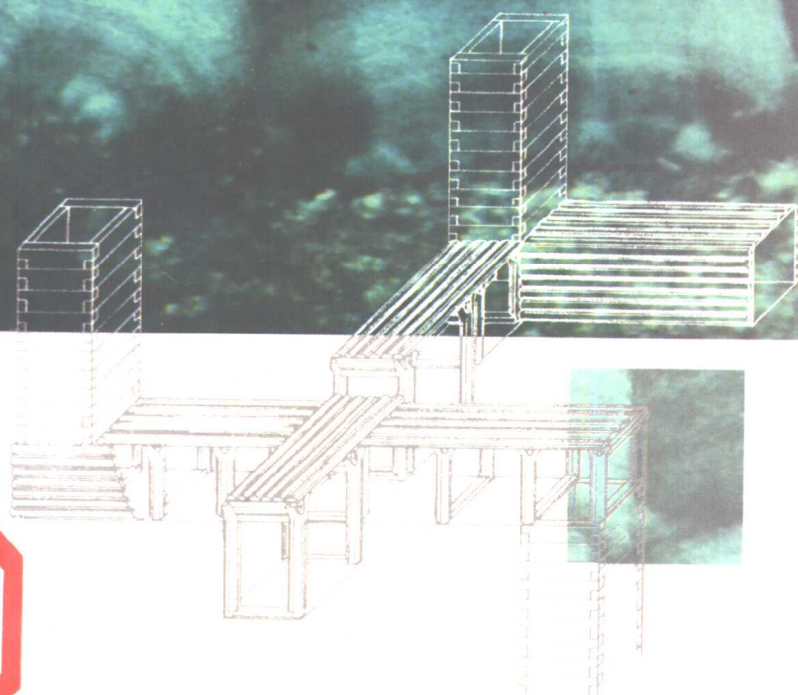
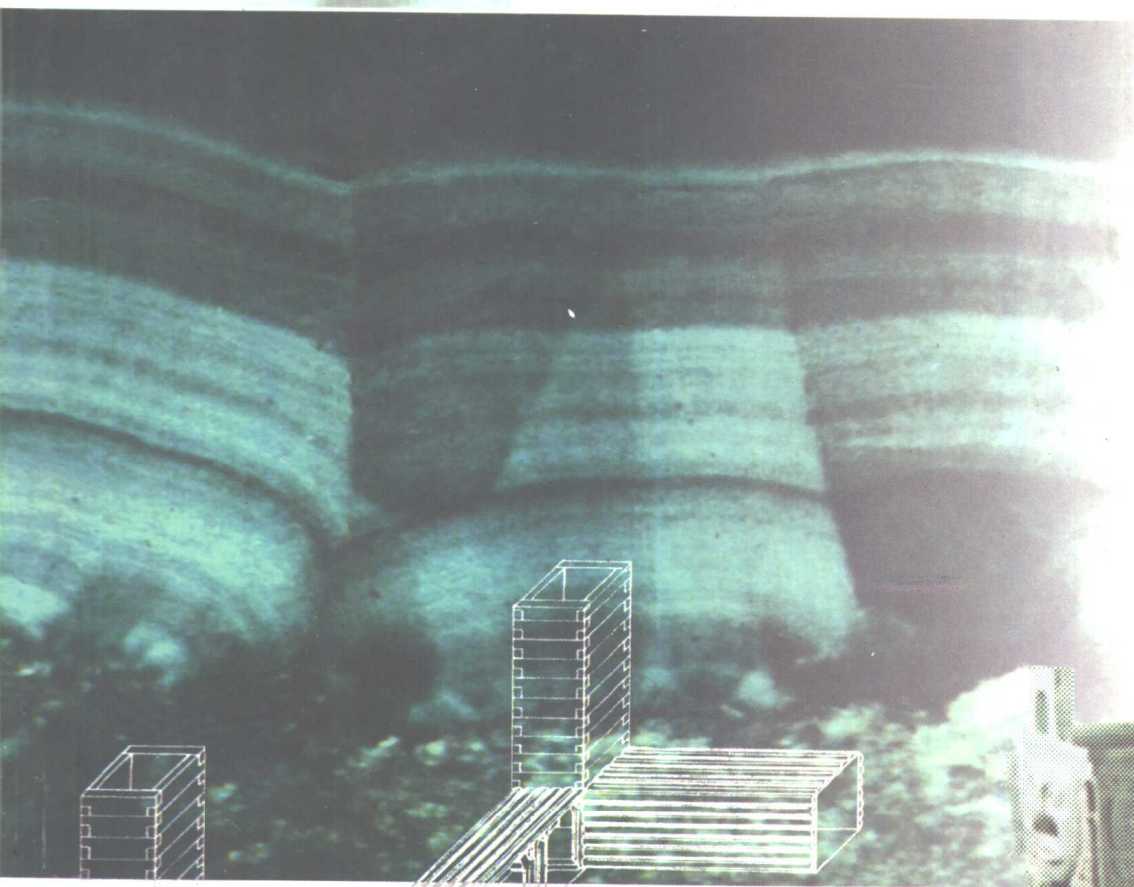


铜岭古铜矿

遗址发现与研究



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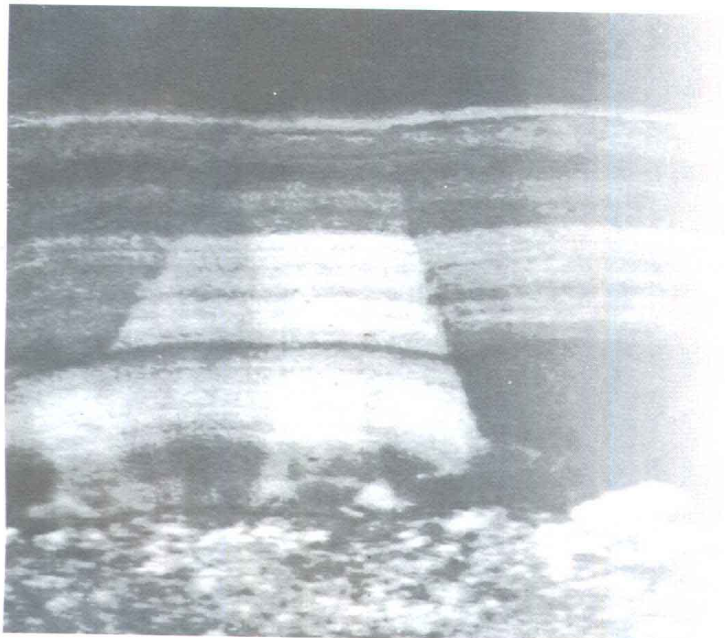
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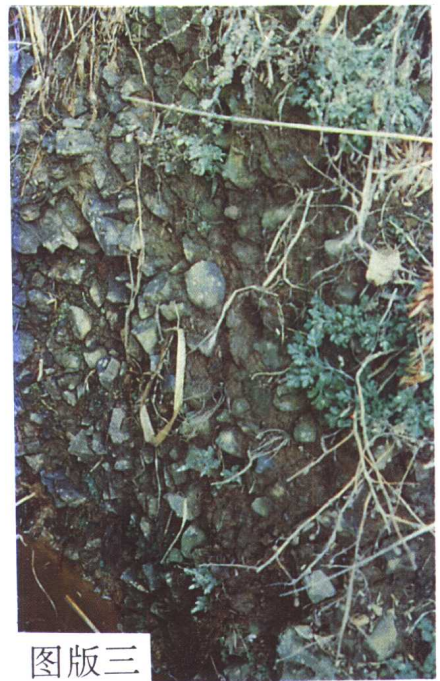
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图版一 铜岭采矿遗址



图版二 P2 竹木编壁

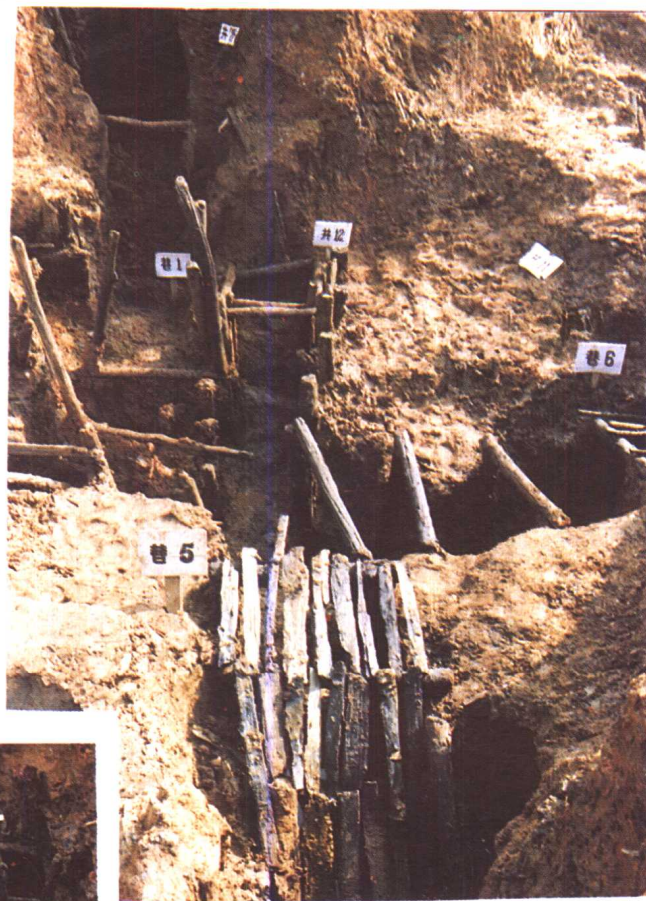


图版三

铜岭冶炼区炼渣堆积



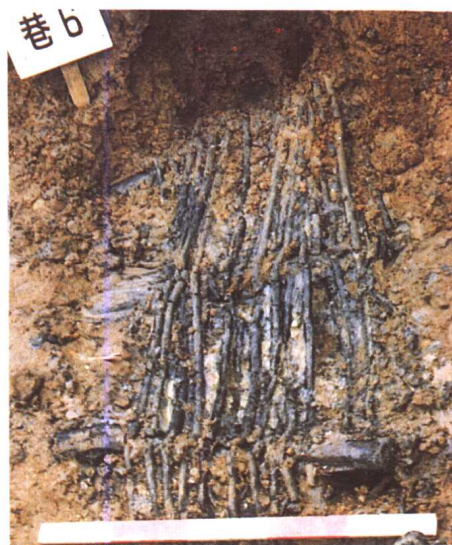
图版四 选矿木溜槽



图版五 T14 井巷



图版六 T14 井巷



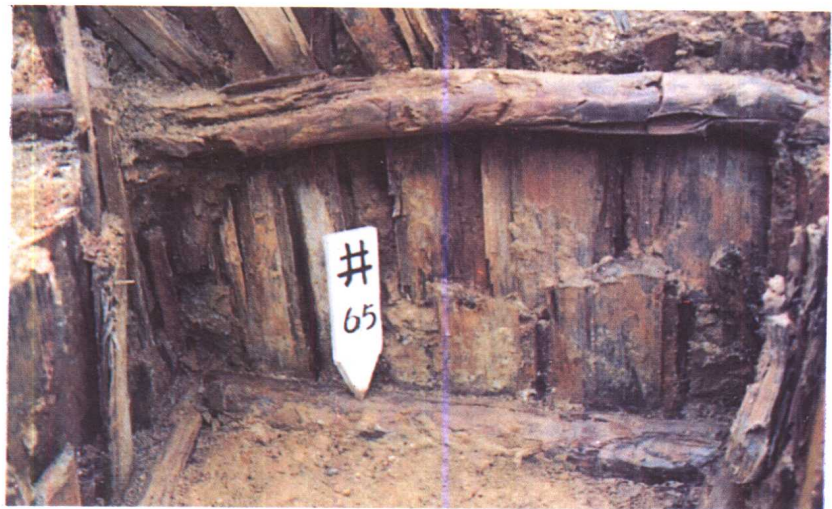
图版七 X6 顶棚



图版八 X2



图版九 J94 : 1 木桶



图版十
J65 木框架结构

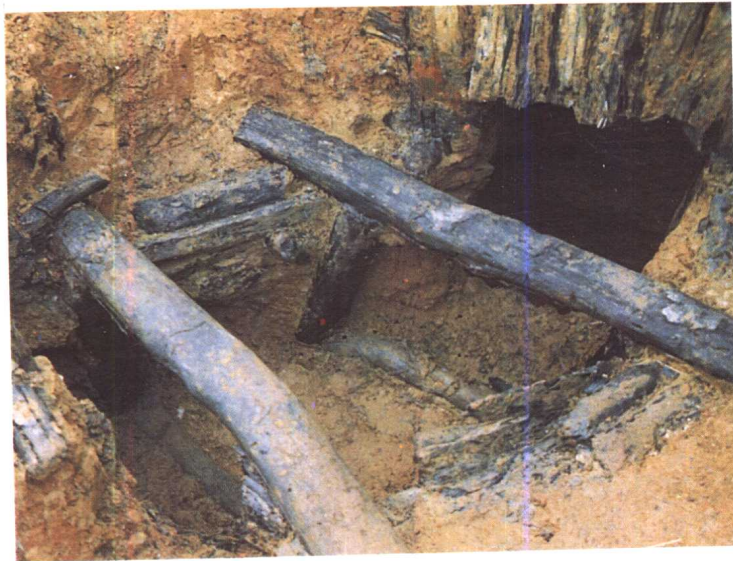


图版十一

C2

图版十二

J40 内出土孔雀石 自然铜

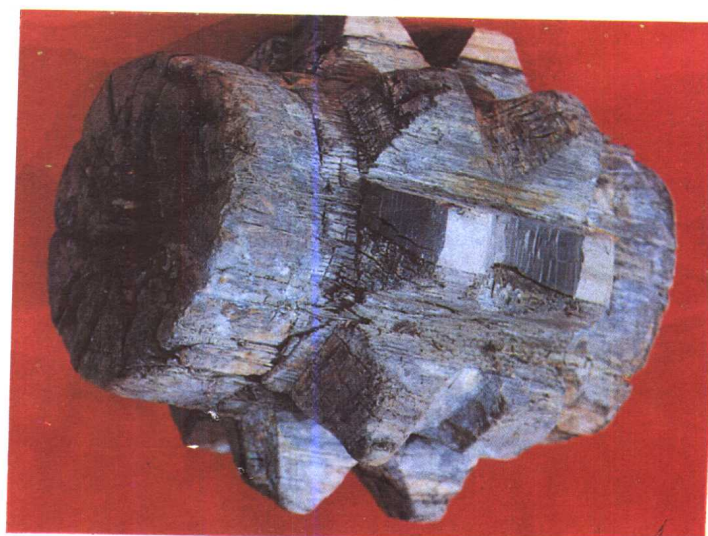


图版十三 J57 X 17 马头门处



图版十四

J29 木框架结构



图版十五

93 采 : 1 木滑车



图版十六

93 采 : 4 淘沙木斗



图版十七 J90 木框结构



图版十九

J37 木梯结构



图版十八 X2:2 木锹

图版二〇
J81 木框架结构





图版二一 89 采 : 1 木滑车



图版二二

J19 : 7 竹筐



图版二三

X1 : 6 竹筐



图版二四

93 采 : 3 木锤



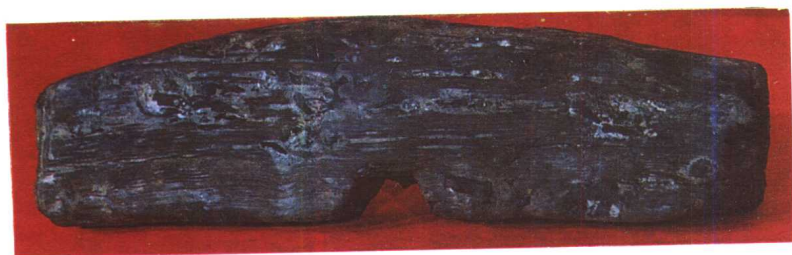
图版二五

88 采 : 8 铜凿 T3⑧B : 3 铜铤
88 采 : 9 铜铤 T2⑨C : 8 铜铤

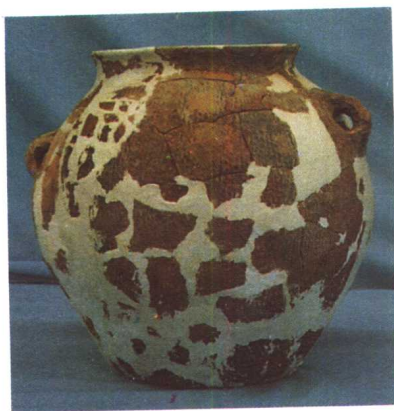


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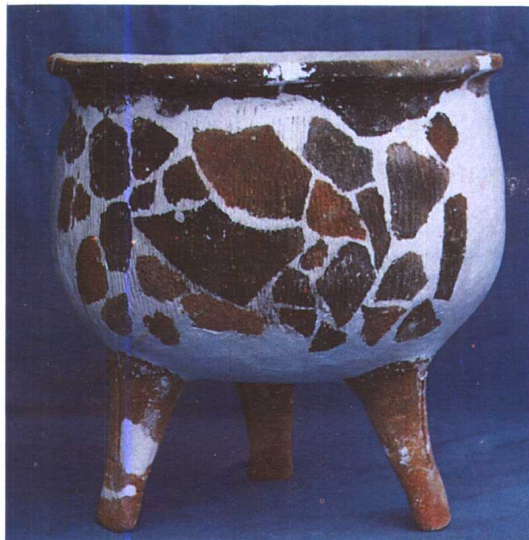
冶炼区邹家
H1 : 2 青瓷罐



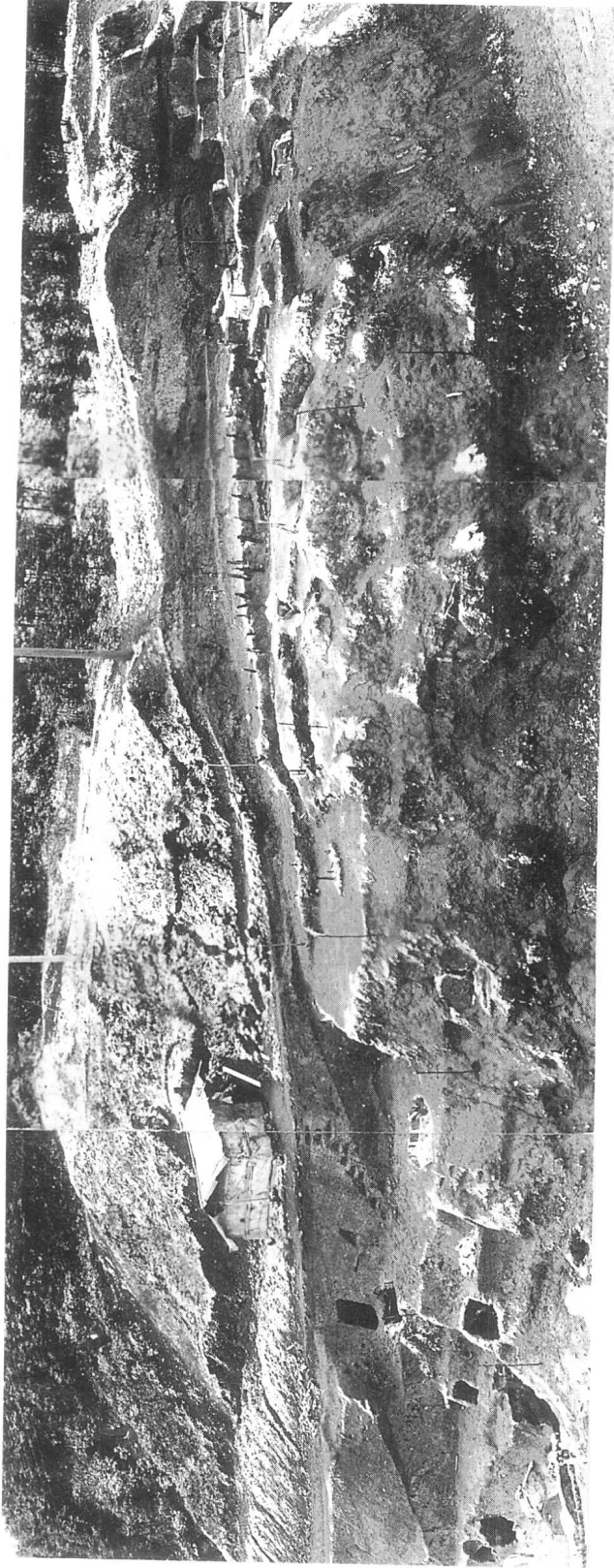
图版二七 93 采 : 2 弓形木



图版二八 T2⑨C : 7 陶罐



图版二九 T2⑨C : 4 陶鼎

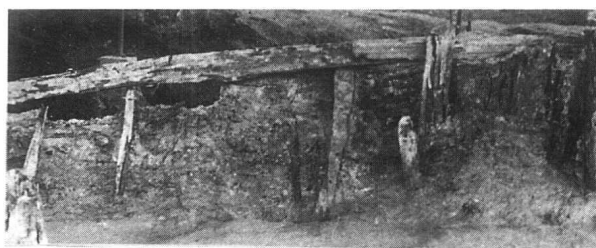


图版三〇

铜岭采矿区发掘图照



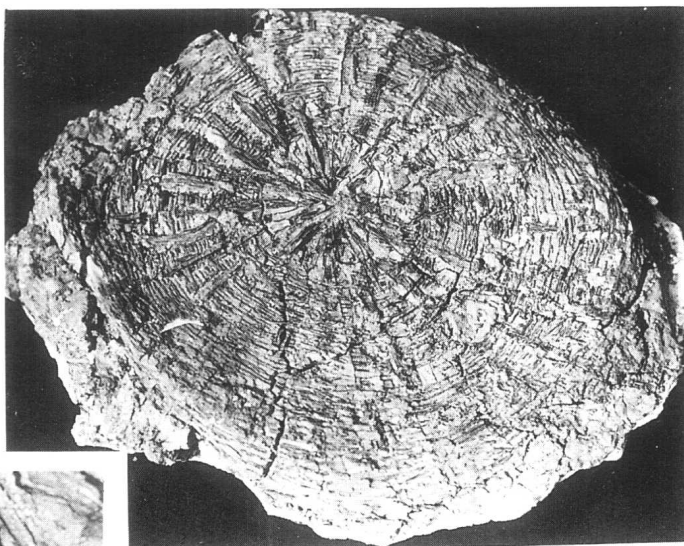
图版三一 J57 木框架结构



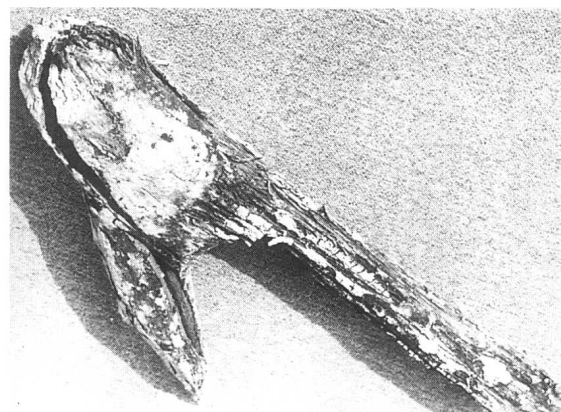
图版三二 W.A

图版三三

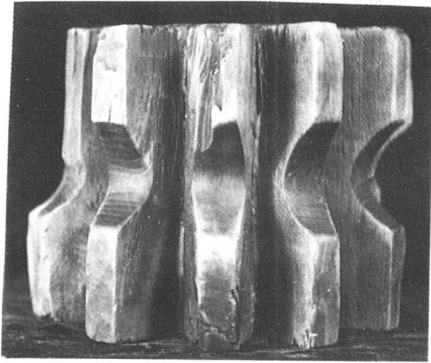
J13 : 1 淘砂竹盘



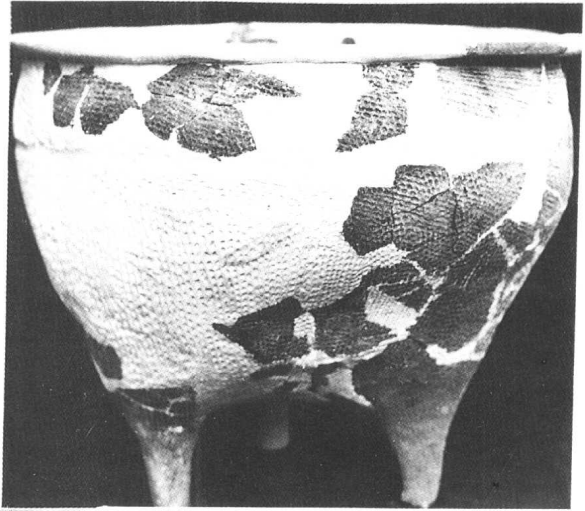
图版三四 J11 木框架结构



图版三五 J2 : 1 木钩



图版三六 C2 : 15 木滑车



图版三七 T1⑧A : 1 陶鬲



图版三八 C2 : 27 木铤



图版三九 J11 : 1 陶鬲



图版四〇

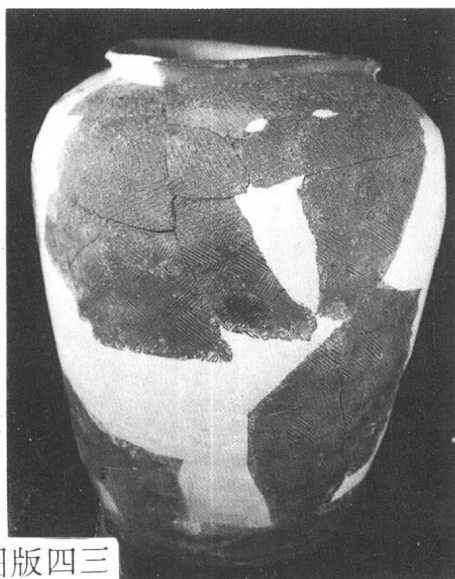
T5⑨D : 2 陶鬲



图版四一 P1 : 2 陶罐



图版四二 选 : 1 陶罐



图版四三

冶炼区铜石坡 H2 : 4 陶罐



图版四四 T6⑦ : 1 陶罐

EXCAVATION AND ANALYSIS OF THE TONGLING ANCIENT MINE: THE REMAINS OF AN ANCIENT COPPER MINE

English Abstract

Tongling is an ancient mine site located along the southern bank of the Yangtze River at Xiaban village, Reichang city, Jiangxi province. The site was discovered in 1988 and subsequently excavated for four years (1988—1992) by The Jiangxi Archaeological Institute and The Reichang Museum. Important archaeological data pertaining to ancient mining have been recovered from the site. The ancient mine dates to ca. 2500—3300 B. P.

The site consisted of both a mining and smelting area. The mining area occupied more than 60,000m², and the smelting area occupied about 10,000m². An ancient cinder deposit, about 2—3 meters thick and weighing more than 300,000 tons was located near the smelting area. Many archaeological data have been obtained from the mining area; they pertain to open-pit features, shafts and galleries propped up by mine timbers, an ore-dressing area, and work sheds. Among the artifacts recovered were mining tools, mine haul, and articles for daily use. The analysis of the stratigraphy, ¹⁴C dates obtained from the mine timbers, and pottery classification indicate that the ancient copper mine was used from the middle Shang period to the early Eastern Zhou Dynasty.

During the early period mining focused on the open pits and the upper levels within the shafts. During the later period mining activity occurred mainly in the lower levels of the shafts. Some of these shafts were as deep as 30—40 meters below the current surface. Several techniques found in the ore-dressing area were advanced compared with those found in other ancient mines in the world. These techniques included the use of wooden sluice, draw water washing, and ore-dressing circuits. Some of the hoisting machines found in the mining area are the earliest of their kind. These machines include wooden leverage, wooden pulley, and wooden winch types.

The Tongling ancient mine is the earliest large mine found in China to date, and its discovery is significant for Chinese archaeology. The recovery and analysis of Tongling ancient mine should be extremely valuable for studying the history of metallurgy and reconstructing ancient mining techniques in China and comparing them with techniques used elsewhere in the world.

Today the lower and middle Yangtze area of China is famous for its rich copper mineral resources. Since the 1970s, several large copper mines have been exploited in the area, among them Tonglushan mine and Gangxia mine in Hubei province, Tongling mine and Nanling mine in Anhui province, and Mayang mine in Hunan province. The location of these modern copper mines suggests that the lower and middle Yangtze area was an important source of raw materials for the bronze industry in Chinese history. The discovery of the Tongling ancient mine indicates that Chinese Bronze originated and was independently developed in China.

This collaborative study was directed by Liu Shizhong, Associate professor in Jiangxi Archaeological Institute, and the study was supported by the Chinese Social Science Foundation. The book, published by Jiangxi Scientific Press, consists of three parts: archaeological findings, archaeological analyses, and appendix. The archaeological findings report on the excavations, which document in detail the data recovered from the site. The archaeological analyses consist of several multidisciplinary research papers, including such subjects as the nature of the copper mine, mining techniques, ore dressing techniques, reconstruction of mining machines, the trade of raw materials, testing the depth of the shafts. The appendix includes C¹⁴ dates, the wood identification of mine timber, the metal identification of raw materials, and the identification of the cinder.