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latter, extreme cases, the luminous darts observed are probably of the same general nature as the lightning streamer, although the path taken may be very irregular and even show reversals in direction. In some cases, long sections of paths of such luminous darts may show slight curvature. Near the ground or in closed spaces a much smaller speed is often said to be observed, namely about 1 x 2 meters/sec. The "ball of fire" may seem to move or flash along in a race, or to roll along the flame. In a thunderstorm, as may be experienced on a mountain top, an observer has reported "seeing balls of fire roll along the rocks and drop from one to another." Jensen St. John's fire on sharp objects beneath thunderstorms may fluctuate rapidly in size, intensity, and orientation, or show displacements from one point to another, hence the flame may appear to whist and dance, or move. When a lightning flashover at a point produces an after-glow or the observer's retina, movements of the eyes cause corresponding movements of the image which the unaided observer attributes to the movement of a luminous "ball of fire" or flame. Ball lightning observed by Jensen on the way of a lightning flash through dust-laden air during a thunderstorm "appeared as a shapeless mass of lavender color which seemed to float slowly downward." Jensen states: "The phenomenon was several feet brilliant near the ground and gave the impression of a gigantic pyrotechnic display. Two or three of the globular structures seemed to roll along a pair of 2300 volt power lines for 100 feet or more, then tumbled down on the ground and disappeared with a loud report."

When a lightning streamer from a thundercloud terminates in the air, the leader stroke is sometimes so faintly luminous in portions that only a segment of the path is observed. This may occasionally give the impression of elongated "ball lightning," but is a natural atmospheric lightning stroke.

3. Heavily Air or other Craft

There have been numerous cases of aircraft struck by lightning. When the aircraft is aluminum, it serves as a Faraday cage, and provides electrical protection

1. Jensen, J. C. Physics, vol. 2, p. 372 (1931).

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