a system of materials out of which the universe is formed, within which all chemical changes (except certain phenomena of radium and a few other anomalies, including perhaps unknown changes in the interiors of the celestial bodies) take place.

It is certain that nearly all the chemical transformations upon the earth consist of rearrangements of the atoms of the known elements. A century and a half of scientific chemistry guarantee that conclusion with a security rarely attained in descriptive science. And the testimony of the spectroscope is equally conclusive that the visible stars, like the sun itself, are made up almost or quite exclusively of the same chemical elements. Such facts, so familiar that they require no comment or explanation, might sufficiently justify the acceptance of the chemist's known elements as the only important matter in the universe. But even more weighty evidence is at hand; I mean the so-called periodic classification of the elements.

It has long been evident that simple relationships exist in some cases between the atomic weights of similar elements. For example, the atomic weights of bromine, strontium, and selenium are approximately equal