

compression of the air. To illustrate this, I may mention that there is a little instrument called an air match, consisting of a piston and cylinder, somewhat like a syringe, in which a light can be struck by suddenly forcing down the piston upon the air below in the cylinder. As the air cannot escape it is suddenly compressed, and gives out a spark sufficient to ignite a piece of tinder at the bottom of the cylinder. Some idea from this may be formed of the heat evolved by the motion of a large body in the atmosphere with the velocity of a meteor. A combustible body, under such circumstances, would be speedily ignited, but could not burn freely till reaching air of greater density; thus, on entering the lower portion of the atmosphere, it would burn with great rapidity, and, accordance to its distance, be more or less, or entirely consumed before reaching the earth. It has been estimated that by the time they have traversed a space of 50 miles, the meteoroid, or meteor, as it has then become, is heated, melted, evaporated and extinguished in a period of not less than a second of time. The height from us at which they become heated to visibility is sometimes as much as 200 miles, but the average has been put down at 75 miles, and extinction about 50 miles above the earth. The length of the arc or course they describe in their visible path varies greatly, owing to the position of the observer. One may flash up, increasing in size and brilliancy, and disappear without seemingly describing any arc. The course of such a one is directly towards the observer, but to another person 3 or more miles apart, it would exhibit an arc of several degrees in length.

Different and varied views are held by philosophers as to the origin of meteoroids. One theory is, that they are fragments of an exploded or shattered planet filling interplanetary space, most of which, through holding orbits round the sun, will ultimately fall into that body, and serve as fuel for that central orb. To illustrate this, supposing our earth, through some gigantic convulsion became disintegrated, and burst into numerous portions, these would continue to move on becoming more or less erratic in their movements; the smaller portions would first feel the influence of disturbing agencies larger than the earth, and moving inward, would become entangled, as it were, in the resisting medium in space which is now acknowledged to exist. This resistance would change their orbits, and the lighter particles would form a more erratic orbit than the

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