

with clouds, they were attended by a long-continued roll that mimicked thunder.

To determine the distance of a thunder-storm, it is only necessary to ascertain the number of seconds which intervene between the sight of the lightning and hearing the sound, and these multiplied by 1090, the number of feet that sound travels in a second, will give in feet an approximate estimate of the distance of the electrified cloud from the place of observation.

From a series of observations that have been made in Germany, it appears that the general direction of accumulated atmospheric electricity is from west to east. It does, however, sometimes happen, that lightning rises in the north and south, but this is comparatively seldom. Philosophers are not yet acquainted with any general principles by which they can explain these singular circumstances.

LIGHTNING-CONDUCTORS.

When Franklin ascertained the electrical origin of lightning, he immediately perceived that his discovery might be so applied as to decrease the danger resulting from the presence of a thunder-storm. He knew that electricity was readily conducted by metals, and that points transferred it with greater facility than blunt or rounded surfaces, and therefore proposed to attach pointed metallic conductors to buildings, as a security against the effects of lightning. The propriety of this invention is very evident. When electricity passes from the clouds to the earth, the bodies through which it passes act as conductors, some willingly, and others as by force. But if two substances of unequal conducting power be presented to it, there will be a capability of selection, and it will, under all circumstances, choose one in preference to the other. Now the metals are the best conductors, while stones and bricks are very bad ones; and, consequently, electricity will seek to be transferred by the former, and the building will, by their presence, be preserved from those effects which usually attend an electric stroke. From a consideration of these facts, we may imagine Franklin to have been directed to the propriety of applying metallic conductors to buildings. He proposed to fix a metallic rod in such a manner, that one end penetrating the earth for some distance, the opposite or pointed