trembling, she had expelled a copious stool, mixed with at least half a pint of clotted blood.*

I may end this brief report by alluding to one characteristic of the gastric ulcer in the aged, which is too important to pass unnoticed: namely, its comparatively little risk of perforation. In the pathological Essay I have already cited, I have adduced reasons for the conclusion, that the general liability to perforation undergoes a constant decrease as life advances, even although the liability to the ulcer itself is just as constantly on the increase. "The amount of these converse alterations of risk, we may regard as equal; and as being such, that from the age of 30 to that of 70, the risk of gastric ulcer gradually rises to double, while the risk of perforation from gastric ulcer gradually sinks to one-half, its former amount."

To this estimate I may add one which was inadvertently omitted in the Essay referred to, and which better illustrates the liability of the ulcer to perforate at different ages. Comparing the numbers of ulcers and of perforations in the two sexes indifferently, it would seem that, between the ages of 10 and 30, the proportion of perforations is that of two in every five ulcers; from 30 to 50, one in six; from 50 to 70, one in ten; and from 70 to 90, one in twenty-one ulcers only.

Brook Street, Grosvenor Square, April 29th, 1886.

BRISTOL GENERAL HOSPITAL.

CASE OF EXCISION OF THE KNEE-JOINT: RECOVERY.

By R. W. COE, Esq., F.R.C.S.E., Surgeon to the Hospital.

[Read at the Meeting of the Bath and Bristol Branch, April 24th, 1886.]

CASE. Edward Carter, aged 6 years, the child of a labouring man living at Hilsley, was admitted, January 22nd, 1886, into the Bristol General Hospital, under my care, for an affection of the right knee: he was of a light complexion, with fair hair and blue eyes, and presented a decidedly strumous appearance.

I gleaned the following history from his mother:—Early in last June the boy was exposed to violent rain, and got very wet; but as soon as he reached home he was stripped, and placed in a warm bed. On the following evening, he complained of great pain in the toes of his right foot, saying they ached very much. By the next morning, the whole limb was swollen. She then took him to consult a gentleman at Upton. I could make but little more from the mother's account, but that the limb continued swollen, especially about the knee; that the boy used to keep the leg extended, and shrieked violently when it was touched; and that about two months prior to my seeing the child, a small opening had formed, which discharged matter.

On examining the joint, I found it distended with fluid, but not very painful; and on its lower and inner aspect, immediately over the internal tuberosity of the tibia, was a small opening, which led deeply down into the head of the tibia, close to the joint, but not communicating with it. The boy was sent to bed, the limb was placed on a straight splint, and wet lint covered with oiled silk applied to the joint. He went on, with little change, until the beginning of February, when the joint became more swollen and painful, with a good deal of constitutional disturbance. With the concurrence of my colleagues, I determined to attempt to gouge out the diseased portion of the head of the tibia, and failing that, to excise the joint.

February 9th. The child being placed under the influence of chloroform, I had him taken into the operating theatre; I then made two incisions, each beginning at the

orifice of the sinus, and carried the one downwards and outwards, the other downwards and inwards, so as to form a triangular flap with the base below: this I raised from the bone, and I was then enabled to examine the condition of the parts more thoroughly than I had previously succeeded in doing, when I found that the channel in the bone led right across the head of the tibia backwards and outwards to its posterior part, and ran so near the joint as to render it quite impossible to succeed in removing the diseased bone without injury to the joint itself; in fact, it was just a question whether or no the constitutional disturbance might not be owing to a minute opening already established. It must be borne in mind also, as a reason for foregoing any further proceeding in this direction, that the opening itself of this sinus was situated almost immediately beneath the reflection of the synovial membrane over the outer edge of the internal semilunar cartilage, so that I was very trammelled as regards the room I could obtain. My incisions were necessarily obliged to be in a downward direction, to avoid opening the joint. The course to be pursued was then left to my own discretion, when I determined to at once excise the joint, reasoning in this manner:—

The existing irritation is very great, and probably due to a communication having been established between the sinus and the joint, and may possibly (however produced) prove fatal, if recourse be only had to palliatory measures. Even if these should succeed in subduing the present disturbance, the boy will be liable at any moment to a recurrence of the attack, besides having, under the most favourable circumstances, to bear up against a chronic disease of the bone and joint, which, let it terminate as happily as it may, will in all probability produce an ankylosed knee-joint; and this only after a lapse of months, perhaps years, besides being conjoined with much suffering; whilst by laying open the joint and excising the diseased bone, I shall at once relieve the existing irritation, and by removing its cause shall prevent its recurrence.

In performing the operation, I departed in some degree from the ordinary plans. I made a semilunar incision, beginning at the outer side of the joint, and carried it round above the patella to the inside; there was thus a semilunar flap formed, which fell down over the head of the tibia. The joint was acutely inflamed, the loose synovial membrane much thickened, and a considerable quantity of coagulated lymph lay in the various recesses, as it were, of the joint. On passing a probe through the sinus it made its appearance in the joint, underneath the back part of the external semilunar cartilage. I then removed half an inch or a little more of the femur, and a quarter of an inch of the tibia; when there was exposed the track of the sinus, and a small cavity filled with soft gelatiniform granulations. Instead of taking off so much of the tibia as to include all this on the resection, I gouged out the diseased part, leaving, as far as I could judge, nothing but healthy tissue behind; as this would have left a cavity, in which the secretions would have collected, and probably hindered union taking place, I cut a triangular piece out of the inner side of the head of the tibia in the situation of the original opening, and thus established a channel by which the secretions, if any, could drain away. After paring away the synovial membrane from the back part of the patella, the trochlea, and back part of the condyles of the femur, the parts were brought together by sutures, and the limb placed on a splint made purposely for it.

Feb. 10th. The splint was found not to answer, and he was moved on to an ordinary swinging splint.

His subsequent history may be summed up in a few words. For two days he was profoundly affected by the shock of the operation: he lay quite still with a pale pinched-up face and rapid weak pulse, with little or no inclination for food. On the third day he began to brighten up, and then progressed towards recovery very rapidly, hardly presenting a single drawback.

I had occasion about three weeks after the operation to let out a collection of healthy pus, which had formed in

* An instance was lately brought under my notice, in which a gentleman, of about 80 years of age, who had been healthy through the previous part of his life, but had for the last two years suffered from symptoms regarded as dyspeptic, died suddenly of copious hæmatemesis. The necropsy showed that the bleeding came from an artery (probably the coronary) eroded by an ulcer of the stomach.

the neighbourhood of the ligamentum patellæ; the walls of the abscess united almost immediately after all the pus had escaped, and from February 9th to this present date, April 24th, he has had but one dose of physic.

R. Hydr. cum cretâ gr. ij; pulv. scam. co. gr. vi; pulv. rhei gr. iv. M. Fiat pulvis horâ somni sumendus.

By the end of the eighth week he was able to move freely about in bed. By the end of the ninth week he could get about the ward on his crutches. Before the end of the tenth week he could bear his weight on the affected leg and use it in going about the ward. On taking off the starched bandage, April 15th, a very minute opening was still found to remain in the situation from where I had removed the triangular piece of bone, but it had discharged in ten days only enough to form a small scab over it.

April 21st. The sinuses seemed closed.

April 24th (that is to-day), the boy may be pronounced well; the parts appear to be soundly healed, he gets about easily by means of his crutches, and would bear a good deal of his weight on the affected limb if he were allowed to do so. Of his present condition, and the probability of his possessing a useful limb, I will leave you to judge, as I have him here for your inspection.

I should not, however, have brought the case before you so early were it not that this will be the only opportunity I may have of showing the patient to you, as I am anxious to send the child out of the hospital into the fresh country air, to which he has been always accustomed, and I may not be able to ensure his attendance at a future time.

REMARKS. The fact of my performing the operation sufficiently proves that I considered excision of the knee-joint a most legitimate procedure, and the result I have obtained certainly does not tend to diminish my opinion of its propriety. Indeed, from a consideration of this case, I am inclined to believe that it should be employed much earlier in the cases ordinarily chosen for it than is at present customary; also, that acute inflammation and violent constitutional disturbance should not be esteemed hindrances to, but rather arguments for the operation, provided a source of irritation be present which can be got rid of; and finally, that in cases of wounds of the knee-joint, accompanied with suppuration into the synovial sac, instead of having recourse merely to incisions, it would be better practice to at once lay open the joint and excise the ends of the bones, thus saving a prolonged suppuration, which, after trying the constitution to the uttermost, can only eventuate in a stiffened limb, which is not so serviceable when of its natural length, as when shortened a little by the extremities of the femur and tibia being removed. In the former case, the patient in walking is obliged to throw himself over on the sound side, and swing his stiff leg round like a person suffering from hemiplegia, besides being continually liable to trip and fall down; whilst in the latter (care being taken not to remove too much bone), the stiff limb can be swung backwards and forwards over the surface of the ground, the toes just escaping contact with it during the movement; there is thus less liability to trip, and there is less peculiarity in the gait of the patient. Besides, in excision, the recovery, in the majority of cases, would be much more rapid.

During the treatment of this case, I had an opportunity of watching the progress of a patient who was under the care of my friend Mr. Godfrey, and suffering from a gunshot wound of the knee-joint, who was treated by free incisions into the joint, and who ultimately recovered with a stiff knee. But when I remember the great constitutional disturbance, the prolonged suppuration, the imminent danger the patient ran, and the final inconvenience resulting from a stiffened leg of the natural length, I am inclined, as far as a conclusion can be drawn from the comparison of so few instances, to regard very favourably indeed the idea of not only freely opening the joint in cases of injury exposing its cavity, but also, in addition, of excising the cartilaginous extremities of the large bones entering into its composition; as I believe, by so doing, the constitutional disturbance will be less at first, and the sys-

tem not so much taxed during the progress of the case, as well as the recovery made more rapid, and the result more satisfactory.

On inspecting the excised parts, the extremity of the femur was found to be quite healthy, but that of the tibia to contain the upper half of the cavity of an abscess which had opened externally by means of the sinus already spoken of, and into the cavity of the joint by an opening situated underneath the external semilunar cartilage, this latter opening having been the cause of the great constitutional disturbance.

Original Communications.

CLINICAL OBSERVATIONS UPON CASES OF HERNIA.

By J. W. KEYWORTH, M.B., etc.

[Read before the Birmingham and Midland Counties Branch, April 10th, 1856.]

I HAVE selected three cases of hernia as illustrating certain circumstances attending this disease which are of importance in guiding us in the course of treatment that we have to adopt, because upon that course must depend the prosperous or adverse issue of the case—the life or death of the patient.

CASE I. The first of them is interesting from the fact that the individual was the subject of double hernia; that nature had once successfully acted the part of the surgeon; and that an operation was twice necessary.

On the 8th of May, I was called to Mrs. Boucher, living at Aston. She was 56 years of age, a healthy, but rather feeble woman, of spare habit, and the mother of several children. When a young woman, living in service, she became the subject of inguinal hernia on the right side. For this she wore a truss for some years, but eventually neglected to do so; and the hernia, as often as it protruded, was reduced by her own efforts. In the year 1839, the hernia became strangulated, and continued in this condition for four days. She was then taken to the Birmingham General Hospital, but the hernia receded as she was being prepared for operation. The injury, however, which the intestine had sustained from this lengthened compression, and from the manipulation which had been employed, was such that adhesion took place between the intestine and the abdominal parietes. Suppuration followed, and eventually an artificial anus was formed in the groin, and the feces were presently discharged exclusively by this aperture. The opening in the bowel appears to have been high up in the intestinal canal; for extreme debility and emaciation were the result, and the patient was confined to her bed for two years. But gradually the new opening contracted; the feces began to resume their natural course; and, towards the close of the two years, the opening became entirely obliterated. Sixteen years afterwards, there remained only a depressed scar in the right groin, marking the site of the former opening.

In the winter of 1843, she was one night attacked with pain in the bowels, succeeded by vomiting; and on the following morning, while going down stairs, she felt something give way in her bowels, and a femoral hernia suddenly formed on the left side. She endeavoured to reduce the protrusion, but desisted on account of pain which it gave her. The severe pain extended over the whole abdomen, which became tender, and vomiting of bilious (but not fecal) matter took place repeatedly. Twenty-four hours after the occurrence, she was seen by Dr. Russell, to whose notes I am indebted for this part of the history. The rupture was then very firm, half as large as a hen's egg, and tender. She was now the mother of several children, and was the subject also of prolapsus uteri. Manual efforts were employed without success, and the warm bath was also used unavailingly. The vomiting,