

mixture of oryctognostically distinct crystalline components! These differences have led mineralogists to separate these cosmical masses into two classes, namely, those containing nickeliferous meteoric iron, and those consisting of fine or coarsely-granular meteoric dust. The crust or rind of aërolites is peculiarly characteristic of these bodies, being only a few tenths of a line in thickness, often glossy and pitch-like, and occasionally veined.* There is only one instance on record, as far as I am aware (the aërolite of Chantonmay, in La Vendée), in which the rind was absent, and this meteor, like that of Juvenas, presented likewise the peculiarity of having pores and vesicular cavities. In all other cases the black crust is divided from the inner light-gray mass by as sharply-defined a line of separation as is the black leaden-colored investment of the white granite blocks† which I brought from the cataracts of the Orinoco, and which are also associated with many other cataracts, as, for instance, those of the Nile and of the Congo River. The greatest heat employed in our porcelain ovens would be insufficient to produce any thing similar to the crust of meteoric stones, whose interior remains wholly unchanged. Here and there, facts have been observed which would seem to indicate a fusion together of the meteoric fragments; but, in general, the character of the aggregate mass, the absence of compression by the fall, and the inconsiderable degree of heat possessed by these bodies when they reach the earth, are all opposed to the hypothesis of the interior being in a state of fusion during their short passage from the boundary of the atmosphere to our Earth.

The chemical elements of which these meteoric masses consist, and on which Berzelius has thrown so much light, are the same as those distributed throughout the earth's crust, and are fifteen in number, namely, iron, nickel, cobalt, manganese, chromium, copper, arsenic, zinc, potash, soda, sulphur, phosphorus, and carbon, constituting altogether nearly one third of all the known simple bodies. Notwithstanding this similarity with the primary elements into which inorganic bodies are chemically reducible, the aspect of aërolites, owing to the mode in which their constituent parts are compounded, presents, generally, some features foreign to our telluric rocks and minerals. The pure native iron, which is almost always

* The peculiar color of their crust was observed even as early as in the time of Pliny (ii., 56 and 58): "colore adusto." The phrase "lateribus pluisse" seems also to refer to the burned outer surface of aërolites.

† Humb., *Rel. Hist.*, t. ii., chap. xx., p. 299-302.