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The history of metal smelting dates back to the 3rd millennium B.C. in the South Asian countries. First copper, then copper alloys and much later iron was smelted. Iron smelting in Peninsular India may have occurred in the first millennium B.C., while iron technology was introduced to Sri Lanka around eighth century B.C. The process associated with iron industry and uses of resources were studied by us using archaeological, textual, ethnological and material data. The furnaces used in India and other South Asian countries were studied by using archaeological publications. Local furnaces were studied by using ethnological and material data other than archaeological publications. Material data collected at the excavations carried out at Ridiyagama, Samanalawewa, Alakolawewa, Akurugoda metal smelting sites were studied. Selected traditional craft villages from different geographical and eco-zones were studied. The furnace was designed to generate, increase and decrease as well as sustain the heat. Originally the pottery kiln may have served as a prototype to the furnace. Twelve types of metal smelting furnaces have been used in South Asia. At least 8 of these have been documented in Sri Lanka.