

Theeraporn Chuenpee 2014: Application of Geoarchaeological and Archaeometrical Techniques to Archaeometallurgical Evidence from Northeast Thailand. Master of Science (Earth Science and Technology), Major Field: Earth Science and Technology, Department of Earth Science. Thesis Advisor: Mr. Krit Won-in, Ph.D. 182 pages.

When a metallurgical history in some region in Southeast Asia, especially in Thailand, is written, the main substance on copper and iron seem likely to concentrate on three topics. One of these has already aroused lively interest of production technology that could provide clues to the metal working technology and process in the past. The other one is equally puzzling and interesting: the question of the date when copper and iron came into use. Lastly one is the relationship between metallurgical site and geomorphological feature. Unfortunately, in the past several decades, they were still unknown in almost part of the mentioned regions. This study essays a preliminary treatment of these three topics. In this study, archaeometallurgical evidences concerning with copper and iron, namely metallurgical slags, smelting furnace fragment, their associated finds (potsherds and baked sediment), and also the geomorphological features of each study area, were investigated by geoarchaeological and archaeometrical techniques. Four interesting study areas are located in northeast Thailand. The results indicated that, the smelting activity occurred in four study area during the Ancient Time. In addition, four sites tend to be located in floodplain or terrace close to water space. The Ancient Time Non Nong Hor copper process may be used the oxidic copper ores with sulphidic copper ores or a dead-roasting of ore charge before smelting, the smelting process was at high enough temperature to afford good liquation of the metal through the slag. Whist, the iron production at Krok Kroy, Ban Saitho 7 and Ban Khao Din Tai slag evidence is entirely consistent with the expect waste product of the bloomery iron-making process or direct smelting process).

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