

Iron is not only a valuable substance as connected with the arts, but it is so abundant in rocks, as to derive importance as a constituent of the earth's crust. It may also be detected in animals and vegetables, and frequently acts as a colouring matter. Iron has been rarely found in a native state, except in meteoric stones, which also contain nickel and cobalt. It is frequently combined with oxygen and sulphur. Those minerals which contain iron in sufficient quantity, and in such a state as to admit the extraction of the metal for economical purposes, are called ores of iron.

Manganese is never found in a metallic state, for it has so great an affinity for oxygen, that it is oxydised by mere exposure to the air. It was first procured in a metallic form by Gahn, in the year 1775. Manganese is a bright metal, of a darkish-white colour, brittle, but hard. It combines with oxygen in five different proportions, and in these states is found in nature, but not in great abundance.

Nickel is a white, ductile, malleable metal. Its principal ore is a copper-coloured mineral, called kupfer, or copper nickel, which is an arseniuret. It is not abundant as a mineral, but is found in nearly all meteoric stones.

Cobalt is a grayish-coloured metal, brittle, and difficult of fusion. Both cobalt and nickel obey the magnetic force. The ores of cobalt are procured from Sweden, Saxony, and from some parts of England.

Cerium was discovered in the year 1804, but its properties are not known, and it has been obtained only in very small quantities.

Zinc is one of the most combustible of all the metals, has a bluish-white colour, laminated texture, and great fusibility. Calamine, a native carbonate, and blende, a native sulphuret, are its most important ores.

Cadmium is a soft, ductile metal, usually found in combination with zinc. It was discovered in an oxyde of zinc, in the year 1817, by Stromeyer.

Lead is chiefly obtained from a mineral called galena, which consists of lead and sulphur. The ores of this well-known metal are very abundant, and the metal itself is extensively employed in the arts.

Tin was known to the ancients, and Cornwall has been long celebrated for its production. It chiefly occurs as an oxyde among the primitive rocks. Tin is a white, malleable