

THE X-RAYS AND THEIR USES.

BY H. GORDON WEBB, M.R.C.S. Eng.,
L.R.C.P. London.

"Now, Nurse, tell me, please what you know about X-ray work."

This is a question which is being asked fairly frequently by the superintendents of large nursing associations, especially in the big towns. In the future this question will be asked still more frequently, and no doubt the answer given will determine to some extent the final position allotted to the nurse in the association or nursing home. In most of the large hospitals at the present day, particularly in the provinces, the routine work of the treatment of the patients in the "X-ray" out-patient department is left largely to some of the senior

The glass bulb is shown, and so are the various tubes leading off the main bulb.

When the tube is nearly ready for use, the side tube A is joined to the emptying pump. When the vacuum is high enough, the tube A is sealed off and left as shown in the sketch.

The electric current (after being specially manufactured in a high-tension coil) is brought by means of a wire to the end of the rod B. It passes through the tube and leaves by the rod C.

Whilst passing through the tube the X-rays are made. Owing to the fact that a very small portion of air is left in the tube, we find that the particles of it are rushing about in the tube in a very "pell-mell" way. When the current begins to pass, these particles commence to stream away from the plate D on the

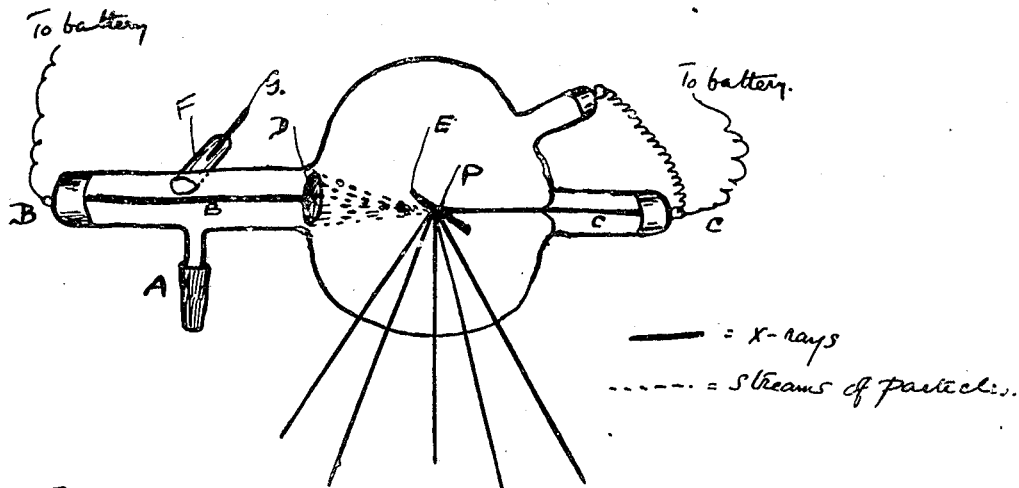


Figure 1.

nurses, although the honorary-in-charge keeps a watchful eye on the progress of each case.

When Röntgen first discovered the uses to which the X-rays could be put in showing up the bones as distinct from the other tissues in the hands and feet, no one, however bold, could have predicted to what an enormous extent the science of radiography and radiotherapy would develop.

In the early days of the work a photograph was considered very good if it just showed some sort of hazy outline of the bone. Now-days it would be considered very bad work if the tiny fibres which make up the centre of the shaft of a bone were not very distinctly shown.

The main portion of the modern X-ray apparatus consists of a focus-tube almost exhausted of air. (See Fig. 1.)

Here we find a diagram of an ordinary tube.

rod B to the plate E on the rod C. Just at the point P on the plate E the X-rays are produced. The particles now stream round in curves till they arrive at the plate D again. Thus the process continues whilst the passage of the current lasts.

In order to render the rays visible to our eyes, we require a very special and expensive screen made of tiny crystals of a compound of platinum spread in a very even and thin layer on parchment.

If we hold the screen up to the tube with the crystal side towards us, we find that when the tube is "working" we get a peculiar green colour produced on the screen. This is not seen if we look at the other side of the screen.

If now we put a hand between the screen and the tube, we will find that the shape of the hand is clearly shown. Inside the outline of

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