cated to the brain to be made into sound. But between the sounding body and the ear there must be also a medium, else how could sounds not made in the ear itself reach that organ. That such a medium is necessary may be shown by ringing a bell in vacuo. Experience tells us that a sound is produced by ringing a bell, but fact tells us that in this case no sound is heard. The only abnormal condition is the absence of air and to this we must attribute the absence of sound. And though air is the common medium for the propagation of sound, any gas liquid or solid may serve provided only that it be elastic. Elasticity is the sine qua non both in the production and propagation of sound, for a vibration can be propagated only by communicating itself to the layers of the medium nearest it; and in order that these may receive and transmit vibrations it is necessary that they themselves be capable of vibrating. It is this theory of imparted vibrations which explains a fact taught by experience, that sound is transmitted with greater intensity through liquids than through gases and with greater intensity through solids than through liquids. The explanation is as follows: Liquids are more elastic—or, in other words, have a greater cohesive force—than gases; consequently a molecule forced from its place has a greater power acting on it to make it return when the substance is a liquid. This greater power will cause the molecule to perform wider vibrations by imparting to it a greater momentum, and since, as will be shown later, the intensity of sound depends on the amplitude of the vibrations, it follows that sound will be transmitted with most intensity in a body where atoms are capable of greatest amplitude of vibration — in other words, bodies with most elasticity or greatest cohesive force. Hence, in order of greatest intensity of transmission, are solids, liquids, gases. But no matter what the medium, the manner of propagation in the same, that is by a vibratory wave running in that medium. A splendid example of such a type of motion is to be found in the waves produced by throwing a stone into water. It will be noticed that from the point where the stone strikes the water a series of little ripples spread in ever-widening circles until they finally die away in the distance — which is dependent on the force with which the stone strikes and the mass of the stone. Now when the object strikes the water it displaces suddenly and with considerable force a volume of water equal to its own volume. This displaced water is mainly forced downwards and sideways, and the molecules thus forced from position strike against neighboring ones; these in turn are thrown against others and thus the force of the falling stone is expanded in creating the disturbance which is visible to us in the form of circular