shown (chap. xi.) that the physiological hypothesis of a special, immaterial "soul-substance" is untenable.

The study of ponderable matter is primarily the concern of chemistry. Few are ignorant of the astonishing theoretical progress which this science has made in the course of the century and the immense practical influence it has had on every aspect of modern life. We shall confine ourselves here to a few remarks on the more important questions which concern the nature of ponderable matter. It is well known that analytical chemistry has succeeded in resolving the immense variety of bodies in nature into a small number of simple elements—that is, simple bodies which are incapable of further analysis. The number of these elements is about seventy. Only fourteen of them are widely distributed on the earth and of much practical importance; the majority are rare elements (principally metals) of little practical moment. The affinity of these groups of elements, and the remarkable proportions of their atomic weights, which Lothar Meyer and Mendelejeff have proved in their *Periodic System of the Elements*, make it extremely probable that they are not *absolute species* of ponderable matter—that is, not eternally unchangeable particles. The seventy elements have in that system been distributed into eight leading groups, and arranged in them according to their atomic weight, so that the elements which have a chemical affinity are formed into families. The relations of the various groups in such a natural system of the elements recall, on the one hand, similar relations of the innumerable compounds of carbon, and, again, the relations of parallel groups in the natural arrangement of the animal and plant species. Since in the latter cases the "af-