point corresponding with the opening in the vein. The wall of the vein appeared thin, and the tear extended almost across it, so that no attempt to suture it would have been of any use. Ligatures were applied above and below the opening, and the axilla cleared of clot. The wound was closed with silk sutures, the muscles being reunited.

It was considered that in the patient's then condition, an amputation through the arm high up would have proved fatal, and that the better course was to wait until she had recovered from the shock, and there was some indication of the extent of the gangrene which was inevitable.

By December 8th a line of demarcation had formed below the elbow, the hand and forearm being dry and shrivelled; and on this date circular amputation of the arm was performed through the middle of the humerus. No Esmarch's bandage was applied and the only vessel requiring ligature was the superior profunda artery. She did not rally well after this operation, and on December 20th she complained of much pain in the right leg, which was colder than the left and tender to the touch. There was also considerable oedema of the left leg. Dry gangrene of the right leg gradually developed and spread up to the knee.

A similar condition began on the left side, but did not extend.

She suffered much pain in the right leg, and for several days before January 26th, 1909, when she died, it was necessary to give her morphine constantly to relieve it.

At the necropsy there was thrombosis of the popliteal vessels on the right side, and considerable atheroma of the arteries generally. The kidneys were contracted and granular. The left axillary artery was thrombosed, but the coats were not ruptured.

This case is important from a medico-legal aspect, as it shows the extent of the damage which may be inflicted by the dislocated head of the humerus in a patient with atheromatous arteries. There was here no question of injury by the house-surgeon during reduction, and the method of manipulation used was that of Kocher, which is regarded by Stimson¹ as the method of all others best calculated to avoid any risk of injury to the main vessels during the process of reduction. No anaesthetic was used nor was the reduction difficult. In the series of cases collected by Stimson, 44 in number, in only 4 had the axillary vein given way; in the remainder it was the artery or one of its branches. The formation of a thrombus in the axillary artery, with or without injury to the vein, had not apparently been recorded in surgical literature.

REFERENCE.
¹ *Annals of Surgery*, 1885, vol. ii.

SURGICAL CONSIDERATIONS CONNECTED WITH THE ANATOMY OF THE MAXILLARY SINUS.

By A. S. UNDERWOOD, M.R.C.S.Eng., L.D.S.

SINCE the publication of my results in this direction last autumn¹ I have had opportunities of greatly extending those observations. The examination of a very large number of skulls of very varying races and of individuals of every age has left no doubt whatever in my mind that the normal relation of the antral floor to the roots of the teeth is what I then described.

The accompanying figure shows one important fact which has some bearing upon the value of transillumination as a means of diagnosis. If the apices of the roots of the cheek teeth terminated below the antral floor or even protruded a little way into it, transillumination might show a darkness where a small amount of pus was collected in one of the basins between two septa; but if the roots of the molar teeth are embedded in the walls of the cavity, the buccal roots in the outer wall and the palatine root in the inner wall, the thickening of these regions would entirely prevent any transillumination, and the deep pocket of the antral floor descending between these roots might contain things quite undemonstrable by transillumination.

An x-ray photograph, on the other hand, shows such a condition fairly clearly. I have a photograph before me now of a right and left antrum—the right quite clear, the left obviously obscured in relation to the roots of a second or third molar. This left antrum had been pronounced quite normal after transillumination by two authorities.

The next point I wish to dwell upon is the fact that the third and second and first molars in order are most commonly in relation to the sinus, the third molar invariably. Further, the cavity extends a little behind the third molar roots. In the case alluded to above, all the teeth in front of the second molar had been sacrificed as far as and including the lateral, but the second and third molars had been left; their removal later produced a marked result.

I do not wish to suggest that teeth are very often the cause of antral trouble, I do not think they are; but when they are, the third, second, and first molars should be suspected in order, for the third molar is by far the most common offender.

The third point of surgical interest is that the bony septa which divide the part of the sinus embraced by the roots of the third molar from the part in relation with the second molar is generally a simple septum of bone, whereas the septa which are in relation to the front portion of the

cavity are very often traversed at their upper edge by canals in the bone, sometimes closed, sometimes partially open, which convey nerves and vessels across the cavity. I believe that surgeons who are in the habit of doing radical operations on the sinus from a large opening in front (Caldwell-Luc) do occasionally see nervous symptoms ensue consequent upon the breaking down of these septa; if so, these canals, which have not, as far as I know, been described before, may afford a clue to the cause.

The fourth point is that in very rare instances the whole of the third molar region of the sinus is entirely shut off from the rest of the sinus except for an insignificant hole very high up on the nasal side. I have only observed three such cases in the dried skull, but such a condition would in life be very misleading since it looks absolutely like the posterior wall of the sinus, while at the same time there may be a large pus-filled cavity behind it.

I have met with two cases in which the ethmoidal cells extended across the upper third of the maxillary sinus so as entirely to shut off a cavity above it, a cavity which looked at first sight like an attic chamber to the sinus itself.

REFERENCE.
¹ *BRITISH MEDICAL JOURNAL*, 1908, vol. ii, p. 463.

THE newly-founded German Infant Protection Association will hold its first annual meeting at Dresden on June 19th, at the same time as the first congress for the protection of nurslings.

ON the initiative of the Belgian Minister for Foreign Affairs, six lazarettos for patients suffering from sleeping sickness have been established in the Congo State. They will be under the direction of Belgian medical men.