Reduction was easy, and the same after-treatment was adopted.

CASE IV.—T. B., aged 21. This case was rather different to the others, owing to the fact that he sustained an oblique fracture of the tibia as well as dislocation of the knee.

The skin was split at the back of the joint in the same way as in Cases II and III. Having reduced the dislocation without trouble the fracture presented some difficulty owing to its obliquity. It was found necessary to put on extension in order to keep it reduced. After about ten days this was replaced by plaster-of-paris. The ecchymosis and effusion into the joint was in this man very great, the former extending in one continuous broad black patch from the great trochanter to the foot.

This was the only really bad result; the man at the present time has a flail joint. He has also got paralysis of the extensor muscles of the foot owing probably to some injury to the anterior tibial nerve at the time of the accident. I have no doubt that the result was not improved by the extension, which was absolutely necessary in order to keep the fracture reduced, but was, I think, the lesser of two evils. He has not improved under electricity and massage.

CASE V.—T. C., aged 20. The dislocation (left knee) was the same as the previous cases. The effusion was large in amount, as was also the ecchymosis. The skin was not ruptured at the back of the joint. The dislocation was easily reduced, and the after-treatment was the same as before with the exception that the joint was put up in plaster-of-paris three weeks after the accident. The man got out of bed before he was allowed and tried his weight on the joint, which shot out of place and appeared to be quite useless.

Gentle movement was commenced in all the cases, except IV and V, at the end of a fortnight.

As soon as the men were allowed to move about without crutches I had leather kneecaps made for them, extending well above and below the joint and laced on the outside. These they wore for about three months, some two only, then one by one they discarded them, although they were told that they ought not to leave them off for twelve months, which treatment is in accordance with my teaching. However, colliers will be colliers, and usually under any treatment which becomes irksome will take the reins into their own hands and do as they like. The result in this case being that all the men (except Case IV, who does not improve) were at work under five months from the date of the accident with practically sound knees of the same appearance as before, and of equal usefulness.

I often ask the men if they feel anything of the knee. The answer is invariably "when there's a change in the weather," but the fact remains that they can walk well both above and below ground, and do collier's work, which is no sinecure. The roads in pits are often very stony and uneven, and are in consequence more injurious to a knee-joint than any other, notwithstanding which I have only had one man consult me since they started work (Case III), and that was soon after he began. A few more weeks' rest put him right, and he has not missed a day's work since he once got properly started.

What exactly happened to the ligaments of the respective joints, especially the internal ones, it is not quite possible to say. Undoubtedly the crucial ligaments were ruptured, as the joints appeared to be "flail-like" for some weeks after the injury. In Case IV the knee is still quite unsteady and loose, although he can walk with a support. That the ligaments were to a great extent repaired there can be no doubt, as the men have useful and firm joints with perfect extension and flexion, otherwise they could not do miner's work.

One man, named J. N., aged 45, had his right leg broken just above and below the knee-joint, also about 4 inches above the ankle, but the knee-joint appeared to be uninjured. This would, perhaps, point to less elasticity of bone than in the younger men. Several others had synovitis of the hip, knee, or ankle-joints.

In conclusion, I have to thank Dr. Willis, M.O.H. of Ilkeston, for valuable aid in reduction and in the after-treatment of the cases.

TWELVE CASES OF MAUSER BULLET WOUNDS.

By GEORGE ASHTON, M.B.Vict.,
Civil Surgeon to the Hospital Ship *Nubia*.

THE Mauser, which is the official bullet of the Boers, is 1.21 inch in length, weighs 172.83 gr., and is 0.275 inch in diameter. It leaves the rifle with a muzzle velocity of 2,380 feet per second, and the bullet while passing down the rifle barrel makes one complete turn to the left in every 9 inches. It is interesting to note for purposes of comparison that the

Lee-Metford bullet, Mark II, used by our troops in South Africa is 1.25 inch in length, weighs 215 gr., and is 0.303 inch in diameter. It leaves the muzzle of the rifle with a velocity of 2,000 feet per second, and the bullet while passing down the rifle barrel makes one complete turn to the right in every 10 inches. The following cases of Mauser bullet wounds are examples of the injuries met with in the present campaign:

CASE I. *Penetrating Wound of Thigh*.—Sergeant —, aged 31, of the King's Royal Rifles, was wounded at Spion Kop on January 24th. He was running to the attack to take a machine gun from the Boers when he was hit in the right thigh. He fell down and bled profusely. He commenced to apply his pocket field dressing when another bullet knocked his helmet off, so he left the dressing alone and lay perfectly still for seven hours, being within the zone of fire all this time. He was then found by the ambulance party and carried four miles on a stretcher to the field hospital. He was admitted to the *Nubia* on January 25th. There was a small black scab on the front of the right thigh, almost exactly in the line of the femoral artery and 2 inches below the middle of Poupart's ligament, and another black scab precisely similar in appearance in the middle line of the back of the thigh and 1 inch below the gluteal fold. He had no constitutional disturbance, took a full hospital diet, and complained of no pain. The scabs came away on February 4th, leaving small cicatrices. He resumed his duties at the front on March 9th, and said his leg feels as strong and well as ever.

CASE II. *Penetrating Wound of the Chest*.—Lieutenant —, aged 25, of the 1st Border Regiment, was wounded at Colenso on December 15th. He was superintending the working of a Maxim gun, when he was hit in the left shoulder. He compares the pain to that of being struck with a large stone. He stood up, in a dazed condition for 30 seconds, but felt a great tightness round his chest, gasped for breath, and began to cough up blood. He fell down and remembers being placed on a stretcher, but then fainted. When he recovered consciousness, he was in an ambulance wagon. He coughed blood for 10 days. Emphysema appeared, extending from the lower costal margin to the clavicles, and was especially marked in the left axilla. All the emphysema disappeared in 7 days. The x rays were used and the bullet was localised and removed 14 days after the receipt of the injury on the inner side of the right armpit. He was admitted to the *Nubia* on January 10th. There was then a small cicatrix on the outer side of the left deltoid, 1½ inch below the angle formed by the junction of the spine of the scapula and acromion and so slightly posterior to the humerus. There was a linear cicatrix ¾ inch long on the inner side of the right axilla over the third and fourth ribs. There was no sign of emphysema, no pain on taking a deep breath, nothing abnormal on auscultation or percussion of the lungs. He was very short-winded, even on slight exertion, and had attacks of spasmodic coughing, but no expectoration. Sir William Stokes, when on a visit to the *Nubia*, saw this case, and was literally amazed at the course this bullet must have taken amongst the large blood vessels of the heart. The patient was sent to England on February 2nd.

CASE III. *Perforating Wound in Neighbourhood of Elbow: Complete Recovery*.—Private —, aged 20, Durham Light Infantry, was wounded at Krauskloof on February 5th. He was lying on his face firing, when he was struck in the left elbow. He says it was not very painful, but his arm became numb and useless. He applied the pocket field dressing, and walked two miles to the field hospital. He was admitted to the *Nubia* on February 19th. There was then a small cicatrix on the posterior surface of the left upper arm, 2½ inches above and slightly external to the olecranon. The exit wound also quite healed, was on the anterior surface of the olecranon, rather inclined to the outer border, and 1½ inch below the elbow fold. There was no swelling and no pain in the left elbow-joint. The circumferences of the left and right elbow-joints were equal. The patient, who resumed his duties at the front on March 9th, said his arm was as well as ever.

CASE IV. *Bullet Wound of Pelvis*.—Private —, aged 27, of the West Surrey Regiment, was wounded at Colenso on December 15th. He was lying on his face firing, when he felt a sharp pain in his left side and also a simultaneous pain inside his right knee. He crawled eight yards to a donga (an empty watercourse), where the field dressing was applied by a comrade to the wound in his side. He then managed to walk 100 yards to a stretcher party, and was carried to the field hospital. For the next five days he passed blood in his urine and the bullet was removed from the inside of his right knee on December 26th. The x rays were not used. He was admitted to the *Nubia* on January 12th. There was a small cicatrix ½ inch above the left iliac crest and ¾ inch posterior to the left anterior superior iliac spine. There was a linear cicatrix 2 inches long on the inner side of the right thigh, the lower end of the cicatrix reaching to the internal condyle of the femur. The urine was free from albumen or blood, and he complained only of a cutting pain in the lower part of the abdomen when he coughed or took a deep breath. He was sent to England on February 2nd.

CASE V. *Perforating Bullet Wound of Chest*.—Private —, aged 30, of the Lancashire Fusiliers, was wounded at Spion Kop on January 24th. He was lying on his face firing when a bullet hit him in the back. He compared the pain to that of being struck by a brick. He at once began to cough blood, and continued to do so in small quantities for three days. The pocket field dressing was applied by a comrade, and he attempted to walk to the field hospital, but after walking ten yards he fell down and fainted, and was carried off by the stretcher party. He was admitted to the *Nubia* on January 29th. There was a small black scab exactly in the middle line of his back, and between the tenth and eleventh dorsal spines. There was another black scab on the right side of the chest, exactly 1½ inch below the right nipple. He had no spinal symptoms, the knee-jerks were good, and he had no paralysis, anaesthesia, or shooting pains in the legs. There was no cough, and the lungs to percussion and auscultation were normal. He complained simply of a general feeling of lassitude and weariness. He slept well and ate well. On February 4th he was allowed to walk a little about the wards, and the scabs came away. On February 10th he left for Netley Hospital.

CASE VI. *Bullet Wound of Back*.—Private —, aged 27, of the West Surrey Regiment, was wounded at Colenso on December 15th. He was lying on

his face firing, when he felt as if he had been struck two heavy blows simultaneously with a hammer, over the left shoulder blade and the bottom of the back. He was unable to walk, and was carried off the field by the stretcher party. The x rays were used, and the bullet was removed over the sacrum on December 25th. He was admitted to the *Nubia* on January 11th. There was a small cicatrix $\frac{3}{4}$ inch below the spine of the left scapula and $\frac{6}{8}$ inches from the middle line of the back. There was a linear cicatrix $\frac{1}{2}$ inch long over the sacrum, slightly to the left of the middle line. The distance between the cicatrices was 18 inches. On admission, he complained of shooting pains over the whole of his back, but these gradually disappeared, and he resumed his duties at the front on March 7th.

CASE VII. Four Wounds produced by the Same Bullet.—Bugler —, aged 18, of the Dublin Fusiliers, was wounded at Colenso on December 15th. He was advancing to the attack, and was holding his haversack to his side with his left hand, when he was struck by a bullet, which hit his left hand, and then passed through his left thigh. He compares the pain in his hand to being struck with a stick, and felt no pain in his thigh. He went on running for five minutes, but then became faint and fell down, and was removed by the stretcher party. He was admitted to the *Nubia* on January 11th. There was a small cicatrix on the back of the left hand, about $\frac{1}{2}$ inch above the head of the third metacarpal bone, and an irregular cicatrix about the size of a shilling in the centre of the palm. The third metacarpal bone was thickened and had evidently been smashed. In the left thigh there was a small cicatrix $\frac{1}{2}$ inch above the great trochanter of the left femur, and the exit wound was also quite healed, being situated in the left buttock, 2 inches from the anus. The distance between the two cicatrices in the thigh measured 16 inches. This was a good example of one bullet causing four distinct wounds. He resumed his duties at the front on January 7th, having good use in the fingers of his left hand.

CASE VIII. Bullet Wound of Chest: Rapid Recovery.—Lieutenant —, aged 26, of the West Surrey Regiment, was wounded at Fabiana on January 21st. He was leading his company in the advance, when a bullet went through his helmet, and a few minutes afterwards another bullet struck him in the left breast. This was at 9.30 A.M. He compared the pain to that of a heavy blow with a stick. He went on running for twenty yards, but then stopped as he felt his wind go; he lay down and applied his field dressing. He stayed there for six hours, and then crawled down the hill and lay at the foot of it for another three hours, smoking his pipe. He then walked as best he could to the field hospital, arriving there at 9 P.M. He did not cough any blood, and had not been troubled with a cough, nor had he any pain on taking a deep breath. He was admitted to the *Nubia* on January 30th. There was a small black scab 2 inches above the left nipple, and another one $\frac{1}{2}$ inch outside the angle of the left scapula. He was very fit and ate and slept well, and returned to his duties at the front on February 2nd, having only been twelve days on the sick list.

CASE IX. Perforating Bullet Wound of Arm: Rapid Recovery.—Sergeant —, aged 38, of the Inniskilling Fusiliers, was wounded at Colenso on December 15th, 1899. He was lying on his face firing, when he was hit in the right arm. He compared the pain to that of a red-hot poker burn; his arm became numb and useless, but did not bleed much. He walked a quarter of a mile to a stretcher party, who bandaged his arm, and then, as he did not feel weak, walked two miles to the field hospital. He was admitted to the *Nubia* on January 14th. There was a small cicatrix on the anterior surface of the right upper arm at the level of the insertion of the deltoid muscle to the humerus, and another small cicatrix on the inner side of the arm 2 inches distant from the entrance cicatrix. He resumed his duties at the front on January 20th, his arm being quite well.

CASE X. Perforating Bullet Wound of the Thigh.—Lieutenant —, aged 23, of the York and Lancaster Regiment, was wounded at Venterpruit on January 30th. He was lying down on the crest of a hill, when he was hit in the left thigh, at a distance of 700 yards. He compared the pain to that of a blow with a coal hammer. The wound began to bleed, so he applied his field dressing and crawled ten yards to cover, where he lay for two hours. He was then carried to the foot of the hill, as he was unable to walk, his leg being quite useless. He was left there for another five hours, the rain meanwhile descending in torrents, and was then carried to the field hospital. He was admitted to the *Nubia* on February 8th. There was a small cicatrix on the anterior surface of the left thigh, slightly to the outer side, and $\frac{3}{4}$ inches above the upper border of the patella. The exit wound was also represented by a small cicatrix on the posterior surface of the thigh, 4 inches above the centre of the popliteal space. The distance between the cicatrices measured round the outer side of the thigh was 6 inches. He walked very well, never had any constitutional disturbance, and only complained of slight pain when he flexed the knee to the uttermost. He resumed his duties at the front on March 2nd.

CASE XI.—Three Bullet Wounds of Limbs.—Corporal —, aged 22, of the West Yorkshire Regiment, received three wounds at Willow Grange on November 23rd. He had been in action for two hours, and was lying on his face firing, when he was hit in the right leg. It was very painful, and he tried to get up to retire, but was unable to stand on his right leg, so he lay down again and went on firing again for another hour, when he was hit in the left leg. He did not feel this very much, and lay quiet. He was then hit in the left shoulder, and the pain of this he compared to having a red-hot iron applied to the part. The Boer fire was so heavy that his comrades had to retire and leave him, and he was captured by the enemy. He stated that the Boers took him to a farmhouse, which they were using as a field hospital. They dressed his wounds and treated him with the greatest kindness, and sent him back to his own lines the next day. He was admitted to the *Nubia* on January 13th, and was able to walk up the gangway with assistance. (1) There were two small cicatrices on the outside of the left calf, the entrance wound being 2 inches below the head of the fibula, and the exit $\frac{3}{4}$ inches distance from the entrance, lower down and slightly anterior. (2) There was small cicatrix in the middle of the inner surface of the leg over the right tibia, and a linear cicatrix an inch above the ankle-joint, between the tibia and the fibula, where the bullet was removed on December 1st. The middle third of the tibia was greatly thickened and painful on pressure. The bullet was bent, and the cupronickel casing torn, forming a jagged fringe. He stated that his right leg

was on a back splint for three weeks, and then in plaster-of-paris for a fortnight. He could not bear the weight of his body on his right leg, and walked with a crutch. (3) There was a small cicatrix in the posterior part of the left deltoid muscle, 1 inch below the acromion, and another small cicatrix in the middle line of the back, between the spines of the fifth and sixth dorsal vertebrae. He was sent to England on February 2nd, as unfit for further service in the present campaign.

CASE XII. Bullet Wound of Humerus.—Private —, aged 32, of the Dublin Fusiliers, was wounded at Colenso on December 15th. He was lying on his face firing, when he was hit in the right arm. He thought at the time his arm had been knocked off. He dropped his rifle, as his arm was useless. The wounds bled profusely, but when the field dressing had been applied he was strong enough to walk two miles to the field hospital. He was admitted to the *Nubia* on January 13th. The wound of entry was represented by a discharging sinus in the middle of the posterior surface of the right upper arm. Some necrosed bone could be felt on probing, and the middle third of the humerus was greatly thickened and painful. The exit wound, situated in the middle of the anterior surface of the upper arm was quite healed. He refused to submit to having the sequestra removed, and was sent to England on February 2nd.

In the above series of cases the term "small cicatrix" has often been used. I see that Mr. Makins compares the cicatrices left after an uncomplicated Mauser bullet wound to the scars resulting from a large acne pustule, and I know of no better comparison.

MEMORANDA:

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

TWIN PREGNANCY WITH CENTRAL PLACENTA PRÆVIA.

A SHORT time ago I was hastily summoned to attend Mrs. W., aged about 40, who had been suddenly seized with very severe hæmorrhage. As she lived about four miles from my house I did not arrive on the scene until about an hour and a half after the messenger had been sent. I found the patient collapsed, almost bloodless, with very weak pulse, and slight pains coming on at regular intervals. On examination the os was found dilated to about the size of half a crown. The bleeding had been most profuse, and still continued with each pain: the whole cervix, as far as I could feel all round, was occupied by placenta, and I could not reach the membranes at any spot. I therefore proceeded to perforate the placenta with my finger, thus giving exit to the liquor amnii, which came away freely. The hæmorrhage, however, still continued with the pains; I therefore introduced my hand carefully into the vagina, and gradually enlarged the opening in the placenta till it admitted my hand, with which I seized a foot, and bringing it down, speedily delivered the woman of a living boy. I then reintroduced my hand through the torn placenta, and delivered her of another living boy in a similar manner. The placenta was expressed about ten minutes afterwards with complete membranes. It was a very large single placenta, with the two cords attached, and had a large hole almost in the centre, through which the children were born. The children were fully developed, and survived. The mother was very weak for a time from loss of blood, but quickly rallied under treatment, and made an uninterrupted recovery.

The interesting point in this case is that the placenta was single and central in position, the large size making it very difficult, if not almost impossible, to separate it, so as to rupture the membranes and perform version. I would like also to draw attention to the ease and rapidity with which the placenta was perforated and version performed with safety to mother and children; for in cases such as these, time is certainly a most important consideration.

Dunmurry, co. Antrim.

DAVID P. GAUSSEN, M.D., M.R.C.S.

A CASE OF URÆMIA CLOSELY SIMULATING CEREBRAL HÆMORRHAGE.

W. T., aged 65, was first seen by me on January 29th about 10 A.M. The history given was that about an hour previously he had been found lying unconscious in the road. He had been dragged into the nearest house by two men, where I found him lying back in an armchair in a semicomatose condition. He was pale, with an irregular pulse of high tension and rate about 60 per minute; the arteries were thickened