

from the infinite. Before discernible to unaided eyes, the astronomer with his instrument detects it as a faint luminosity just appeared. For weeks he watches its changes. Nightly it grows brighter. It is approaching; it will arrive. Like the head-light of a locomotive seen at first as a luminous point in the far distance, over some miles of track, gradually growing brighter—with no other evidence of motion—with brightness at length increasing in accelerated ratio, then dazzling us by its glare, and finally thundering past with a velocity which appalls, and retiring into the night which reigns in the opposite direction—so comes the head-light of a train of cosmical matter; so grows its luminosity; with such a stunning demonstration of physical power it rushes past us, and sinks into infinite distance in another quarter of the heavens. I confess it is impossible to contemplate all this without a feeling of awe.

Would that the mystery of the comet were once unfolded to us! It tantalizes us by its near approach and its undiminished inscrutableness. But, thanks to intelligence—thanks to the spirit of science—thanks to that beneficent constitution of the universe by which it gives up its secrets one by one, to the demands of intelligent inquiry, we have found out something. We have seen comets torn to pieces by the power of attraction—without a collision—by the attractions of the satellites of Jupiter. This was Bi-e'-la's [Be-a'la] comet, and each fragment thenceforward pursued its separate path. We have seen comets so shattered and disintegrated by the pulls and strains to which they were subjected in our system—in making their circuit about our sun, in getting through the entanglements of Jupiter's and Saturn's attractions, that they appeared literally to be going to pieces and dividing up their remains among the planetary masses of the system.

The comet, in short, appears to be essentially a train of stones flying with three thousand times the velocity of the railroad "express." The smaller stones more resisted than the larger ones, by other matter disseminated through space, slacken their motion slightly, and are struck by the larger