. The posterior and internal surfaces of the humerus were denuded of periosteum to the same extent.

At the wrist, the lower epiphysis of the radius was found separated, a transverse diastasis having taken place through the epiphysal cartilage. The lower fragment was displaced backwards, but, owing to the transverse direction of the fissure, there was no shortening, and the shell of cartilage had prevented the occurrence of bony crepitus. The fissure was just at the lower margin of the pronator quadratus, and a few of the lowermost fibres of this muscle were torn across at their insertion into the radius. The front surface of the upper fragment of the radius underneath the pronator quadratus was partially denuded of its periosteum for three-quarters of an inch upwards, and this periosteum hung as a short flap from the upper edge of the lower fragment at its anterior part. Extensive infiltration of blood, but no distinct coagulum, was found in the connective tissue beneath the fascia, separating the superficial from the deep muscles on the front of the forearm, and this was most extensive in two situations, viz., in front of the interosseous membrane, between the flexor longus pollicis and the flexor profundus digitorum muscles, and between these muscles and the pronator quadratus. Similar extravasation extended into the palm of the hand, along the tendon of the flexor longus pollicis, and was also present on the back of the wrist below the tendon of the extensor secundi internodii pollicis. Finally, the styloid process of the ulna was fractured off at its tip, an injury which was not observed before dissection.

Nothing else abnormal was revealed by the dissection, which was conducted with great care.

My reason for bringing forward these minute details is, that they suffice to show exactly how the injuries had been produced, and are of value as adding to the knowledge we already possess regarding similar accidents to the radius and elbow-joint. The only possible explanation of their mode of production, and the one now generally adopted to explain similar injuries, is, that the boy had fallen with outstretched arm, on the palm of his hand, while the wrist was bent backwards. This is supported by the absence of cutaneous abrasion and extravasation from any other part of the arm on which the impact with the ground could have occurred; it being known that the palm of the hand usually escapes without such lesions. The palm of the hand resting on the ground, the weight of the body had to be borne by the forearm, and, as usual, the radius gave way at its lower part, just above the wrist. The fracture occurring by diastasis, or separation of the epiphysis, there was no impaction of the upper into the lower fragment, which was carried backwards with the carpus, and the strain thrown at the same time on the internal lateral ligament of the wrist-joint sufficed to break off the tip of the styloid process of the ulna to which it is attached.

The symptoms of fracture thus produced were somewhat peculiar. It is known that when this does not occur by diastasis of an epiphysis, the lower end of the radius, which articulates with the carpus, is not only carried backwards, but it is displaced obliquely, so that the articular facet is altered from its normal direction, *i.e.*, looking downwards, forwards, and inwards, and is found directed downwards, backwards, and outwards. The preparation of an old Colles' fracture, which has united, which I now show, will illustrate this alteration of direction very well when compared with the normal bone. The displacement results from a rotation of the lower fragment on the horizontal axis which runs through both forearm bones from within outwards, as well as on its antero-posterior axis. This last rotation, coupled with the frequently oblique direction of the plane of fracture from before upwards and backwards, or with the more or less marked impaction of the upper into the under fragment which is usually

* Prepared as a communication to the Aberdeen, Banff, and Kincardine Branch.