water saturates. Here is black muck—a fine peaty material—but it is colored and charged with this ocherous deposit. After some years, the peaty matter decays, and disappears, to some extent. Then we see the iron compound aggregated and compacted in irregular masses. It has now become *bog iron ore.* It is a kind of *limonite*, so-called. It can now be smelted in a furnace and the pure iron extracted.

If this swamp should be sunken below sea-level, and heavy layers of marine sediments spread over it, the bog ore would be compressed into a compact stratum. Then if all these formations should be converted to solid rock, our bed of bog ore would be exactly such a bed of limonite as we actually find in some situations deep in the rocks. It would be an old fossil swamp. But suppose some thousands of feet of sediments should be piled over it. Then the heat of the earth's interior would come up and bake the ore-bed. Very likely the water would be expelled from our limonite, and it would become simply a peroxide—it would assume a red color—it would be *hæmatite*, which means blood-red ore. Now such beds of hæmatite form many of our most valuable deposits of iron ore. Much of the ore in the Lake Superior region is of this kind—also in Northern New York and in other regions. But if this old hæmatite is left exposed to water for some years—if the bed becomes soaked with water, it changes back to limonite; it becomes yellow and somewhat soft. The miners sometimes call it "soft hæmatite." It is easily quarried and easily smelted, and every body likes it—though ton for ton of ore, it contains less iron than hard or true hæmatite.

I do not assert that all limonite and hæmatite have come into existence in this way. But I am sure this theory is highly plausible for some beds of iron ore. But now, I have noticed iron ores in such situations that perhaps a different explanation is more reasonable. I have seen great masses of iron ores inclosed in the midst of great stratified formations. The ore-masses are huge lenticular accumulations—sometimes of great purity, sometimes mixed with rocky matter, sometimes bounded abruptly, and sometimes blending gradually with the contiguous