

SOUND.

Sound is often heard at a very great distance on the earth. The sound of an eruption of a volcano has been heard in one case at the distance of 370 miles. But suppose that the same sound should occur at the distance from the earth—that is, over 300 miles beyond the atmosphere that enrobes the earth—no inhabitant of our world could hear it, for the same reason that you do not hear the bell ringing in an exhausted receiver. If, therefore, any sound, however loud, should be given forth by any of the heavenly bodies, we could not hear it. The course of these bodies in their orbits is noiseless, because they meet with no resistance from any substance. Bodies passing rapidly through our atmosphere cause sound, from the resistance which the air gives to their passage. The whizzing of a ball is an example of this. It is the passage of the electric fluid through the air which produces the thunder. But the heavenly bodies, meeting with no resistance, make no sound in their course, though their velocity be so immense. In the expressive language of the Bible, "their voice is not heard."

The velocity of sound varies in different media. Thus it passes through water four times as rapidly as through air.

Dr. Franklin, having placed his head under water, heard distinctly the sound of two stones struck together in the water at the distance of more than half a mile. Sound passes through solids much more easily, and therefore more rapidly, than through liquids. Thus its velocity through copper is twelve times and through glass seventeen times greater than through air. If you place your ear against a long brick wall, at one end, and let some one strike upon the other end, you will hear two reports—the first through the wall and the second through the air.

Liquids are better conductors of sound than aeriform bodies, and solids than liquids.

Persons in boats can converse with each other at a great distance, because water is a good conductor of sound. When the ear is applied to one end of a long stick of timber, the scratch of a pin at the other end can be distinctly heard, owing to the conducting power of the wood. An approaching locomotive can be heard at a great distance by placing one's ear on the rails. The American Indians knew by experience the facility with which solids transmit sounds, and were in the habit of applying their ears to the earth when they suspected