

*other times broken and unequal?* Because it is sometimes near, and the sound from all parts of the flash reaches us at the same instant, and at other times it is at different distances from us, and consequently all the sound does not reach us at the same time.

*What is sound?* Sound is that mode of motion which is capable of affecting the auditory nerve. It is produced by the vibration of some elastic substance. *Why do we hear more distinctly on a damp day than we do on a dry one?* Because damp air is the better conductor of sound. *What is an echo?* It is a reflected sound. *How fast does sound travel in the air?* About eleven hundred feet per second. *What is the velocity of electricity?* Two hundred and eighty-eight thousand miles per second. *How can the distance a thunder storm is away be ascertained from seeing the flash?* By counting the number of beats of the pulse from the time the flash is seen to the time the thunder is heard, and dividing by five. The answer will be in miles.

*To what height does the atmosphere extend?* From fifty to two hundred miles. *What is the pressure of the atmosphere at the earth's surface?* Fifteen pounds to every square inch of surface. *What is the pressure on the average man?* Thirty thousand pounds, or fifteen tons. *Why does he not feel this pressure?* Because it presses equally in every direction, and on the internal as well as on the external surface of the body. *How high will the pressure of the air raise water in a pump?* About thirty feet. *Why?* Because a column of water thirty feet high and one inch area cross section weighs fifteen pounds. *How do flies walk on the ceiling?* Their feet are so formed that when they attempt to withdraw them from the ceiling a partial vacuum is formed, and the pressure of the air holds the fly up. *Why is it that when we invert a glass that is filled with water, and has a paper over the top, that the water does not fall out?* Because the upward pressure of the air holds it in. *What is the*