

miles in a minute: it is greater in dense, and smaller in rarefied air; being, in the same medium, exactly proportioned to the elasticity of that medium.

Water is the medium of sound to aquatic animals, as the air is to terrestrial animals. Sounds are, indeed, conveyed more quickly, and to greater distances, in water than in air, on account of the greater elasticity of the constituent particles of water, within the minute distance required for their action in propagating sound. Stones, struck together under water, are heard at great distances by a person whose head is under water. Franklin found, by experiment, that sound, after travelling above a mile through water, loses but little of its intensity. According to Chladni, the velocity of sound in water is about 4900 feet in a second, or between four and five times greater than it is in air.

Solid bodies, especially such as are hard and elastic, and of uniform substance, are also excellent conductors of sound. Of this we may easily convince ourselves by applying the ear to the end of a log of wood, or a long iron rod, in which situation we shall hear very distinctly the smallest scratch made with a pin at the other end: a sound, which, had it passed through the air only, would not have been heard at all. In like manner, a poker suspended by two strings, the ends of which are applied to the two ears, communicates to the organ, when struck, vibrations which would never have been heard under ordinary circumstances. It is said that the hunters in North America, when desirous of hearing the sounds of distant footsteps, which would be quite inaudible in any other way, apply their ears close to the earth, and then readily distinguish them. Ice is known to convey sounds, even better than water: for if cannon be fired from a distant fort, where a frozen river intervenes, each flash of light is followed by two distinct reports, the first being conveyed by the ice, and the second by the air. In like manner, if the upper part of the wall of a high building be struck with a hammer, a person standing close to it on the ground,