

Looking around us, we behold all Nature instinct with motion. The winter winds are hurrying to and fro; the storm-cloud scatters moisture from the mountains to the sea; the noisy torrent foams down the hill-side, and the majestic river winds ceaselessly to the ocean; vapors rise from the ground and descend again in rain and snow; the punctual tide performs unweariedly its daily perambulation of the globe; the waves' hoarse growl along the rocky beach is never stilled. The forces of matter, in their multiple forms and their myriad labors, keep every element and every atom constantly astir. If we look up, the sun, and moon, and stars are on their journeys. Every planetary orb and every satellite is full of motion. Even while it performs its stupendous journey about the sun, it is forever shifting its attitude in respect to itself. Not content with orbital and axial motions, each planet nods grandly from its ethereal altitude, and keeps time with the rhythm of the solar year. The stars which we call "fixed" are probably in motion, since twenty or thirty pairs of stars are seen to revolve about each other; and, if the wonderful induction of Mädler is to be credited, our sun, with his retinue of over a hundred planets, satellites, and comets, is sweeping through space on a stupendous journey of 18,000,000 of years.

Now we start the inquiry whether all this motion can be perpetuated forever. Motion, according to the new philosophy, is but one of the modes of heat, or electricity, or light, or magnetism, or chemical affinity. Under certain circumstances, one of these forms of force is changed into another. It is a law of every form of force *to seek a statical equilibrium*, and the transformation of a force signals its attainment of an equilibrium. A hammer descends upon a bar of steel and comes to rest; the *motion* is counteracted, but at this instant, and in consequence of its dis-