Abstract

The province, Lorestan, located in the central Zagros, has many historical hills, where many bronze and iron works are discovered. One of the historical hills in this region that has been recently discovered is Sangtarashan historical region, Khoramabad. This region is located ٥٢ kms far from the south east of Khoramabad in a village named "Sangtarashan". Sangtarashan historical region is a monolayer site in archaeological explorations, where many metal works are discovered, including dagger, sword, the blade of the axe, the head of the arrow, tubular vessels, etc. Among the daggers found in this region, there are five iron daggers whose handles are similar to those of the bronze daggers of this region, but they are more damaged. According to the lower number of iron daggers than the bronze daggers, and the lack of information about the historical irons of Lorestan, the iron daggers were selected for the study.

The purpose of the research on the iron daggers of Sangtarashan historical region, Khoramabad, is to understand the technology of making iron objects in Sangtarashan historical region and the iron era (II). In addition, according to the level of the corrosion of these objects, and also for controlling the way they are corroded to prevent them from being more damaged, pathological studies are required.

This research is organized in five chapters. In the first chapter, an overview is presented. In the second chapter, Sangtarashan region and the works discovered in it are introduced. Chapters ٣ and ٤ deal with respectively the technological and pathological studies on the objects being studied and the fifth chapter includes the plan of protecting and restoring the objects based on the data of the technological and pathological experiments. Metallographic experiments, the elemental analysis of scanning electron microscope, the analysis of determining the amount of carbon existing in the metal body of the samples and the computed tomography scanning are used to achieve the technology of making the daggers being studied. Phase analysis of x-ray scattering is also used for pathological studies.

The results obtained from these studies showed that the objects being studied are made of the wrought iron, whose elements are unintentionally embedded it in and are not corroded destructively and inactively.

Keywords: iron dagger, iron age (II), wrought iron, slag stringer, corrosion