

had no other agent of destruction in his power, and as if they were not enveloped with dangers arising from the construction of the human body as well as from external causes. The number of deaths by lightning bears but a small proportion to the number of thunder-storms ; for when the electricity passes from the clouds to the earth, it must generally be conveyed at once to the earth itself.

Rocks frequently bear the marks of a fusion that has resulted from electric action. Some years since, Dr. Fiedler brought to London some vitreous tubes that had been obtained in the plains of Silesia and Eastern Prussia ; one of which, found at Paderborn, was forty feet long. These fulgorites, as they were called, were undoubtedly produced by the heating effects of atmospheric electricity, and have generally been found to terminate in springs of water ; and we may, consequently, be allowed the suspicion, that the direction of the lightning is, in some measure, governed by the character of the superficial rock and its substratum.

#### CIRCUMSTANCES UNDER WHICH LIGHTNING IS PRODUCED.

Having ascertained the nature of that cause which produces the phenomenon of lightning, some hope may be entertained of discovering the manner in which it acts. From the effects produced by the passage of atmospheric electricity through animal bodies, it is quite certain that it is in an accumulated state ; nor is there much difficulty in ascertaining some of the causes which tend to produce an unequal distribution of the electric agent. We may suppose lightning to be produced under three different circumstances ; when the electricity passes from one cloud to another ; when from the clouds to the earth ; and when from the earth to the clouds. In the last two instances it may occasion the destructive effects to which we have referred ; in the first, its influence must be confined to the aerial region in which it moves.

When two clouds, charged with opposite kinds of electricity, or, in other words, having opposite electric conditions, approach so near to each other as to enable the electricity to overcome the restraining or coercive influence of the atmosphere, a discharge takes place, which produces a flash of light or lightning. We may, in fact, compare the action of two clouds, one in an overcharged and one in an