self; back very much curved and head sunk down. When in bed, always lies with her legs drawn up on her body." I take the following from the Case-book, under date July 31st. "Has been just about the same since last entry, not any worse; and of late has been up, as a rule, during the day. Soon after 5 o'clock this morning, the assistant medical officer was summoned to see her, as there appeared to be something the matter with her left arm. She had complained of its hurting her to the night nurse at her last visit, at 5 A.M. On examination, the left humerus was found to be fractured obliquely at the lower third, the upper point of the lower fragment being nearly through the skin. The patient stated that she did not know how it was done; that she did not feel anything wrong with it till towards morning, when it felt painful, and she told the night-nurse that 'something had come to her arm'. She had not hurt it that she knew of, and no one had done anything to her. The night-nurse said that she had been very frequently into the dormitory (containing four beds) during the night, as there was a patient very ill in it. H. N. had not complained till her visit at 5 o'clock. The only further fact elicited by inquiry was that the previous evening, between 7 and 8 o'clock, while one of the nurses, assisted by a patient, was conducting H. N. from the day-room to the dormitory, the patient helping tripped and fell; and in consequence of this H. N. fell over on one side, but she did not appear hurt in any way, and made no complaint while being taken to the dormitory. Another nurse assisted her into bed; she did not notice anything amiss, and H. N. did not complain or seem in pain. The latter, when asked about the fall in the passage, said she recollected it; that it was quite accidental, and she did not recollect being hurt then; and repeated that it was not till it was getting light that she felt anything wrong with her arm. The fracture has been put up in the usual way; but owing to the general deformity, and also to the obliquity of the fracture, more than usual difficulty was experienced in doing so.—August 5th. Going on as well as can be expected. Was kept in bed for a few days, but gets up now and sits in an easy chair. Is very restless, and if not closely watched, interferes with the bandages.—August 10th. Up to last night, patient was going on very well, when a most extraordinary complication presented itself. About a quarter to 7, Dr. Deas was summoned to see her; that she had complained of her left knee, with which there seemed to be something the matter. Dr. Deas found her seated on a commode in the dormitory, and at once discovered that the left femur was fractured nearly straight across, a few inches above the knee-joint. There was slight fulness, but no mark or discoloration of any kind. The charge-nurse of the infirmary said that a few minutes before she had wheeled H. N. along in her easy-chair from the day-room. She had then brought the commode and placed it close by the chair, and then she had lifted the patient up by her arm and shoulders and just shifted her from the easy-chair on to the commode. As soon almost as the patient was set down on the commode, she put her hand down and complained of her knee. The nurse looked at it, saw something was wrong, and sent for Dr. Deas. The latter had seen H. N. about 4 in the afternoon. She was then sitting in the easy-chair in the ward. She was as usual, and complained of nothing particular. When Dr. Deas saw her, the easy-chair was on the left inside the dormitory door, and the commode was touching it and at right angles, so that she could have been moved from one to the other with very little effort. H. N. herself said that she felt something give way in her knee all at once just as she sat down on the commode, and made no complaint of any roughness or carelessness. The patient was put to bed, laid on her right side, and the fracture put up by means of two lateral splints, the knee being bent and the thigh flexed. No difficulty was found in reducing the fracture and retaining the fragments in pretty good position. This second fracture occurring after the first, and in a situation where, as a rule, fractures only occur from great direct violence or a fall from a considerable height, seems to point to only one conclusion, viz., that there is in this case that morbid condition of the structure of the bones, under which they are liable to give way spontaneously, or from very slight force or exertion."

I need not enter into details as to the further progress of the case. The patient did pretty well for a short time; but extensive bed-sores then formed, broncho-pneumonia supervened, and the patient sank in about three weeks from the date of the second fracture.

At the *post mortem* examination, the usual signs of broncho-pneumonia were present, and the heart was in a state of fatty degeneration. The diagnosis as to the condition of the bones was amply confirmed. The ribs were reduced to the thinnest shell of bone, as thin as paper, the interior consisting of very open cancellated texture, and dark soft grumous matter, which oozed out at each end when a portion of rib was squeezed between the finger and thumb, by which pressure the two surfaces could be approximated close together. The ribs, moreover, could be cut quite readily with a knife, either transversely or longitudinally,

and broke with a soft rotten sort of fracture under very slight force. I broke a portion of rib, about one and a half inches long, in two by snapping it with the fingers of both hands, as one would break a piece of stick. There was no fracture of any of the ribs, nor of any of the bones, except the left humerus and left femur. On cutting down at the seat of these fractures, there was hardly any attempt at union, although a considerable quantity of soft rotten callus had been thrown out. The femur and humerus were in the same state as the ribs, the external dense structure being a mere shell, through which I pushed a scalpel quite easily, the interior being composed of very open cancellæ and matter similar to that in the ribs.

I have not myself had an opportunity of witnessing the degree of degeneration of the osseous structure, which has been found in some of the recorded cases of extensive fractures of the ribs, etc.; but if it were anything approaching to the state of matters in this case, one could not be surprised at any amount of fractures, especially if the patient had been *at all restless or violent*, and without supposing that there had been the least ill-usage or undue violence. The moral of our case is very plain. Had this poor woman, instead of being quiet and helpless, been a recently admitted case labouring under acute mania, restless, violent, knocking herself about, rendering holding and a certain amount of restraint necessary on the part of the nurses, and even occasional struggles probable, she *must* have sustained numerous fractures; and probably, at the *post mortem* examination, more than half her ribs and her sternum would have been found broken. As it was, there could not be the least suspicion that the fractures were due to violence of any kind; indeed, helpless as she was, requiring lifting, etc., the whole state of her rotten ribs bears witness to the great gentleness with which she must have been habitually handled.

In conclusion, I would venture one other remark. I think there is a tendency now-a-days in asylum treatment to trust too much to *manual* restraint on the part of the attendants; and also to allow acutely maniacal cases to be at large in a ward, where, if they are not roaming about, exposed to chance encounters with other patients, they are being "restrained" by two or more attendants holding them, certainly to the mutual detriment of tempers, not to speak of the risk to possibly diseased bones. Such cases, and especially if epileptics or general paralytics, are, in my humble opinion, treated on wiser principles, and are also much safer, in the quietness and security of a padded room; and this I state as my deliberate opinion, even at the risk of being styled "an advocate of seclusion", or of being thought behind the age in the matter of treatment.

ON THE PATHOLOGY OF URÆMIA AND THE SO-CALLED URÆMIC CONVULSIONS.*

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THE pathology of uræmic convulsions, by which I mean convulsions associated with albuminuria and disease of the kidneys, has always appeared to me obscure and unsatisfactory. Of course, it has long since been proved that it is not really an excess of urea alone in the blood which gives rise to them, for urea injected into the blood appears perfectly innocuous; they are, therefore, considered to be due to some other of the effete materials which are retained in excess in the blood owing to the failure of the kidneys to excrete them. But it still remained difficult to account for the production of epileptiform convulsions by the retention of this effete material. No good reason for their occurrence could be given until the theory propounded by Dr. Hughlings Jackson, that they were due to anæmia of the brain caused by spasm of the cerebral arteries, gave us what appeared to be a probable explanation, more or less consistent with known physiological facts. This view has lately been very ably and powerfully supported by Dr. George Johnson in his recent Lumeian lectures at the Royal College of Physicians, and I should be rash indeed did I venture to dispute the conclusions arrived at by such distinguished authorities. Every question, however, has two sides, and I shall endeavour in the present paper to look at another side of this question to that which has lately been brought before us, though without expressing a belief in either view, for I think it better to withhold judgment till further proof can be obtained.

It is needless for me to refer to the condition of high arterial tension which is so constantly found in acute and chronic Bright's disease, or to mention the changes taking place in the heart and arteries generally.

* Read before the Harveian Society of London.

It is well known that, as a result of these, various hæmorrhages may occur from rupture of minute or larger blood-vessels; these often take place from or into the mucous membranes of the nose, intestinal tract, uterus, and, perhaps, air-passages and bladder. They are also known to occur below the serous membranes, as in the peritoneum, pleura, or pericardium. They are frequently seen in the retina, preceding or accompanying "albuminuric retinitis". They are very commonly seen in the brain, causing extensive hæmorrhage; it is, indeed, the most common cause of apoplexy. What I want to bring forward in the present paper is the fact that small capillary hæmorrhages may, and do very frequently, occur in the brain as the result of Bright's disease, and that these hæmorrhages are the causes of the epileptiform convulsions generally known as uræmic, and that, indeed, all the so-called uræmic symptoms are due to the results of high tension on the capillaries of the brain, producing rupture of or exudation from them. I believe the reason why this has not been previously commonly observed is, that such hæmorrhages usually occur in the grey matter of the convolutions, and that it is manifestly impossible that all the convolutions of the brain should be examined for minute punctiform hæmorrhages, whose very existence was not even suspected. In future, however, our search need not be so extensive, thanks to our better knowledge of the functions of the brain, and an ability to more accurately localise lesions in it. Given an observation during life of the group of muscles especially affected by the convulsions, we need only confine our search to one or two convolutions, should such minute hæmorrhages appear likely to be their exciting cause. Before discussing further the probabilities of this view, I will mention some cases in support of it.

CASE I.—I. C., aged 61, was admitted into St. Mary's Hospital on December 29th, 1876, under the care of Dr. Handfield Jones, who has kindly allowed me to make extracts from his clinical notes. The patient was a painter; he had never had colic or dropped wrist: his mother died of apoplexy: one sister died suddenly from a fit of some kind, and another sister suffers from pain in the head. Three years ago, he began to suffer from pain across the forehead, more particularly over the left eye; he seldom passed a day free from this. He suffered from vertigo and epistaxis, which frequently occurred in the course of his illness, and was often very profuse. On admission, the patient was an anæmic flabby old man, with slight arcus senilis. The legs were cedematous: the pulse was hard and persistent, giving a tracing characteristic of high tension: the præcordial dulness was increased: the apex beat was in the normal position, but widely diffused. The second heart-sound was accentuated at base; the first was prolonged, and occasionally a systolic *bruit* was audible. There were a few *râles* in the chest, but no dulness: the liver appeared small, and there was a little fluid in the abdominal cavity: the urine was of specific gravity 1010, very pale, slightly albuminous, and contained many granular casts: vision was indistinct: there was a small hæmorrhage into the right retina: the retinal arteries were contracted: the fundus of the eye was pale, whitish, and opaque. The case was evidently one of chronic Bright's disease. Soon after he came in, he had a kind of faint, and was unconscious for some time. There was no paralysis: he was often drowsy and dizzy; he became worse, the breathing getting oppressed: dulness appeared at the base of the lungs: the urine became more scanty: he was drowsy, and exhaled an offensive uræmic smell. On March 5th, he had a convulsive seizure, described as coming on with flexion, first of the legs, then arms, followed by foaming at the mouth: the attack lasted half an hour, but was very severe for ten minutes: he had a similar one the day before. He gradually sank into a low typhoid condition, such as is common in cases of uræmia, and died on March 7th.

The principal points of interest in the *post mortem* examination are as follows. The brain weighed 46½ ounces: the membranes were dull and opaque over the vertex: the arteries were much degenerated and mottled with atheromatous patches: the brain contained very little venous blood: on the right side, below the convolutions of the island of Reil, between the grey matter and the extraventricular corpus striatum, was a considerable and rather recent blood-clot, which was not discoloured, though of a brownish red hue, about the size of a hazel-nut; there was no surrounding softening. In the left extraventricular corpus striatum at the lower part was a small cyst of the size of an apple-pip, apparently the remains of an old hæmorrhage. In the pons near the lower surface, and in the motor tract, and also in the middle line, were several small hæmorrhages, about the size of pins' heads. The lungs were cedematous and bronchitic. There was general hypertrophy of the heart, which weighed 17½ ounces: the left ventricle was especially thickened. The aorta was very atheromatous. There was chronic gastro-intestinal catarrh and thickening of the mucous membrane of the alimentary canal. There was also an

increase of fibrous tissue in the liver. The spleen, to which I especially wish to call your attention, was contracted: the capsule was dotted with small white spots, and there were several fibrinous nodules scattered throughout it: the tissue was dense. I believe that these fibrinous nodules, which were evidently the remains of extravasated blood, were due to previous hæmorrhages in the spleen, similar to those seen in the brain and elsewhere in Bright's disease, and that they are not an unfrequent condition. In a case which follows, we shall see, I think, an earlier stage of the same condition. The kidneys together weighed only 5 ounces; they were mottled in colour, peeled imperfectly, fragments of kidney-tissue being stripped off with the capsule. The surface was very granular and irregular, mottled, pale and dark in colour: they contained many cysts, none larger than a cherry-stone: there was scarcely any cortical portion remaining. The arteries were much thickened and gaping. There were no signs of syphilis in the testes or elsewhere.

In this case the convulsions, which from the report appear to have been of a tonic character, occurring two days before death, were apparently of the same date as the punctiform hæmorrhages in the pons Varolii. Regarding these I may here state, although I do not wish at present to enter into the minute pathology of punctiform hæmorrhages, that microscopic examination showed them to be the result of actual hæmorrhage from rupture of vessels, and not merely aneurismal dilations of small vessels. The microscope also discovered what appeared to be the remains of other and much older minute hæmorrhages among the fibres of the pons. The "fainting fit", after which he was unconscious for a time, which he had soon after admission, was probably caused by the hæmorrhage producing the clot, of the size of a hazel-nut, below the convolutions of the island of Reil on the right side. This is quite in accordance with what we might expect from a hæmorrhage in this position.

CASE II.—M. C., aged 55, was admitted into Guy's Hospital, under the care of Dr. Habershon, October 24th, and died on October 28th, 1874. She had been married twenty-five years. She had no children. One brother was subject to "epilepsy". She always had indifferent health; subject to frontal headaches, often followed by fits lasting an hour. Ten months before admission, she was an out-patient for lead-poisoning. She had, on an average, one fit in three months (all probably uræmic). On October 24th, she had a fit, and was brought to the hospital. She was comatose, with stertorous breathing. The pupils were equally contracted, but insensible. The arms were folded across the chest and quite rigid. The ankles were cedematous. There was no paralysis of the limbs. The heart's action was heaving; dulness was increased. The pulse was hard, 54. Temperature, 93.6 deg. The urine was highly albuminous, of specific gravity 1012. On the 26th, the face was drawn to the right side. Her breathing became worse and death ensued on the 28th. On the side of the left hemisphere, in the middle lobe, there was a livid discoloration below the arachnoid for a considerable space, due to extravasation of blood in the cortex of the brain; where largest, of the diameter of a shilling. Round it was some yellow softening, and also some punctiform ecchymoses. There were none of the ordinary appearances of bruising. It was not due to injury. The affected part lay above the descending cornu of the lateral ventricle. That ventricle contained blood-stained fluid, while that in right was colourless. The diseased condition did not appear to extend far into the substance of the hemisphere; but that half of the brain was very decidedly larger than the other. Little punctiform ecchymoses extended into the outer and back part of the thalamus. The ventricles of the brain were not dilated. The heart weighed 14 ounces. The left ventricle was hypertrophied. The kidneys weighed 8 ounces, and were extremely diseased. Their surface was roughened, of an opaque yellow colour; the cortex was extremely wasted, reduced in most places to one line. The arteries were much diseased.

CASE III.—H. S., aged 25, was admitted into Guy's Hospital under the care of Dr. Habershon, July 15th, and died July 23rd, 1874. He was a labourer; he drank much. About twelve months ago, his face began to swell, and then his feet and body. He was in Croydon Infirmary till three weeks before admission, and was there discharged relieved. He returned to work and the symptoms recurred. He was sallow and anæmic-looking, and had an anxious expression. The skin was rather dry; he was thirsty, and was often sick. The abdomen was distended with fluid. The cardiac dulness was extended. The apex beat was half an inch below and external to the nipple. There was a systolic *bruit*, loudest at the apex, and midway between the mamma and the sternum. The urine was of specific gravity 1008, albuminous, and containing hyaline and granular casts and secreting cells. He had convulsions, and was very drowsy. He died in fits. The brain weighed 56 ounces; it was very anæmic. There were no bloody points on section. It was dry and firm. There was no excess of fluid in the

ventricles, nor were they dilated. *In the pons there were scattered red spots, which seemed to be ecchymotic spots.* The heart weighed 17 ounces. There was much hypertrophy of the left ventricle. There was extravasated blood below the peritoneum, in the recto-vesical pouch. There were slaty-coloured patches in the intestinal mucous membrane, in the ileum, and cæcum. The kidneys weighed 12 ounces. The cortex was atrophied; the surface was smooth; the colour mottled. Much fat was contained in the pelvis. The arteries were not rigid, but the microscope showed much interstitial change. The weight was chiefly made up by the fat invading the pelvis.

CASE IV.—J. P., aged about 50, was admitted into Guy's Hospital, under the care of Dr. Wilks, on April 24th, and he died April 28th, 1874. He gave a history of fits. He had a fit on the day of admission, lasting ten minutes, in which he fell and cut his head, for which he was admitted. Erysipelas supervened, and caused death. No brain-symptoms occurred other than those due to erysipelas. The brain weighed 52 ounces. There was meningeal hæmorrhage; most blood was found in the diamond-shaped space at the anterior margin of the pons, probably due to gravitation. The vessels were fairly sound, somewhat atheromatous. There were a number of minute ecchymoses in the substance of the pons and crura. There was no evidence of bruising. No small aneurisms were present, though, from the arrangement of the clot round a small branch of the posterior cerebral artery, there was suspicion of leakage here. The heart weighed 12 ounces; it was healthy. The aorta was wrinkled and inelastic. The spleen weighed 13 ounces; it was pulpy, with hæmorrhage in its substance and much blood-clots; no plugging of vessels. The kidneys weighed 12 ounces. The capsules were adherent, and their surface granular; they contained a few cysts, and were too homogeneous in appearance on section. The microscope did not show the kidney to be a bad organ, but the epithelium was a little too plentiful. Dr. Hilton Fagge appends the following note to his *post mortem* report: "The cause of the apoplexy must still remain in question. No bruising of the brain could be found, and no aneurism. Was it the consequence or the cause of the fit? The state of the spleen was remarkable. I thought it most probably due to erysipelatos poison, a somewhat similar case to those of abscess in the same organ after typhus." With regard to the condition of the spleen, I believe the hæmorrhage to be of the same nature as those occurring elsewhere in Bright's disease, and due to rupture of capillaries by high blood-pressure; it is probably an early stage of the condition seen in Case I.

I do not propose to enter here upon the minute pathology of these capillary hæmorrhages. While bearing in mind the miliary aneurisms described by Charcot and Bouchard, and also the similar true and dissecting aneurisms of the small cerebral vessels (especially those of the cortex) described by Rindfleisch and many others, and the well-known forms of degeneration affecting the smaller vessels and capillaries of the brain, often seen in connection with Bright's disease and other allied conditions, and that with these anatomical changes frequent variations in the arterial tension occur, it will be admitted that there exists in Bright's disease abundant cause for the occurrence of all forms of cerebral hæmorrhages: moreover, these ecchymotic spots are true hæmorrhages, and not merely the sacs of minute aneurisms transversely divided.

[To be continued.]

OBSTETRIC MEMORANDA.

TARNIER'S FORCEPS.

WE have employed Tarnier's new forceps on several occasions recently in this hospital: 1. In cases of ordinary tedious labour, when the head was low in the pelvis and the delay due to inertia; 2. In a case of tedious labour where, the pelvis being well formed, we deemed it necessary to effect delivery while the os was still but two-thirds dilated and the head above the brim; 3. In a case where the base of the skull was arrested at the brim, the conjugate diameter being lessened by the undue projection of the promontory of the sacrum. This woman had on two previous occasions been delivered in the hospital with the long forceps; and on the present occasion no advance had been made for nine hours, though the pains were incessant and powerful. It is, therefore, evident that we have fairly tested the instrument.

We have arrived at the conclusion that the instrument possesses the advantages claimed for it by Dr. Tarnier, and which he points out as being essential to a perfect forceps. 1. It admits of traction being made in the axis of that portion of the pelvic cavity which the fetal head at the moment occupies. 2. It possesses an indicator capable of pointing out the direction in which traction should be made. 3. It permits the head to rotate as it descends. This last point was clearly

demonstrated in the case of difficult labour alluded to above. The head lay at the brim in the third position. If we apply Barnes's long forceps to the head when in that position, we generally find that it is born face to pubes. In this case, however, while extracting with Tarnier's forceps, the head rotated and was born in the second position. We also are of opinion that less force is needed when extracting with these than with ordinary forceps. But, while thus admitting that Tarnier's forceps possesses the advantages which its inventor claims for it, it has also certain disadvantages which to a great extent counterbalance them. Of these the most important is, that the pressure of the prehensile blades on the foetal head is regulated by a screw; and, the amount of pressure which should be employed being a matter of conjecture, if the blades be not screwed sufficiently tightly together, they slip off the moment traction is made, and have to be loosened and reapplied, which, in consequence of their complicated mechanism, is a little troublesome; while, if the screw be turned a little too much, the life of the child is endangered from the effects of undue pressure. Moreover, in Tarnier's forceps the pressure exercised by the blades is never relaxed, as is the case when the English instrument is used; for every experienced operator permits the handles of the instrument to separate a little in the interval when he ceases to make traction, and, by so doing, relieves for the moment the head from pressure. Next, the instrument, in consequence of its construction, is not so easily applied as the English forceps. Doubtless, in skilled hands, this is a matter of little moment; but to others it would prove a serious drawback. The price, too (£2 16s.), is a bar to its being generally purchased. In fact, I believe the instrument to be a good one as a tractor, but am satisfied that it never will be in this country a popular one.

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THERAPEUTIC MEMORANDA.

THE TURKISH BATH IN INSANITY.

IN the Annual Report of the Colney Hatch Lunatic Asylum for 1877, Dr. Sheppard makes the following remark with regard to the use of the Turkish bath. "The more I see of the effects of hot air in the treatment of certain forms of insanity, the more am I persuaded that no asylum can lay claim to completeness which is not furnished with this apparatus for eliminating poisons and renewing life." The following case will, I think, serve to confirm that statement, or, at any rate, would seem to indicate some therapeutical value of the Turkish bath in a case of melancholia.

I was induced to take a few notes with regard to the more immediate effects of the bath on account of some observations published in the *Lancet* of May 20th, 1876, by Dr. Duckworth Williams, with respect to the alteration in the respiratory functions during the free perspiration caused by the bath. The case was one of ordinary melancholia in a man forty-two years of age. The complaint originated about a year previous to taking the baths, and was attributed to a sun-stroke in India. The patient had rather an emaciated appearance. The liver and digestive organs were out of order. He was profoundly melancholy and taciturn, and had delusions of a religious kind. During a period of six weeks, the man had twelve Turkish baths—two a week. The following are the notes with regard to the alteration in the respiratory movements and pulse, which fully bear out those made by Dr. Duckworth Williams. *First bath:* respirations 18; pulse 100; temperature of bath 175 deg. *Second bath:* respirations 17; pulse 100; temperature of bath 175 deg. *Third bath:* respirations 15; pulse 100; temperature of bath 180 deg. In each successive bath it was observed that the respiratory movements and pulse maintained about the same ratio during free perspiration. The after-effects of the baths were as follows. About half an hour after the first bath, the patient fell into a calm sleep which lasted some hours, from which he awoke greatly refreshed, and appeared for a time to show symptoms of becoming more sociable. From the time of first taking the baths, it was unnecessary to give him any sedatives. He had previously been in the habit of taking chloral; but from that time a fair amount of natural sleep was obtained, and no drugs of any kind were administered. He rapidly gained flesh; his appetite improved; there was no longer any difficulty in persuading him to take food; and his liver and digestive organs performed their functions in a natural manner. At the end of the period of his taking Turkish baths, there was certainly a marked improvement in his appearance. From being a thin, weak, depressed-looking man, suffering from dyspeptic symptoms, he became, after about six weeks, decidedly more cheerful, had gained weight, and his