MINERAL KINGDOM.

A Mineral may be defined as a substance having neither life, in its usual acceptation, motion nor feeling. The mineral department of Nature consequently embraces all things destitute of these properties. The Classification of minerals depends entirely on the object aimed at, and will differ with the standard assumed. It may refer to their comparative geologic age, their distribution, medicinal properties, basic characteristics, agricultural value, or their commercial importance. We have given the simplest, as it seems to us the most natural, but we are far from supposing it necessarily the best. The only characteristics upon which entire dependence may be placed are their structure and composition. Matter is known to us in three forms, solid, liquid, and aeriform. The gases constitute the first or lowest class, and throughout the whole Chart the ascending order is observed.

The great importance of a knowledge of this earliest form of matter will appear from a few facts respecting the gas, Oxygen (ὀξυς sour, γινομαι to generate). It is the most active and energetic as well as the most widely distributed agent in nature. It forms one-fifth of the atmosphere, eight of every nine pounds of water, and is supposed to form fully one-half the ponderable matter of our globe. It is the most powerful supporter of combustion, and is essential to respiration in the animal economy. Its symbol is O, combining number 8, i.e., it like all other substances combines with other materials only in definite proportions by weight and measure or multiples thereof. Its affinity for almost all the elementary substances is strong. This gas weighs 1.11, being a little heavier than air. Water at 62° Fah. for all solids and liquids, and atmospheric air for all gases are the standards in determining their specific gravity. As every person has seen more or less of the next Class—the Non-Metallics, such as Sulphur, and Carbon or pure coal, they may be passed over without occupying much space, the object of this part of the chart being to present a convenient mode of seeing the symbols, combining numbers, and specific gravities of the simple substances. Phos'phorus (φος light, φερω I carry) in union with Cal'cium and Oxygen constitutes the material of bones of animals. The substances placed in the next class, Solid-Metalloids, (metal, and ειδος like,) are by many considered as much entitled to the term Metals as those placed in the fourth Class. Sodium and