

again (to judge from the proportions of the ingredients), are aggregates of hornblende and albite (Chateau-Renard), or of hornblende and labrador (Blansko and Chantonnay).

According to the general summary of results given by a sagacious chemist, Professor Rammelsberg, who has recently occupied himself uninterruptedly, and as actively as successfully, with the analysis of *aërolites* and their composition from simple minerals, "the separation of the masses fallen from the air into *meteoric iron* and *meteoric stones* is not to be admitted in its strictest sense. Meteoric iron is sometimes found, though seldom, with *silicates* intermixed (the Siberian mass weighed again by Heis of 1270 Russian pounds, with grains of olivin), and, on the other hand, many meteoric stones contain *metallic iron*.

"A. The *meteoric iron*, whose fall it has been possible to observe only a few times (Hradschrina, near Agram, on the 26th of May, 1751, Braunau, 14th of July, 1847), while most analogous masses have already laid long upon the surface of the earth, possesses in general very similar physical and chemical properties. It almost always contains sulphuret of iron mixed with it in finer or coarser particles, which, however, do not appear to be either iron pyrites or magnetic pyrites, but a sulphuret of iron.* The principal mass of such a meteoric iron is also not pure metal, but consists of an *alloy* of *iron* and *nickel*, so that this constant presence of nickel (on the average 10 per cent., sometimes rather more, sometimes rather less) serves justly as an especial criterion for the *meteoric* nature of the whole mass. It is only an *alloy of two isomorphous* metals, not a combination in definite proportions. There are also present in minute quantity, cobalt, manganese, magnesium, copper, and carbon. The last-mentioned substance is partly mixed mechanically, as difficultly combustible graphite; partly in chemical combination with iron, and therefore analogous to many kinds of bar-iron. The principal mass of the meteoric iron contains also always a peculiar combination of *phosphorus with iron and nickel*, which, on the solution of the iron in hydrochloric acid, remains in the form of silver-white, microscopic, crystalline needles and laminae.

"B. The *meteoric stones*, properly so called, it is customary to divide into *two classes*, according to their external appearance. The stones of one class present, in an apparently homogeneous mass, grains and splinters of *meteoric iron*, which

* Rammelsberg, in Poggendorff, *Annalen*, vol. lxxiv., 1849, p. 442.