rushing hither and thither in space, and it is almost equally strange to imagine an intelligent Creator banging these bodies about like billiard balls in order to make worlds. Still, in that case we might imagine them not to be altogether aimless. The question only becomes more complicated when with Grove and Lockyer we try to reach back to an antecedent condition, when there are neither solid masses nor nebulæ, but only an inconceivably tenuous and universally diffused medium made up of an embryonic matter, which has not yet even resolved itself into chemical elements. How this could establish any motion within itself tending to aggregation in masses, is quite inconceivable. To plodding geologists laboriously collecting facts and framing conclusions therefrom, such flights of the mathematical mind seem like the wildest fantasies of dreams. We are glad to turn from them to examine those oldest rocks, which are to us the foundation stones of the earth's crust.

What do we know of the oldest and most primitive rocks? At this moment the question may be answered in many and discordant ways; yet the leading elements of the answer may be given very simply. The oldest rock formation known to geologists is the Lower Laurentian, the Fundamental Gneiss, the Lewisian formation of Scotland, the Ottawa gneiss of Canada, the lowest Archæan crystalline rocks. This formation, of enormous thickness, corresponds to what the older geologists called the fundamental granite, a name not to be scouted, for gneiss is only a stratified or laminated granite. Perhaps the main fact in relation to this old rock is that it is a gneiss; that is, a rock at once bedded and crystalline, and having for its dominant ingredient the mineral orthoclase, a compound of silica, alumina and potash, in which are imbedded, as in a paste, grains and crystals of quartz and hornblende. We know very well from its texture and composition that it cannot be a product of mere heat, and being a bedded rock