X-RAY REPORTS.

By G. E. RICHARDS, M.B.
Radiologist.
Royal Army Medical Corps.

After experimenting with various forms of reports and methods of reporting and recording X-ray findings to the surgeons in charge of cases both in civil life and during the present War, the following has been adopted, and is now in use in this hospital. It may be recommended as providing the surgeon immediately with a graphic representation of the condition reported upon, particularly in the case of fractures; is devoid of many of the disadvantages of the ordinary contact print, and saves him and the X-ray operator the necessity of a visit to the department to inspect plates just in the middle of a busy morning's work. It also provides a record of the injury, becomes incorporated as a part of the case history, and follows the patient wherever he goes.

The advantages claimed are: (1) Clearness of definition—the print having all the detail of the original plate, and being free from the heavy shadows of the plate, is often more easily interpreted by one not expert in this work. (2) The image is direct, not reversed, as is the case in a contact print (the plate being placed in the apparatus, film side out) (3) Bones and soft tissues are shown as the darker shadows, thus more nearly conforming to the ordinary conception of these structures.

As soon as the plate is out of the fixing solution, and washed slightly, a reduction-print is made on bromide paper to any size desired; in our work we use a standard lantern-slide, size 3¼ inches square. The print, having been developed and fixed, is washed immediately, dried in spirit, and the report with print attached is sent out the same afternoon. If time permits, prints may be finished on a ferrotype plate, and will then be ready by next morning at latest.

The method has been found quite satisfactory, not cumbersome in operation, and has been favourably reported upon by the surgeons on the staff of this hospital. I therefore feel justified in putting forward the suggestion for more general use, both in military and civil work, as a convenient means of keeping a permanent record of cases in small space and easily available form.

The process of reduction need not involve an elaborate apparatus. All that is required is a light-proof box, at one end of which is fitted a lens and shutter—easily improvised from any ordinary second-hand camera—the other end being provided with a plate-holder capable of adjustment to varying focal distances. Mounted in front of the lens is a light-proof tunnel (it does not require to be absolutely light-proof) sloping up to a frame the size of the X-ray plate. To reduce from an 8-inch by 10-inch plate to a 3½-inch, the length of the tunnel will be about 18 inches, depending upon the focal length of the particular lens being

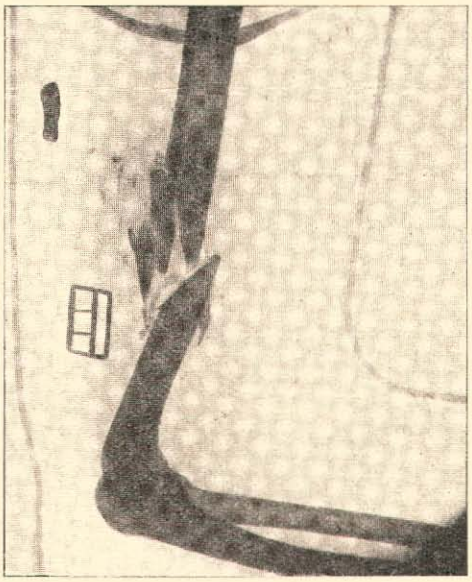

FIG. 1.—Comminuted fracture of humerus in the middle third. Foreign body lying just under the skin at external aspect of arm.

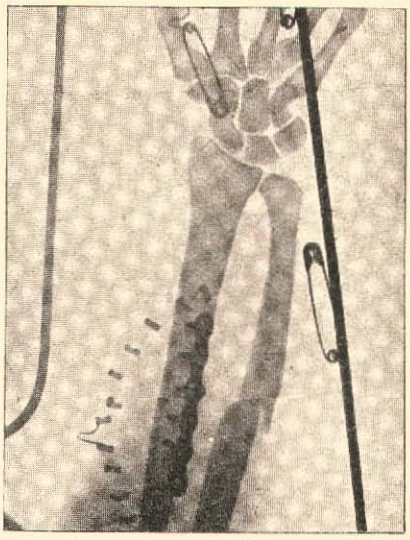

FIG. 2.—Fracture both bones of forearm. Radius plated. Plate and bones in good position. Skin wound closed with Michel clips.

used. This apparatus is, of course, a fixed-focus one, and once adjusted needs no further attention.

A Simple Method of Localization of Foreign Bodies.

So far as I am aware, the following method of localizing foreign bodies has not been published, and is so simple and practical that it deserves wider recognition.

Perhaps no subject has received more thought by radiologists during the present War than has the matter of simplifying localization. Any method, to be acceptable, must in the first instance be accurate, rapid, and capable of wide application. The method here described is most useful in the extremities, but has been used successfully many times, also in such parts as the shoulder and hip-joint regions, and occasionally in the trunk. For very accurate measurements recourse is always had to some of the well-known methods, such as Mackenzie-Davidson's, etc.

Apparatus.—The usual table, with tube underneath, permitting movements laterally and in the long axis of the table. A fluorescent screen. A piece of flat wood 12 inches long by $\frac{1}{2}$ inch wide and $\frac{1}{4}$ inch thick, in one end of which is embedded a flat piece of metal the diameter of a shrapnel bullet, i.e., $\frac{1}{4}$ inch roughly.

The Method.—The patient is placed upon the table in the recumbent position. Suppose the preliminary screen examination shows a foreign body to be lodged in the thigh somewhere in front of the femur. Place the flat stick with its metal piece under the thigh, screen above, and move the stick about until the shadows of the metal and the foreign body are superimposed. Mark the skin on the posterior surface of the thigh at the point where the metal rests. Proceed as before, but with the stick on the anterior surface of the thigh, until the two shadows are again superimposed. Mark the skin at this point also, and join these two positions by a line running around the limb. A probe passed directly through the limb from the anterior to the posterior marks would pass through the foreign body. We therefore have one plane.

Now, lay the stick upon the table so that both shadows appear on the screen, and shift the tube backwards and forwards under the table. The two shadows are now seen to move—but unequally. Gradually bring the stick with its metal piece towards the anterior surface of the thigh, keeping the tube under the table constantly shifting. As the metal approaches the horizontal plane in which the foreign body lies, it will be found that the two shadows move less and less unequally until a point is reached where they move equally and together. The foreign body must, therefore, lie in this plane, for if this point be exceeded by moving the metal nearer to the anterior surface of the limb, the two shadows again move unequally. For the most accurate use of this method, one should repeat the procedure just described on both the inner and outer aspects of the limb, making marks on each side upon the line joining the first two

positions, at the level at which the two shadows are found to move in unison. The foreign body will be found at the point of intersection of the two planes.

It may be said that one of the chief virtues of this method is speed, which is important when a large amount of work is in hand. Patients are brought to the X-ray room, the foreign bodies localized, and they are then passed immediately to the operating-room adjoining for operation.

ON TYPHUS FEVER.[1]

By Major ALEXANDER G. R. FOULERTON, F.R.C.S.
Royal Army Medical Corps (Territorial Force).

The value of statistics as to case-mortality in earlier epidemics of typhus fever was very doubtful. In the past there had been confusion in the diagnosis of typhus, typhoid, and relapsing fevers, and epidemic cerebrospinal meningitis. During the War now in progress, the case-mortality of typhus fever amongst the Serbian army in the field had been fifty per cent, or about the same as the recorded case-mortality amongst French troops in the Crimean War. It had been stated that the case-mortality amongst Serbian prisoners of war, in Austrian and German hands, had been twenty-five per cent in uncomplicated cases, and forty per cent in an apparently large group of cases in which diphtheria and typhus fever had been intercurrent. The Austro-German armies had had a considerable experience of typhus fever during the War, and a noticeable feature had been the frequent association, in the same patient, of typhus fever with some other infective disease—influenza, diphtheria, dysentery, malaria, and typhoid and relapsing fevers. This varied association of infection was doubtless a result of cross-infection in military hospitals by the agency of typhus-infected lice. Similar cross-infection had occurred in one instance, at any rate, in connexion with another louse-carried disease, relapsing fever. The relative frequency of double infection was, in part, an explanation of the variety of parasites described as having been obtained by bacteriological examination of the blood from cases of typhus fever. It was difficult to understand, in view of the results of exact experimental work, and with knowledge of experience that had been gained during the War, how the importance of insect parasites in the transmission of the unknown virus of typhus fever could be questioned. The spirochæte of relapsing fever was certainly carried by lice, by ticks, and possibly by other insect parasites; it was equally certain that the louse was a carrier of the virus of typhus fever, and it

---

[1] Contributed to a Discussion on "Recent Researches into the Ætiology of Typhus Fever," in the Section of Epidemiology and State Medicine of the Royal Society of Medicine, on Friday, May 25, 1917.