

entered into combination, whence it is inferred that their temperature is lower than that of our sun.

More recently, however, another view of the evolution of stars has been propounded by Mr. Lockyer. He conceives that all self-luminous cosmical bodies are composed either of swarms of meteorites, or of masses of vapor produced by collisions of meteorites: that stars, comets and nebulae are only different phases of the same series of changes; that where the temperature of a star is increasing the star consists of a meteor-swarm, which by constant collision of its individual meteorites is gradually being vaporized by heat; and that after volatilization cooling sets in and the vapor finally condenses into a globe.<sup>9</sup>

## II. FORM AND SIZE OF THE EARTH

Further confirmation of some of the foregoing views as to the order of planetary evolution is furnished by the form of the earth and the arrangement of its component materials.

That the earth is an oblate spheroid, and not a perfectly spherical globe, was discovered and demonstrated by Newton. He even calculated the amount of ellipticity long before any measurement had confirmed such a conclusion. During the present century numerous arcs of the meridian have been measured, chiefly in the northern hemisphere. From a series made by different observers between the latitudes of Sweden and the Cape of Good Hope, Bessel obtained the following data for the dimensions of the earth:

Equatorial diameter . . . .	41,847,192 feet, or	7925.604 miles
Polar diameter . . . . .	41,707,314 " "	7899.114 " "
Amount of polar flattening .	139,768 " "	26.471 " "

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<sup>9</sup> "The Meteoritic Hypothesis," 1890.