qual length, and seasons of capricious temperature, planets and moons of portentous size and aspect, glaring and disappearing at uncertain intervals;" tides like deluges, sweeping over whole continents; and, perhaps, the collision of two of the planets, and the consequent destruction of all organization on both of them.

Nor is it, on a common examination of the history of the solar system, at all clear that there is no tendency to indefinite derangement. The fact really is, that changes are taking place in the motions of the heavenly bodies, which have gone on progressively from the first dawn of science. The eccentricity of the earth's orbit has been diminishing from the earliest observations to our times. The moon has been moving quicker and quicker from the time of the first recorded eclipses, and is now in advance, by about four times her own breadth, of what her place would have been if it had not been affected by this acceleration. The obliquity of the ecliptic also is in a state of diminution, and is now about two-fifths of a degree less than it was in the time of Aristotle. Will these changes go on without limit or reaction? If so, we tend by natural causes to a termination of the present system of things: If not, by what adjustment or combination are we secured from such a tendency? Is the system *stable*, and if so, what is the condition on which its stability depends?

To answer these questions is far from easy. The mechanical problem which they involve is no less than this;—Having given the directions and velocities with which about thirty bodies are moving at one time, to find their places and motions after any number of ages; each of the bodies, all the while, attracting all the others, and being attracted by them all.

It may readily be imagined that this is a problem of extreme complexity, when it is considered that every new *configuration* or arrangement of the bodies will give rise to a new amount of action on