

than to supply it with the metals. God, therefore, has so distributed the ores as to stimulate man to explore and reduce them, while he has placed so many difficulties in the way as to demand much mental and physical effort for their removal. Man now, therefore, receives a double benefit. While the metals themselves are of immense service, the discipline of body and mind requisite for obtaining them is of still greater value. This is the combined result of infinite wisdom and benevolence.

If I mistake not, there is such a relation between the amount of useful metals and the wants of society as could have resulted only from divine benevolence. The metal most widely diffused, and the only one occurring in all the rock formations, from the oldest to the newest, is iron; the metal by far the most important to civilized society. This is also by far the most abundant, and easily obtained. It often forms extensive beds, or even mountain masses upon the surface. All the other metals are confined almost exclusively to the older rocks. Among them, lead, copper, and zinc are probably most needed, and accordingly they are next in quantity and in the facility with which they may be explored. Manganese, mercury, chrome, antimony, cobalt, arsenic, and bismuth are more difficult to obtain; but the supply is always equal to the demand. In the case of tin, silver, platinum, and gold, we find some interesting properties to compensate in a great measure for their scarcity. Gold and platinum possess a remarkable power of resisting those powerful agents of chemical change which destroy every thing else. They are never oxidized in the earth, and with a very few exceptions, the most powerful reagents leave them untouched, while platinum will not yield in the most powerful heat of the furnace. Gold, silver, and tin are capable of an astonishing extension, whereby they may be spread over the surface of the more abundant metals to protect and adorn them; and since the discovery of the galvanic mode of accomplishing this, so easily is it done, that I know not but a gold or silver surface is to become as common as metallic articles.

*My fifth geological argument for the divine benevolence is derived from the joint and desolating effects of ice and water upon the earth's surface, both before and after man's creation.*

In northern countries, and perhaps in high southern latitudes, it seems that after the deposition of the tertiary rocks, and