

## XXII. THE KING OF METALS.

## IRON AND ITS GEOLOGY.

THE most useful of the metals is most abundant and most universal. Iron is found in formations of every age, from the Laurentian of the Eozoic to the Quaternary and even the bogs which are forming in the age of man (Compare Talk V.) As Iron has its innumerable uses wherever man makes his dwelling on the earth, so Providence has distributed the metal to all communities. It may be of interest to point out the fact that we find iron most useful, not because most abundant and most accessible, but because its properties give it preëminent superiority. Gold and silver and platinum are wanting in the hardness and rigidity which suit iron to many of its most important adaptations. Neither of these metals could be made into useful rails for the steam train to move on. Neither would furnish a tool having the edge and temper of fine cutlery. Iron has been brought so universally into subservience to human wants, not because it is available, but because it is at once most suitable and most available. The wide applications of iron are not the outcome of any fortuitous circumstances, but a result of coördinations planned in the constitution of things.

Iron is almost universally disseminated, as a constituent, through the rocks and minerals. It sometimes imparts a black, and sometimes a red or yellowish color; and many times its presence is unannounced by any color. This red soil which, in some regions, prevails extensively, is colored by iron. This red sandstone is colored by iron, this red shale, this red brick—like this red rust on the stove-pipe. This yellow precipitate in the bottom of the stream is the same with water in combination. These are *oxides*. Now please, don't be impatient at the mention of a chemical term. They hold all the oxygen which the iron can take, and hence they are called *peroxides*. But the yellow oxide holds water also, and hence is known as a *hydrated peroxide*. Now follow this hydrated peroxide—this yellow ocher—down to the bog which the