After the fall of the Roman Empire in 476 AD, there was little progress in the working of metals for many years. Iron-smelting, tin and lead mining, and the general metal-working developed by the Romans in occupied countries almost ceased. What metal-work was still carried on was of poor quality. Then, about 800 AD, a new power entered northern Europe - the Vikings. These men from the north, Norsemen, were great seafarers and fighters. They owed much of their success to their skill with metal. Their swords were much longer and stronger than those used by the Romans, and with these they won their battles. In those days it was difficult to make good swords because of the lack of furnaces hot enough to melt iron sufficiently to treat it with carbon and turn it into steel. All that could be done was to heat the iron in charcoal, which is rich in carbon. Some carbon from the charcoal found its way into the metal and hardened it on the surface, like the crust on a loaf. The swordmakers built up their blades by taking a number of thin strips, which had been hardened on their surfaces, and twisting them together in various patterns. The metal was then reheated and hammered (forged) until it became a solid piece with hardened strips running right through the blade. As well as making blade strong, this method also created an interesting wavy patterns on the metal.

Gold - a soft yellow, corrosion-resistant element, the most malleable ductile metal, occuring in veins and alluvial deposits and recovered by mining, or by panning sluicing. It is a good thermal and electrical conductor, generally alloyed to increase its strength, and used as an international monetary standard, in jewelry, for decoration and as a plated coating on a wide variety of electrical and mechanical components. Silver - a lustrous white, ductile malleable metallic element, occuring both uncombined and in ores such as argentite, having the lightest thermal and electrical conductivity of the metals. It is highly valued for jewelry, tableware and other ornamental use, and is widely used in coinage, photography, dental and soldering alloys, electrical contacts and printed circuits.

Thomas, Sidney Gitchrist (1850 - 1885), a British metallurgist. Educated at Dulwich college. Served as a clerk at the Court of London and attended evening lectures at the Royal Mining School. While looking for ways and means of making steel from high-phosphorus pig iron in the Bessemer converter, he devised (with assistance from his cousin Peter Gilchrist) in 1878 what later became known as the Thomas-Gilchrist process in England or the Thomas process on the continent. Took out several patents covering the process between 1877 and 1882. Predicted that the high-phosphorus slag from his process could be used as a soil conditioner and stimulant to plant growth.

During the 14th and 15th centuries England continued to import iron and steel from the continent. The growing importance of the industry gave its owners a political influence that grew steadily from that day to this. Improvements in the manufacture of iron had taken place during this period, and the ironmasters succeded in getting Parliament to make laws prohibiting the importation into England of any iron or steel goods already made there. In 1483, for example, an Act was passed prohibiting the importation of knives, tailors' shears, scissors and irons, grid-irons, stock-locks, keys, hingers, spurs, bits, stittups, buckles for shoes, iron wire, iron candlesticks, grates and many other such objects.