which rocks mainly consist; 3d, of the methods employed for the determination of rocks; 4th, of the external characters of rocks; 5th, of the internal texture and structure of rocks; 6th, of the classification of rocks; and 7th, of the more important rocks occurring as constituents of the earth's crust.

§ i. General Chemical Constitution of the Crust

Direct acquaintance with the chemical constitution of the globe must obviously be limited to that of the crust, though by inference we may eventually reach highly probable conclusions regarding the constitution of the interior. Chemical research has discovered that some sixty-four[1] simple or as yet undecomposable bodies, called elements, in various proportions and compounds, constitute the accessible part of the crust. Of these, however, the great majority are comparatively of rare occurrence. The crust, so far as we can examine it, is mainly built up of about sixteen elements, which may be arranged in the two following groups, the most abundant bodies being placed first in each list:

Metalloids	At. Wt.
Oxygen	15·96
Silicon	28·00
Carbon	11·97
Sulphur	31·98
Hydrogen	1·00
Chlorine	35·37
Phosphorus	30·96
Fluorine	19·10

Metals	At. Wt.
Aluminium	27·30
Calcium	39.90
Magnesium	23·94
Potassium	39·04
Sodium	22·99
Iron	55·90
Manganese	54·80
Barium	136·80

The sixteen elements here mentioned form about ninety-nine parts of the earth's crust; the other elements constitute only about a hundredth part, though they include gold, sil-

[1] This number has within the last few years been increased by the alleged discovery of no fewer than fourteen new metals. Some of these bodies, however, have not yet been satisfactorily proved to be new. T. S. Humpidge, Nature, xxii. p. 232.