

reply. "It was formerly the general opinion that pumice was a volcanic product, because it frequently occurs in countries conjectured to be of igneous formation. It is now ascertained to be an aquatic product, from the following facts: 1, It alternates with Neptunian rocks, as basalt and porphyry; 2, it is most distinctly stratified; 3, it passes into obsidian and pearlstone, and is thus connected with basalt, pitchstone, etc.; 4, it contains water of composition, which is never the case with true volcanic rocks; 5, it has never been observed to flow in streams from the crater or sides of a volcano, and no one ever saw it forming a stream in countries containing extinct volcanoes."¹

Well might the inquirer retire in despair from such an encounter. In vain would he have sought an explanation of the origin of the vesicular structure of the rock, or have asked how this structure could ever have originated from an aqueous solution. He would probably have been plied with a few more "facts" of equal veracity, and a few more examples of reasoning in a circle. But he would never succeed in extracting an expression of doubt, or an admission that the *ipse dixit* of the Freiberg professor could for a moment be called in question.

The same attitude which Werner assumed towards volcanoes was consistently maintained by him in his treatment of the proofs of disturbances in the terrestrial crust. He seems never to have realized that any reservoir of energy is stored up in the interior of our globe. It was part of his teaching that the spheroidal form of the planet furnished one of the proofs of a primeval

¹ Jameson, *op. cit.* p. 196.