ART. XII.—*Two Cases illustrating the advantages of the Antiseptic Treatment of Wounds.* By JOHN K. BARTON, M.D., F.R.C.S.I.; Surgeon to the Adelaide Hospital, &c.

AT the present time, when antiseptic surgery may be said to be on its trial, the following cases will be read with interest. The favourable result in both cases was, it appears to me, due, in a great degree, to the antiseptic method of dressing employed. Every detail, as recommended by Professor Lister, was attended to; and without this no fair trial of this method of treatment is made. I may say here that attention to these details appears much more troublesome in description than they are in practice, and that the daily dressing, under the spray and with the gauze, becomes, after a time, when the surgeon and his assistants have become familiar with it, as quick, and may be accomplished with as little trouble, as any other dressing.

CASE I.—*Amputation at Knee (Cardens).*

J. M'C., twenty-four years of age, was admitted to the Adelaide Hospital upon the 5th of October, 1875, for caries of the bones of the right foot, and for disease of the knee of the same side.

History.—In February, 1873, the outside of the right heel was bruised by walking in a boot which hurt him. An abscess formed, and in the following April a second; both kept discharging all the summer. In October he became a patient in Sir P. Dun's Hospital, and in November Mr. Butcher removed a portion of the os calcis. He left hospital in about six weeks; the wound seems never to have quite healed. He returned to the country, but was unable to rest his weight on the foot. In April, 1875, he, for the first time, felt a pain in the knee of the same side; the knee became the seat of pain and uneasiness. He returned to town, and, as already stated, was admitted into the Adelaide Hospital in October last.

State upon Admission.—The patient is a strumous-looking young man, with red hair and a high complexion, but not very thin. Upon the outside of the right heel there is a deep unhealed wound, through which the probe passes readily down on carious bone, and can be made to go quite through to a sinus which exists in the inner side near the internal malleolus; the heel is the seat of constant pain, and cannot, for even a moment, bear the weight of the body upon it.

Upon the outside of the knee-joint there is an abscess about the size of a large orange, but flattened; the joint itself is pretty free, flexion and extension being performed without uneasiness; the joint can bear pressure anteriorly and on the inside without uneasiness, but upon the outside pressure gives sharp pain; but the weight of the body can be supported by the knees. A careful examination of the chest failed to detect any physical signs of tubercular disease; the urine is healthy; sleep at night is broken, and the appetite uncertain.

The question to be decided here was a difficult one; no doubt the patient was suffering from the presence of the diseased bones of the foot, and it was equally clear that amputation was the only means left to free him from this disease, but amputation of the foot would leave behind disease of the knee, which had already produced abscess; and to include this disease would involve amputation of the thigh, which, considering his general health, seemed full of danger. The course I pursued was:—In the first place I sent him to the Convalescent Home, at Stillorgan, for some weeks, by which I hoped to improve his general health, while the abscess on the outside of the knee was given time to mature. Upon his re-admission, on the 21st of October, I found his appetite and strength improved, while the abscess had come to the surface, and also extended up the thigh; this was then at once freely opened under carbolic spray, well syringed out with carbolic lotion (1 to 30), and dressed with gauze. No inflammation followed, and in about a week the discharge consisted only of a small quantity of thin whey-like fluid. No carious bone could be felt through the opening, but it was evident, from the amount of thickening about the external condyle, that the bone in this situation was the seat of chronic osteitis. Under these circumstances I determined upon amputation above the knee, the objections to which were, that the sac of the abscess extended far up the outside of the thigh, and that the irritable constitution of the patient rendered the operation more than usually hazardous. Upon the morning of the 15th of December the operation was performed. The patient having been placed under the influence of ether, a long anterior flap was cut from the tissues in front of the knee, extending from above the condyles of the femur to the tubercle of the tibia; from this flap, when raised, the patella was removed; the tissues behind were divided by a straight incision; the bone was sawn immediately above the condyles, it was found to be so soft and vascular that it

was thought prudent to take off a little more of it, so the section was a little higher than I originally intended. The parts divided were very vascular, and upon the outside particularly were much infiltrated with a brawny lymph; the bleeding vessels were secured by torsion, except the femoral, which was compressed by Mr. Richardson's "presse artère;" the vein continued to bleed so copiously that another "presse" was placed on it.

The means taken to antisepticise this wound was as follows:—The limb having been shaved the day before the operation, the skin was repeatedly washed with carbolic lotion; the instruments to be used were laid in the lotion for at least half an hour; a copious spray was kept up during the operation; the wound was freely sponged with a solution of chloride of zinc (gr. xx to 3i); the flap was held in its place by stitches of carbolised gut; a drainage tube was placed through the wound, while the whole was enveloped in eight layers of gauze, and secured by a gauze bandage, over which was an ordinary roller. The patient, when placed in bed, got a hypodermic injection of a quarter of a grain of morphia, and passed a quiet time until next day.

16th.—As the gauze was, at its lowest part, soaked through with bloody serum, the stump was dressed under spray, but little inconvenience was felt by the patient; a free discharge of bloody serous fluid came from the wound. The dressing required to be repeated every day for a week; the tube was removed on the third day—the two "presse artères" not until the fifth day. After the end of the first week the dressing was not required oftener than every third or fourth day; and before the end of the third week all dressing, save a piece of lint smeared with carbolic cream, was unnecessary, as the stump was very nearly quite healed. Upon only one occasion, about ten days after the amputation, was there any purulent fluid seen at the dressings, and then but a teaspoonful of light-coloured pus—neither before nor after this was there any pus whilst the antiseptic dressings were employed; when these were laid aside, at once the unhealed part of the wound began to secrete pus abundantly. I have seldom seen a stump go on better, or heal up with healthier action, than this, while, from the irritable constitution of the patient, and the condition of the limb before amputation, there was good reason to expect a very different and less healthy action.

It appears to me to admit of no doubt that the antiseptic treatment effected this desirable result.

CASE II.—*Removal of Lower Knee-joint Cartilage.*

M. F., twenty-two years of age, a blacksmith, was admitted to the Adelaide Hospital upon 27th of November, 1875, suffering from the presence of a loose cartilage in the right knee-joint, which rendered him lame, and unable to follow his trade.

History.—Five years ago, the patient, being then a footman in a gentleman's house in Dublin, suffered from an attack of acute inflammation in the left knee. This seems to have been synovitis. He states that he was confined to bed on account of it for six weeks, during which time he was unable "to lay the foot to the ground." When sufficiently recovered he went to the country, and gradually recovered the use of the joint. He felt no pain or weakness in it until about the middle of last October, when going downstairs, carrying a bucket of water, he felt the knee suddenly become stiff, but experienced no great pain. He sat down, and began to move his knee to "supple it," when he felt a "kernel" slip out from between the bones. When he first perceived it, it was on the inner side of the patella; in the course of a few minutes it slipped up along the side of the patella, and passed into the *cul-de-sac*, under the quadriceps extensor tendon. When he walked he felt the body slipping from one side to the other.

When admitted to hospital the loose body was easily pressed to the outside of the rectus tendon, and down to the outside of the joint, from which it readily slipped back under the condyles. It felt flat, about the size of the last joint of the middle finger, but not so thick.

A few days after his admission I proceeded to attempt the removal of the loose cartilage by Symes' or the subcutaneous method. Having well isolated the body to the outside of the joint, I introduced a tenotomy knife from above obliquely downwards, and cut on the cartilage, thus dividing the synovial sac; the body was then pressed outwards, to force it through the opening thus made and get it into the areolar tissue. I seemed to have succeeded, as after the withdrawal of the knife the loose body occupied a position nearer to the outside than before. A few drops of synovia escaped along the puncture. The loose body was kept in its new position by a pad and bandage; a splint was placed behind the joint, and the patient confined to bed. A day or two afterwards, the body occupying the same position, a blister was put on over it, according to Mr. Symes' advice, but all to no

purpose. In a few days, before the patient had left his bed, the wanderer was again back in the joint as free as before. This operation was repeated upon two subsequent occasions, with the same negative result.

Under these circumstances I determined to cut down upon the loose cartilage, and remove it at once from the joint, under the protecting power of the antiseptic spray and dressing.

Accordingly, upon the 5th of January, the patient having been prepared by the shaving of the skin over the joint and the free washing with carbolic lotion, I isolated the body at the outside of the joint, and, under a copious spray of carbolic acid, cut down upon and removed it. Two sutures of carbolised gut held the lips of the wound together; a piece of gutta-percha tissue lay over this; and then the joint was surrounded with eight layers of gauze, securely fastened round its edges with adhesive plaster and bandages. The limb was placed in M'Intyre's splint, and the patient removed to bed.

The cartilage was the largest I have ever seen of this kind. As seen in the accompanying woodcut, one surface was smooth and polished, while the other was puckered and indented, although superficially smoothed by friction. This seems to have been its surface of attachment, from which it was gradually loosened by the motion of the joint, and finally liberated, upon the occasion of the patient carrying a heavy weight downstairs, when the strain on the joint was very great. Under the microscope the body was seen to be made up of closely-packed cartilage cells. Neither Professor Bennett, who kindly examined the specimen, nor I, could see any earthy deposit in it.

The dressing was not removed until the third day, the patient during this time being quite free from pain, his pulse being quiet, and his temperature normal. Upon the third day the dressings were changed under carbolic spray; there was a little reddish serum