secondary this relieves the primary of so much of its self-induction, and consequently more current flows in. In a well-designed transformer very nearly the same amount of energy is available from the secondary side as is supplied to the transformer on the primary side.

Capacity.—It is known to most students that the poles of an ordinary battery, or one pole of a dynamo generating a pressure of one hundred or two hundred volts, may be handled without fear and probably without any perceptible shock. As we ascend the scale of voltages there comes a time when the current becomes perceptible, and at very high voltages it may be dangerous or even fatal, even though the individual makes contact at one point only, and at no time forms part of the direct circuit between the two poles of the machine. Every conductor is capable of receiving a certain amount of *surface* charge of electricity, which bears a direct relation to the extent of its surface, and the quantity required to raise the potential of any conductor from zero to unity (all other conductors in the vicinity being kept at zero potential) is called its *capacity*. But this is not all the conductor will hold, for if we double the potential twice as much electricity will flow into it. The human body is a conductor with considerable surface, and if we touch another conductor charged to a high potential, enough may flow in to cause a perceptible or possibly fatal shock. A conductor resembles a rubber bag in this respect—the greater the pressure the more it will hold up to the point of bursting.

The capacity of a conductor is also much increased by placing near to it other conducting bodies whose potential is kept at zero by being connected to earth. The nearer these earthed bodies are to the conductor the greater becomes the capacity of that conductor. There are times when it is convenient, even necessary, to transfer rapidly a charge from one conductor to another, and if we can introduce a large capacity into the circuit this transfer will take place. A device for this purpose is called a