

the hand we notice that the harder parts, like the bones, stop more rays than the muscles, and so appear as darker shadows. An X-ray picture is essentially a "shadow" one. Hence we can see that the photograph which is taken magnifies the thing. The X-rays always magnify any defect or malposition.

If the screen is allowed to be acted on for a considerable time by the rays, we notice that it turns to a yellowish colour. If now allowed to stay in the sunshine for 24 hours the colour returns to the normal greenish one. We shall have to refer to this peculiarity when studying the treatment of ringworm.

It must be remembered that everything connected with the actual *seeing* of the rays must be done in an absolutely dark room. Photographs and treatment can be done in any light.

If the rays are allowed to act on the skin for a great length of time a burn results. We must therefore protect ourselves by always wearing large aprons of indiarubber saturated with lead. Gloves of the same material must also be worn.

liver, or bladder, or the lower portion of the spine, it is necessary to have the patient on a milky diet for three days previously, and to give Mist. Alba every night for a week before the event. An enema is given on the two mornings preceding the ordeal, and a turpentine enema about two hours before. By this extended treatment we reduce the likelihood of interference with the picture, by constipated motions and flatus, to a minimum.

When examining the stomach for growths, &c., we treat the patient as if the case were one for gastro-enterostomy, except that we leave out the special antiseptic treatment. Immediately before the screen examination takes place, the patient undergoes gastric lavage. At the side of the apparatus a small table is placed, and on this is a bowl containing porridge, to which a certain quantity of bismuth carbonate has been added. The patient gradually eats this "delicacy," and, after the swallowing of each mouthful, is subjected to a searching screen examination. At the end his stomach is examined, so as to see if the bis-

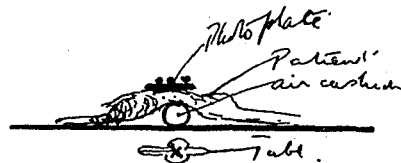


Figure 2.

When looking through the screen to see anything, we generally wear goggles made of lead-glass.

In taking a photo, we place an envelope containing a special X-ray plate on a hard table or board, and put the hand or arm or leg on it. We then arrange the tube directly over the part to be taken. Another way to take a kidney or spine (and this is by far the best way) is to put an air-pillow on the table and then make the patient lie flat on the table with his abdomen resting on the pillow. The tube is then arranged under the table, and the plate is kept in position on the back by means of pieces of lead. (See Fig. 2.)

The principle of taking the photograph is the same in every case, but it depends largely on the kind of case, thickness of the part, and strength of current, as well as condition of the tube, how long the exposure must be.

In making examinations we sometimes require a special preparation of the patient. For example, when photographing the kidneys, or

mouth shadow there is at all abnormal. Many conditions, such as cancer of the stomach or œsophagus, can thus be demonstrated. Hour-glass stomach throws a very typical shadow on the screen.

A thorough screen examination will reveal most conditions of internal growths in kidneys, spine, lungs, bladder, bones, muscles or brain. Stone in the kidney, ureter or bladder is evident at once, but gallstones are practically never discernible on the screen, although some workers profess to have photographed them.

Tuberculosis of the lungs can often be seen with great distinctness long before the most experienced specialist in lung conditions can be certain that there is any definite lesion at all. Tubercular troubles in the glands of the mediastinum, neck or axilla show up very well. Aneurysms and dilatation of the heart and effusions into the pleura are conditions which can always be definitely diagnosed.

Foreign bodies swallowed, if of a metallic or solid nature, can be localised at once, and that

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