

of the debris of the clouds or spots which, like those of the sun, gathered on the surface of the globe while still an intensely hot body. These spots were no doubt again and again melted down as they formed, until the whole globe had cooled sufficiently to allow them to aggregate into a solid external crust. The outer region of the planet, as the earth drew towards the sun, separated into different portions that arranged themselves one above another, according to their relative densities, the atmosphere being uppermost, then the water, while below these the more solid matter took the form of an outer layer of stone, clay, sand and mud, and an inner more solid and heavy layer whence all the metals come. Descartes supposed that the heat and light of the sun could penetrate into the innermost parts of the earth and there, during day and summer, in the early stages of the planet's history, exerted so potent an influence as to lead to the rupture of the outer crust, of which some projecting portions rose above the waters and formed land.

This philosopher further suggested that certain exhalations from the inner parts of the earth turn into oil, but when they are in a state of violent motion and in that condition enter cavities or fissures which previously contained air, they pass into a heavy thick smoke, like that of a newly extinguished candle. When a spark of fire is excited in these places the whole of the smoke bursts into flame, and becoming suddenly rarefied presses with great violence against its containing walls, especially when it includes a quantity of volatile salts and spirits. Hence arise earthquakes. It sometimes happens also that the flame which causes