But then came another question, which had to be considered at the time. If the artery were tied, it what place would it be best to apply a ligature? Now, you see this question involved the consideration of one of the most important principles of surgery. I need not tell you that, in tying an artery for the cure of an aneurism in what is now the ordinary way, as in the operation of Hunter, the ligature is placed on the vessel at some distance from the sac; and thus, while the direct current of blood is still cut off from the sac to an extent usually sufficient to cure the disease, the artery itself is injured by the operation at a spot where it is far less likely to be diseased or impaired than close to the aneurism; and hence the chance of its repair is proportionately greater. Now, had I been guided simply by these considerations, I ought to have tied the anterior tibial artery somewhere above the ankle-joint—say in the lower third of the leg; but then there were two important facts in the present case which had to be brought into the question. I have already given reasons for the belief that the aneurism here arose from injury rather than from disease. As I have said, I had every reason to believe that the rest of the artery was fairly healthy. Again, while pressure with the finger afforded proof that pulsation of the sac was controlled by arresting the stream in the artery just above, I could by no means be sure that ligature of the artery some inches higher up would be as efficient or even nearly so; for, as you all know very well, the farther we go from the heart outwards, the more ample is the collateral circulation in relation to the main trunks; and, as a matter of fact, had I tied the artery above the ankle in the leg, I must have had branches of importance between my ligature and the aneurism. Therefore the principles which are usually paramount elsewhere—as, for instance, in popliteal aneurism—were not in force here.

Well, then, fourteen days after admission, we began with compression. Pressure by means of a pad adequately supported, and sufficiently great to arrest its pulsation, was applied to the artery on the dorsum; and pressure tolerably firm, but equable, was applied also over the tumour through a thin layer of cotton-wool. This was kept up for several hours on more than one occasion, but not without discomfort to the patient, which gradually increased, and worried him so much that at length he begged earnestly for some change of plan. Indeed, the integument over the sac had become somewhat congested. Very soon after the pressure was removed, the tumour appeared unchanged, and, as the man expressed it, jumped as much as ever.

On May 1st, the fracture was found to be firmly united; the splints were removed, and the leg supported by a stiff bandage. Then, on the 11th, about a month after the trial of pressure, we tied the dorsal artery with an ordinary silk thread about an inch and a half or two inches above the upper margin of the aneurism. Immediately upon tightening the ligature, there was total arrest of pulsation in the tumour, and the sac became flaccid and soon shrank. All was quiet there for two or three minutes; but then the very feeblest pulsation in the tumour could be both seen and felt. The edges of the wound were brought carefully together by two sutures, and covered with oiled lint; a small pad of cotton-wool was placed over the aneurism, and the whole foot was lightly enveloped in a flannel bandage. It seems to me that the return of this feeble pulsation in the sac so soon after the application of a ligature is an interesting fact. How did the blood find its way to the tumour in sufficient force for this purpose? Was it through the tarsal or even the metatarsal branch which might intervene between the ligature and the tumour; or was it by a regurgitant stream supplied through the external plantar? I cannot be sure; but, as all this pulsation was arrested by slight pressure upon the distal extremity of the tumour, I suspect that the latter was the chief, if not sole, source of it.

But the next day the tumour was quite pulseless, and on the next it had shrunk so much that its prominence was hardly visible. From this time, it gradually subsided. For several days, it could be felt as a small firm nodule, hardly perceptible to sight, but easily defined by touch. The wound went on uninterruptedly well; it closed by direct union, except in its centre, where the double thread passed out. The ligature came away on the nineteenth day, and in two days afterwards the small channel it maintained was closed too. The man left the hospital on June 2nd, three weeks from the operation; and, after a holiday of six weeks at our convalescent home, the tumour was no longer visible, and could hardly be felt.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The fourth meeting of the twenty-second session was held at the Royal Kent Dispensary, Greenwich Road, on Friday, January 4th, at 8 P.M.: W. Johnson Smith, F.R.C.S. (President), in the Chair. Dr. J. Milner Fothergill read a paper on "Some Conditions which Simulate Organic Disease of the Heart".

FOREIGN BODIES IN THE MEATUS.

By H. MACNAUGHTON JONES, M.D., F.R.C.S.I. & Edin.,
Surgeon to the Cork Ophthalmic and Aural Hospital.

FROM time to time, it has occurred to me to see considerable damage done by rash and persistent efforts to extract foreign bodies from the auditory canal. The late Mr. Hinton has used the expression "aural surgery is simply surgical common sense, and needs comparatively little insistence on special points beyond that which a trained surgical instinct would suggest". "Common sense" and "surgical instinct" appear alike to be blunted when, with a remarkable absence of both, persons are yet to be found who can be rash enough to employ clumsy force and ill-contrived instruments in the removal of what often is, even after a prolonged residence, a comparatively harmless tenant from the external meatus. I would say a few words for common sense and surgical instinct, such as anatomical knowledge might suggest to anyone who pauses to reflect on the form and design of the external passage of the human ear. In the *child*, the meatus is remarkably narrow; it is mainly cartilaginous; it is often congenitally contracted; its skin-lining is directly continuous with the membrana tympani, and is intimately connected with the periosteum of the temporal bone; it is close to the dura mater, and closer still when gaps occur in the osseous canal. In the *adult*, the canal is more spiral, the osseous portion is proportionately larger; but the entire passage may be described as a coiled tube, about one inch in length, consisting of two portions, situated almost at an obtuse angle to each other, the junction of the two being marked by a peculiar contraction, any further closure of which, in consequence of inflammation or thickening, completely shuts off the bony internal pouch from the external funnel. Two things are at once evident from these simple considerations of the anatomy of the passage: first, that the direction of any extracting or expelling force must depend on the portion of the canal in which it is applied; secondly, that, having in view secondary consequences, and also the effect which inflammation has in frustrating our effort to remove a foreign body from the passage, we should employ no force which is in the least calculated to excite that inflammation. The greater the swelling of the epidermis with subcutaneous cellular effusion, and it may be perioritis, the greater the jamming the foreign body, whatever it is, gets. If it be hard and angular, this is more likely to occur than if it be smooth and round. If it be pushed into the pouch in front of the membrane, and the latter be contused in attempts to catch it, the more likely are we to have inflammation of the membrane and resulting perforation, with tympanic mischief. If the canal become so swollen that the foreign body cannot be seen, and its removal be still attempted, then the effects of this "groping in the dark" are more disastrous: further inflammatory mischief and tighter jamming. Now, what is it that, in the large proportion of cases, fixes foreign bodies in the ear?—attempts at removal. If the body do not occupy the calibre of the canal, it lies in it, and there is a space for the expelling force to be directed from behind on to it. If it be so large as to fill the entire calibre of the passage, which is rarely the case, it will, previously to being interfered with, in all probability lie loosely in the passage, its further entrance being arrested by the contraction of the wall. In my experience, the most frequent seat of the arrest of a foreign body is at the junction of the cartilaginous and osseous portions of the meatus. It becomes *arrested* here, or is driven beyond against the membrane by extractive efforts. Every touch of an instrument, no matter how gentle, sends it further in: each forcible effort tends to further *impaction*. Of course, there are some bodies so small and so shaped that it is a matter of no difficulty to catch them with a forceps and withdraw them. But I think it may be laid down as an axiom in aural surgery that, in the case of any arrested body in the meatus, where any space exists between the foreign substance and the wall of the meatus, the only agent which should be employed is water. If the body be impacted, or if it completely occlude the canal, much will depend on the nature of the body, its shape, the material of which it is composed, the length of time it is lodged, the presence or absence of inflammation, the kind of instrument at hand. It is my conviction that, in all recent cases, those quickly brought to the surgeon, syringing is the best means to adopt; in all cases where inflammation is not present, no matter how long the body lies lodged, syringing is also the best means; and, in cases where inflammation is present, I prefer, as a rule, to wait, using means to subdue it, with gentle syringing daily; and, if patience only be exercised, success in the end is almost certain. I prefer to make no remark here as to instruments. The instrument suited for one occupant of the canal will be found valueless for another. The shape and the

position of the foreign body are the two things which must be considered in the employment of any instrument. To avoid all force is the rule, never to be violated, let the circumstances of the case be ever so tempting.

I now desire to quote the following few cases out of many constantly occurring to me in hospital and private practice, which bear on the foregoing remarks.

Some years since, a child was brought to me with a shell in the meatus, where it was quite visible. It was one of those small yellow shells common on the beach. The convex surface was directed outwards. It completely filled the meatus, and was jammed in the contracted portion. Many attempts had been made to remove it, but all resulted in driving it further in, and its smooth surface rendered it impossible to catch it. I advised patience and syringing. There were both pain and inflammation when I saw the ear. Some catarrhal discharge subsequently formed. The ear was syringed daily. In about three weeks from the time I saw the case, the unwelcome guest suddenly came out while the ear was being syringed.

A gentleman was tickling his ear with a programme-pencil while at a ball. In doing so, the bone-top of the pencil remained in the ear. He fancied that he afterwards heard it fall out. Feeling, however, uncomfortable the next day, he sought advice, and the practitioner whom he consulted thought he saw the white flat surface of the bone-cap. Several efforts to seize it were made, giving him great pain. On the following day, these were repeated. The passage now became swollen and painful, and another surgeon was consulted, who, without expressing any opinion as to the presence or absence of the foreign body, wisely abstained from all interference, and directed simple washing out of the ear, and leeches to subdue the inflammation. After some days, I saw the patient. I found the passage contracted by the inflammation, so much so that no speculum could be inserted; there were considerable pain and complete deafness. However, with the otoscope and Politzer's bag, I satisfied myself that the probability was against the presence of a foreign body; but there was evidently a considerable perforation of the membrane. With care and treatment, he ultimately recovered, hearing the watch before he left me at twelve inches; but there has remained a permanent perforation in the membrane. This case was all the more serious, as the hearing in the other ear was impaired from childhood.

Some months since, a child was sent to me from the country by two medical gentlemen, with a glass bead in the ear. The bead was blue, diamond-shaped, and was taken from one of those "surprise packages" of sweets which are sold to children. The bead was in for several days, and resisted all attempts at extraction and syringing. The child was very restless, so I put her under the influence of chloroform and tried syringing, but in vain. The smooth, diamond-cut, conical end of the bead was turned out, and it was fixed in the passage. Keeping the child well under chloroform, with Dr. Grattan's assistance, I passed the sharp curved edge of a Crichtett's cataract-scoop over the margin of the bead, between it and the wall of the meatus; I then was able to slightly turn it on its own axis. This gave me room to pass a loop of silver wire over the margin of the bead (as originally recommended by Mr. Hutchinson) and obtain a grip of it. But, after two or three efforts, the wire broke each time, and there was not room to pass a stronger wire behind the body. I, however, succeeded in getting a double loop of the thin wire over the edge, and finally brought it away. Some years since, a child was sent to me by Dr. Cummins of Cork with a spherical glass bead in the meatus, which completely filled the calibre of the canal. I thought that forcible syringing might, in this instance, by driving the body further in, do more harm than good; and, as the bead appeared not to be firmly impacted, and was not long in the passage, I thought of Brunel's plan for the coin in his larynx. Accordingly, I turned the child on her side, with the affected ear down, and, with assistance, while in this position, I placed the fleshy part of the thumb of my right hand (the body was in the left ear) over the opposite ear, the fingers being extended on the head, the inner side of the palm of the hand thus came above the auricle, on the temporal and parietal bones; by giving a few sudden jerks to the head in this position with the inner side of the hand, the bead dropped out.

A child was brought to me with a piece of chalk, which she had wedged into the passage. Efforts had been made to extract it. The chalk had been partly broken down with the forceps, and there was no space possibly available to pass any instrument behind the mass. I scraped away with a sharp scoop as much as possible of the chalk from the upper wall of the meatus, washing the debris away with a syringe. I then persevered in properly directed syringing, and the mass came away under chloroform. Lately, I had a very obstinate case. A child with a smooth stone, rather angular in shape, was

brought to the hospital; the stone was inside the contracted portion of the canal. I tried syringing without avail. The stone, though it was not possible to get any extracting instrument between it and the wall of the meatus, was movable. I determined to wait and syringe. The child was troublesome. Several times, I got him under chloroform and examined the stone with a fine probe and good light carefully. I tried to catch it with cobbler's wax, but it would not come. I made an effort to fit the spoon behind it, but failed. It only went further in. Some inflammation setting in in the meatus, and discharge appearing, I desisted from all efforts, and merely had the ear washed out with warm water daily, filling the meatus each time with glycerine. By degrees, the stone worked its way out, until it was about half way through the narrow part of the canal. I was now tempted to try and get a wire behind it; it only pushed the stone back. I, therefore, determined to do nothing but syringe. Some discharge continued. At the end of three weeks, the stone came away. There was slight catarrh of the passage; but the membrane was not affected, and the child recovered with perfect hearing.

Having thus given the brief details of a few obstinate and difficult cases, I will conclude by quoting these remarks of Hinton and Trötsch on this subject. The former says: "I must be pardoned for speaking earnestly on this point. Even to this day, it remains the fact that ears are thus destroyed without shadow of reason or excuse, and not by careless and incompetent persons alone. I believe it may be laid down as a rule that, whenever an instrument will succeed, syringing would also succeed; and that, when proper syringing will not succeed, all instruments are full of danger; if had recourse to before violence has been used, would probably, in all cases, remove the offending body in ample time to prevent mischief." "Injuries", says Trötsch, "are frequently inflicted on the soft parts of the meatus by patients with itching in the ear by means of knitting-needles or sharp metal ear-picks; graver and more serious frequently prove those contused and lacerated wounds of the meatus, inflicted by a professional hand, in attempting the removal of foreign bodies, even in those cases in which most harmless intruders, as morsels of bread and paper, are concerned. On such occasions, the instrumental foreign bodies are generally the chief part of the evil."

UNUNITED FRACTURE OF THE FEMUR CURED BY OPERATION.*

By REGINALD HARRISON, F.R.C.S.Eng.,
Surgeon to the Royal Infirmary, Liverpool.

A CASE of ununited fracture of the femur, which has recently been under treatment in my ward at the Liverpool Royal Infirmary, presents, I think, sufficient features of interest, if not of novelty, as to render it worthy of record here. In bringing this case under notice, I do not claim any originality in treatment; I have merely applied those principles, although perhaps in a somewhat unusual manner, which are generally recognised in the management of this class of cases.

Austin Zinc, a seaman, aged 26, was admitted into the Infirmary, under my care, on July 26th, 1875. From the patient's history, it appears that, on April 18th previously, whilst at sea, he was struck by the sea in a gale and thrown violently against the side of the ship. It was found that he had sustained a fracture of the thigh. The captain of the ship put a long splint on him, and he was treated as well as circumstances would permit. He was subsequently placed on a steamship for conveyance to England, where he had the benefit of the attendance of the surgeon of the ship, who appears to have done the best to obtain union.

On his arrival in England, on July 23rd, it was found that no union whatever had taken place, and he was consequently transferred to the Infirmary at Liverpool for further treatment.

Upon examination, I had no difficulty in finding a fracture of the femur at about the junction of the upper with the middle third. The fracture was oblique, and the ends were widely separated, the upper fragment being readily felt beneath the skin in front, whilst the lower fragment was deeply embedded amongst the hamstring muscles. There were two inches and three-quarters of shortening. There was no union whatever.

The limb was placed on a splint after friction had been employed, and was kept absolutely at rest for some weeks. Other means were resorted to, including the introduction of a tenotomy-knife to the end of the bone, violent percussion, and friction, but all without avail. No

* Read in the Section of Surgery at the Annual Meeting of the British Medical Association in Manchester, August 1877.