

(d) Methods of Vertical Discharge

As a rule so-called "ball lightning" of the variety which we judge to be intense brush discharge discharges when the potential gradient diminished to a value below the critical one for maintenance of the discharge. This generally occurs following lightning strokes which largely discharge the heavy concentrations of electric charge of opposite sign in the overlying thundercloud.

"Ball lightning" which appears to form at sharp-pointed objects as a lightning stroke approaches disappears when (a) the main lightning currents cease flowing just after contact of the stroke or (b) the space above or around the lightning channel is largely collected into the channel and transported to earth or cloud.

"Ball lightning" which appears to be a luminous dart like a meteorite rapidly falling (or rising) along the path of an immediately preceding or succeeding lightning stroke disappears into the earth (or cloud).

"Ball lightning" in the form of a luminous ball apparently moving through a space or rolling about the ground disappears eventually, perhaps on making contact with some object. Some observers have stated that the ball collapses with a noise resembling that of a big firecracker, leaving as odor of ozone. It seems probable that in these cases also the dissipation takes place when the potential gradient has diminished below the critical value for maintenance of the discharge, simultaneously with the occurrence of a positive lightning stroke to the area involved.

As indicated previously, reports have also been given that the main body of the "ball lightning" has appeared to have broken up into a number of smaller "balls" which have fallen to earth, or to have emitted small streams, like lightning, projected towards the earth, and thus dissipated.

A sound of thunder, of greater or lesser intensity, may accompany the dissipation. It is not possible to be certain that the sound is always intimately associated with the phenomenon, for it may have been the thunder associated with a nearby lightning stroke.

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