spaces, and this vibratory motion runs through the atmosphere from the sounding body to the ear. Waves, not of elevation and depression, but of condensation and rarefaction, are transmitted; and the sound thus becomes an object of sense to the organ.

Another familiar instance of the propagation of vibrations we have in the circles on the surface of smooth water, which diverge from the point where it is touched by a small object, as a drop of rain. In the beginning of a shower, for instance, when the drops come distinct, though frequent, we may see each drop giving rise to a ring, formed of two or three close concentric circles, which grow and spread, leaving the interior of the circles smooth, and gradually reaching parts of the surface more and more distant from their origin. In this instance, it is clearly not a portion of the water which flows onwards; but the disturbance, the rise and fall of the surface which makes the ring-formed waves, passes into wider and wider circles, and thus the undulation is transmitted from its starting-place, to points in all directions on the surface of the fluid.

The diffusion of these ring-formed undulations from their centre resembles the diffusion of a sound from the place where it is produced to the points where it is heard. The disturbance, or vibration, by which it is conveyed, travels at the same rate in all directions, and the waves which are propagated are hence of a circular form. They differ, however, from those on the surface of water; for sound is communicated upwards and downwards, and in all intermediate directions, as well as horizontally; hence the waves of sound are spherical, the point where the sound is produced being the centre of the sphere.

This diffusion of vibrations in spherical shells of successive condensation and rarefaction, will easily be seen to be different from any local motion of the air, as wind, and to be independent of that. The circles on the surface of water will spread on a river