

near the brass there is likewise no attraction (Fig. 10), but when the ebonite rod is charged and held near, but not touching the brass body, we find that the pith ball is attracted! (Fig. 11.)

Thus we see the brass body has been charged not by either friction or contact, but by the influence of the charge on the ebonite rod a little distance away. The brass is said to have been charged by "induction."

A CONDENSER INCREASES THE CHARGE.

Two brass plates on glass stands are so arranged that they can be placed face to face. Each plate has a small pith ball attached by a cotton thread, which will show when the plate is charged. From the ebonite one of these plates is now charged by touching it a number of times with the rod which is each time rubbed with the catskin. The pith ball is strongly repelled, and stands out from the plate almost in a horizontal position. (Fig. 12.)



FIG. 13.—The same plate as in figure 12 (with the same charge) after plates were placed close together, but not touching. Note that the pith-ball has dropped showing less repulsion. More electricity can now be given to the charged plate. That is why the plates when close together are called a "condenser."



FIG. 14.—The same condenser as in Figure 13. Note pith-ball horizontal again as in Figure 12. As much extra charge was added to the left-hand plate as the plate originally held. The right hand plate has become charged by "induction," as shown by repulsion of pith-ball.

Now when the other plate is brought close to the charged one we note that the pith ball drops considerably (Fig. 13), and more electricity can be put on the charged plate, in the same manner as before, until the ball again stands in a horizontal position. (Fig. 14.)

Two insulated plates, side by side, are, consequently, called a "condenser." A condenser enables us to store up a much larger charge of electricity than either plate alone will hold.

CHARGES RESIDE ON THE SURFACE.

One other law should be mentioned, viz.: When a conductor is electrified the charge resides entirely on the surface. This can be readily proven, but the experiment does not lend itself to illustration by photograph.