and insensible to light; the breathing was stertorous; there were convulsive movements of the limbs on both sides of the body. It was thought proper to enlarge the wound by a crucial incision, but this did not expose any injury of the bone. During the night, he had a series of convulsions, and died in the morning.

On *post mortem* examination, no injury to the bones was found, nor was there any extravasation above the dura mater; but a very large clot of semi-fluid blood was found in the arachnoid cavity, over the whole of the left hemisphere. This effusion did not extend down the falx, but ceased rather abruptly at the distance of about half an inch from the longitudinal fissure. The veins running into the longitudinal sinus were much gorged with blood. The vessel which had given rise to the hæmorrhage was not found, but it appeared probable that it was one of the veins just mentioned. The convolutions of the left side of the brain were much compressed, so that that side was broader on section than the other; otherwise no morbid appearance was observed about the brain. The other viscera were healthy.

CASE II. Francis C., an adult, was admitted on July 13th, under the care of Dr. Page. It seemed that he had been drinking for some days. He was found lying in the road, in the neighbourhood of Kensington, and was taken to the police-station, where he remained during the night. In the morning, the surgeon of the force was sent for, and pronounced him to be labouring under "effusion on the brain". He was at once brought to the Hospital, being then in a complete state of coma. A turpentine enema was given, the neck blistered, and an attempt made to bring him under the influence of mercury; but he never rallied, or showed the least sign of consciousness; and expired next morning.

On *post mortem* examination, thirty-four hours after death, it was noticed that the rigor mortis was still present. There was a slight bruise on the left leg, but no other trace of external injury. On turning down the scalp, however, a slight bruise was detected over the occipital region on the left side. Starting here from the upper part of the occipital bone, a linear fracture traversed the whole of the left portion of the bone, passed through the foramen lacerum posterius without any injury to the vessels or nerves, and terminated in the neighbourhood of the cavernous sinus. There was no hæmorrhage or bruising of the brain on this side; but, on the opposite (right) side, the whole hemisphere was covered by a large effusion of blood in the sac of the arachnoid; the clot being of great thickness at various parts, especially towards the base, where it indented the surface of the brain to a great extent. The skull and dura mater were quite healthy on this side. The brain was slightly bruised at the lower part of the right anterior and middle lobes. In all other respects, it was perfectly healthy, as were the vessels. The viscera were healthy.

Original Communications.

CASE OF CHRONIC GRANULAR DEGENERATION OF BOTH KIDNEYS, TERMINATING FATALLY, WITHOUT DROPSICAL EFFUSION.

By PHILIP H. WILLIAMS, M.D., Worcester.

ANNE B., aged 55 years, married, rather short and plump, of clear and rosy complexion, remarkably active habits, uniformly good health, in extensive business as a confectioner. About two years since, a little less facility in attending to business was noticed. Occasional pain and weakness in the loins were complained of. A slight change in the complexion, in the relish for food, in endurance of fatigue, and in general cheerfulness, was observed. The memory was at times not consistent with its former accuracy. A general want of tone and elasticity was perceptible. Still there were no urgent symptoms that led to seeking medical advice until two months ago. Emaciation and increasing weakness, with loss of appetite and sleep, were the chief points that were then obvious. These symptoms were fairly ascribed to constant bodily and mental exertion. Change of air, complete rest, tonic medicines, and generous diet, were recommended. The result was not satisfactory. The patient, after spending a few days on the coast, returned home much weaker than before. Soon after this time, I was requested to see her. I found that the

unfavourable indications already enumerated were augmented. There was very little appetite; little interest about business; no energy; but a general restless feebleness, with thirst, emaciation, and depression.

The following is an outline of my examination. The brain was evidently oppressed, although at times perfectly clear. Sensation and voluntary motion were complete. There was little sound sleep, but frequent drowsiness. The lungs were quite healthy; the respirations were sixteen per minute. The heart was quite healthy; pulse 90. The liver was healthy, a little below the average size. The secretion of bile was slightly defective. No pain, tenderness, or distension, were observed in the abdomen. The bowels were regular; the evacuations dark. Slight pain and constant uneasiness were felt in the lumbar region. The quantity of urine was nearly normal; it was pale, and faintly acid; its specific gravity was 1009. Heat and nitric acid precipitated albumen (a sixth of the bulk of the urine). The microscope was not used, because the diagnosis was quite clear without it. The skin was dry, sallow, and shrunken. Patches of purpura were present on the thighs and legs. The tongue was dry, and had a broad black stripe along the centre. The integuments were natural; not the slightest effusion of fluid could be detected in any part.

The *diagnosis*, given after waiting a few days to ascertain whether the albuminuria, with low specific gravity, was permanent and uniform, was chronic granular degeneration of the kidneys.

The *prognosis*, at the same date, was—convulsions; coma; and death, at no distant period, from uræmia.

Nausea and vomiting came on shortly, so that very little nourishment could be taken. The thirst became constant. The proportion of albumen began to increase, and the amount of urine secreted somewhat to diminish. It became distinctly alkaline. The largest deposit of albumen was a *third* of the bulk of urine. This continued to the last testing, about two days before death. A tendency to coma soon became marked. The pulse was irregular and feeble. The respirations were reduced to eight per minute. The speech was inarticulate, and the power of retaining fluids in the mouth was almost gone. This state continued for two days and nights, at the end of which a violent convulsion occurred, followed by an extraordinary revival of the nervous energy. The patient conversed rationally, knew every one around her, made arrangements for her funeral, swallowed easily a considerable amount of fluids, and was so "much herself", that I had some difficulty in convincing her friends that it was only a temporary flash, and that the real danger was unaltered. A change for the worse ensued in about forty-eight hours. Frequent convulsions supervened; coma followed; and death was not long delayed.

POST MORTEM EXAMINATION. The thoracic and abdominal viscera were carefully inspected. Not an indication of morbid action was found until we came to the kidneys. The liver was a little below the average size, and the spleen was very small, but the tissue of both organs was normal. The weight of the right kidney was barely *two* ounces; that of the left was a little over two ounces. When the investing membrane was peeled off (it was most loosely attached), the surface of each kidney presented a mottled granular appearance, with several larger prominences of a greenish grey colour. On making a longitudinal section, it was found that the greater part of the tubular tissue was replaced by a greyish granular structure, combined with numerous deposits of yellow fat. A few only of the conical divisions with their papillæ could be distinctly traced.

REMARKS. It has long been observed by Dr. Christison and other writers, that dropsy is not a necessary concomitant of Bright's disease of the kidneys; but the cases on record in which there has existed the same extent of chronic structural change in those organs, as in the present instance, without serous effusion at some stage of the malady, are, I believe, so few, as to justify me in having requested the publication of the preceding details in the JOURNAL. There can be no question that, as a rule, dropsy is the condition that leads to the first suspicion of renal mischief. In this case there was not even the occasional puffiness that in the early stages is so constantly perceptible. The quantity of watery fluid regularly passed, until a few hours before death, was very unusual for kidneys so extensively affected, and may account for the absence of local or general effusion. Another peculiarity was the state of the tongue. I am not aware that a singular black appearance of the centre of the tongue has been noted in connection with renal disease; but this condition has occurred in three cases that have recently been under my care.

The cause of the disease in the present instance was, probably, exposure to sudden changes of temperature with over-exertion and loss of rest. The patient was continually superintending balls, archery meetings, and fêtes of every description. She was in the habit of sitting in a cold bath every morning on leaving her bed. Nothing could be more likely to produce internal congestion than exposure to variations of heat and cold during the greater part of the night, then sleeping for two or three hours, and taking a cold bath in a state of weariness in the morning. There had not been scarlatina or any previous affection of the skin.

The next point I would mention, is the alkaline state of the urine, which was several times noticed. On these occasions, heat alone did not precipitate the albumen. The necessity of adding nitric acid was well shewn—a precaution that I have more than once seen overlooked in practice. The sudden restoration of the nervous power shortly before death has, doubtless, been noticed by those who have watched carefully the progress of albuminuria. In a former case that I attended, the improvement in all the general symptoms was so great about three weeks before death, that I should have been completely deceived had not the persistence of the albumen led me to discard all minor indications, and adhere to my original prognosis.

TREATMENT. There is very little to be said about the treatment of the present case. Before I was called in, the purpura and debility were treated with turpentine and other medicines; and, so far as the purpura was concerned, with decided benefit. The only additional indicata that I noticed, were warm baths, which, however, the weakness rendered unsafe; small doses of calomel, to improve the secretion of the liver, which were so far successful; and soda water, with brandy and prussic acid, to allay the sickness. This latter combination gave great temporary relief.

I have only to add, that the brain was not examined, because it was wished not to proceed further than was required for the discovery of the cause of the symptoms and their fatal termination.

P.S.—If any of our associates can call to mind cases in which purpura, black tongue, and a shrunken condition of the spleen, have been co-existent with structural changes in the kidneys, I shall feel particularly obliged by their communicating the information through the medium of the JOURNAL.

NOTES OF CASES OF GUN-SHOT WOUND.

By G. NAYLER, Esq., Assistant-Surgeon, Central India Field Force.

[Continued from page 646.]

CASE V. *Gun-shot Wound of the Ankle-Joint: Amputation: Recovery.* Private Fitzgerald, aged 23, 3rd Bombay Europeans, was brought into the hospital of his regiment with a gun-shot wound situated in front of the ankle-joint, the ball emerging at the inner side, close to and just below the tibia. There was nothing remarkable about the appearance of the wound; no hæmorrhage, and little pain. Much tenderness, however, was felt when any pressure was made on the joint at its outer part. The fibula was sound. An inside splint, from which a semicircular piece was cut out, in order to avoid pressure on the inner wound, was applied to the limb, extending from the condyle of the tibia, and along the border of the foot, to the ball of the great toe, and secured with a bandage, leaving the wound open, to which water-dressing was applied. From his inability to bear the least pressure on the outer part of the foot, it was impossible to use an outer splint.

No change took place until April 7th, when the wound was observed to be increased in size, with florid edges, and a greenish coloured slough in the centre. It was somewhat painful; but there was great tenderness about the outer malleolus, which was somewhat red and swollen. Three dozen leeches were applied to the part, and afterwards a poultice.

April 8th. The swelling was less, and he had not so much pain.

April 10th. Leeches were again applied, which produced relief.

April 13th. The wound was so far better that water-dressing was resumed.

April 14th. He was sent, with the remainder of the wounded, to the Field Hospital, where he came under my care.

He soon began to complain of great pain about the joint, for which no relief could be obtained; and it became aggravated at night.

April 19th. After a consultation, it was resolved that the limb should be amputated; which I accordingly did the next day. A good deal of blood was lost during the operation. On examining the foot after its removal, the ball was found to have perforated the lower part of the tibia, leaving only a thin shell between it and the joint. A great number of comminuted portions of bone were discovered in the course of the wound; and the cartilaginous surface of the tibia showed incipient ulceration.

The patient has progressed to this date (May 22nd) without a single bad symptom.

CASE VI. *Gun-shot Wound of the Clavicle.* This injury occurred to a sepoy of the 25th Regiment, N.I.; the bullet striking the clavicle about three-fourths of an inch from the sternum, and emerging above the scapula of the same side. To Dr. Stewart, in medical charge of the regiment, I am indebted for the opportunity of witnessing this case, which I did on April 14th. At the period of my visit, the ends of the bones could be distinctly seen, about an inch and a quarter apart from each other, and presenting no abnormal appearance. Dr. Stewart informed me that he had removed three or more pieces of bone from the wound, which had been received on April 3rd. The arm was confined to the side; a figure of 8 bandage was applied; and water-dressing. On the departure of the regiment, on April 26th, for Calpee, the patient was sent to the Field Hospital. In the course of the following week, a manifest enlargement was perceptible in the ends of the bones; and, a few days later, an arch was thrown out below the level of the clavicle, connecting these ends together. A like deposit had also taken place on the other side of the clavicle; and on May 12th, when I saw this patient with the field-surgeon under whose charge he was, the greater part of a bony ring had formed, a deficiency of about half an inch being present at the upper part towards the neck. Again, on the 22nd of the month, I found no further change, except that the size of the wound was much less, and a small piece of bone had become sufficiently detached to be removed with the forceps. On measuring the distance between the sterno-clavicular articulations, and the acromion process of the scapula of each side, the right or wounded clavicle gave an excess of half an inch over its fellow.

CASE VII. *Shell-Wound of the Clavicle.* I may mention a case of a more severe injury of the clavicle, involving nearly its outer half, which has been under my care since May 1st, at the Civil Hospital. The patient, aged about 19, was wounded in the course of the siege by a fragment of a shell, which struck him in the shoulder, inflicting a fearful wound of the soft parts, and comminuting the bone. On examination, I found a fragment of the clavicle, of not more than a third of an inch, connected to the acromion process of the scapula, with an interval of fully three inches between it and the remaining bulk of the clavicle. This latter portion, at its outer part, where it was exposed for half an inch in the wound, was splintered in two pieces; and close to it, lying isolated in the wound, was a small piece of the clavicle, of the size of an almond. The treatment consisted in supporting the elbow, and confining the arm to the side; applying only water-dressing to the wound, which was very healthy. A few days ago, I removed a piece of bone, and other small portions will be sufficiently loose to admit shortly of their extraction.

In this, as in the previous case, a large bony arch, similarly situated below the line of the clavicle, and immediately beneath the skin, was found to have been formed for the support of the injured parts. In its outline, it was somewhat irregular; and the bony material became less marked towards its centre. This bony deposit, it was observed, was thrown out only from the sound part of the clavicle—none from the splintered portion; and, on tracing the arch towards its outer extremity, it was found to be connected with the acromion process of the scapula. The patient is progressing favourably, and the wound closing.

CASE VIII. *Gun-shot Wound of the Forearm: Death from Secondary Hæmorrhage.* On April 15th, the medical officer in charge asked me to see a case of a sepoy, severely wounded in the forearm by a musket-ball, which was still lodged. The wound, situated on the anterior surface, about its middle, was of considerable extent, and presented a foul unhealthy appearance. There was much loss of skin. Secondary hæmorrhage had taken place the previous night, which was mainly arrested by a tourniquet to the brachial artery, and the application of several