cated through some medium surrounding it, and is thus transmitted to ear. To illustrate; a small collodion balloon containing a mixture of oxygen and hydrogen is ignited, when, the gases exploding, immediately the ear is conscious of a shock. The impulse, or rather vibratory movement, started when the air particles were urged outward by the explosion, whence, as these particles separated, they formed a wave which brought the sound to our ear. But in calling this explosion a sound, we are, perhaps, anticipating, as, between sound and noise, some distinction must be made. Sound or rather musical sound, produces a continuous sensation whose value can be readily estimated; noise, on the contrary, may be a sound whose duration is too brief, as the firing of a pistol, to be properly determined, and considering this distinction, the natural inference is that sound may be defined as that which is pleasing to the ear, while by noise is meant a shock to the auditory nerve.

Having now some conception of sound, our next consideration must be the manner in which it is brought to our ear, that is, transmission. We have already stated that the theory of sound is generally admitted, but transmission of vibratory movement, is nevertheless, difficult of explanation. That a medium is necessary, whether it be a gas, a vapour, a liquid, or a solid is proved by placing an alarum clock in vacuo, using the bell jar as the exhaust depot and receptacle for the clock. Placing the ear close to the jar, when the alarm rings not the slightest linkle of the bell is heard, thus demonstrating the fact, that, where there is a space perfectly void of air, no sensation, let the explosion be violent as it may, is produced on the ear, and that some medium is essential in the transmission of sound. A body vibrating sends out, through this medium of the air, waves, and the progress of these waves forms what is known as the propagation of sound. To obtain an adequate idea of the manner in which these waves reach the ear, we can but refer to Daguin's homely yet useful comparison; "The undulation produced on the surface of the water by a stone being dropped into it, show the manner in which undulatory movement is transmitted through the air. The pressure exerted, on the water by the stone raises the surrounding water in a circle; this speedily falls into the depression made by the