

fectly before the sensitive plate is exposed, and herein the fluoroscope is made use of, after you have turned on the apparatus; have a certain object to look through and see whether the tube is working at its best. If you accustom yourself to look at the same object each time, you will soon familiarise yourself as to how plain the object should appear when the tube is at its best, whereas if you use a different object each time you will have lost that advantage.

A word about the Crookes' tube. This tube is exhausted to 1-1,000,000 part of air, having at each end a platinum wire fused in the glass and ending externally in a loop to make attachments to the exciting apparatus. Internally these wires end differently; the one is attached to a dish, usually made of aluminum, which function is to concentrate the rays, and is called the cathodal extremity of the tube. It is always attached to the negative pole of the exciting apparatus, the other being attached to a reflector, and is usually made of the same material; its function is to reflect the rays, and is called the anodal extremity, and is always attached to the positive pole of the exciting apparatus. If these attachments be reversed, little or no penetrating ray will be detected outside the tube. If the vacuum of the tube be too high, heat the cathodal extremity slightly over a spirit lamp, taking care not to heat it too much at one point, as you are liable to break the tube by so doing. If the vacuum be too low, use the tube a while and the vacuum will gradually get better and the ray more penetrable. After the tube has been in use considerable and is not working perfect, reverse the connections a few minutes and the tube will again probably work to perfection; an impaired tube is also benefited by rest; but after a time the tube cannot be benefited by this means of repairing, and will have to be sent to the manufacturer for re-exhaustion. Many tubes are on the market, and it depends upon what kind of exciting apparatus it is to be used as regards which kinds of tubes are best suited for that particular outfit. In connecting the tube with the exciting apparatus I should recommend the connecting link to be made of fusible lead wire, as a more perfect connection can be made and consequently less injury done to the tube through manipulation while making the necessary attachments. Tubes are manufactured which contain a salt in an extension at one end of the tube. This salt can be heated from outside the extension and lower the vacuum if it be too high. This tube is commonly called a focusing tube.

Great has been the interest taken by all the educated human race in the achievements of the Rontgen ray, and the class that has been most interested is that of the medical