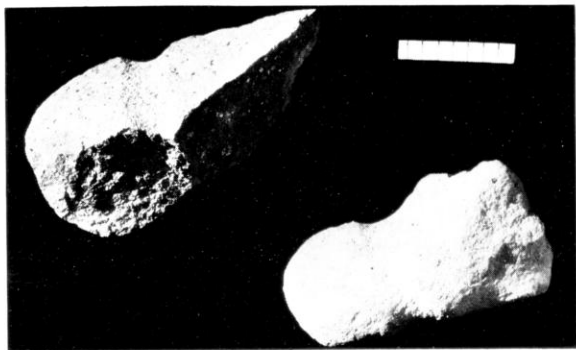


'Missing Link'

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round the eastern side of Rio Tinto, searching systematically for any clues. More pieces of malachite turned up, and eventually one day I found myself in front of a great cliff of shale, topped with gossan. There, I saw a huge cavity, which looked somewhat odd, and on closer examination, I could see a primitive shaft leading into it.

"Our Spanish geologist confirmed that this was most likely an ancient mine, but it was not yet possible to



Stone mining tools, dating to the 3rd or 4th millennium BC, discovered at Rio Tinto. These are the earliest mining tools yet found in Europe

determine what material was mined there. However, outcrops of copper or ore could have been located everywhere in this area and the ancient miner would naturally have probed them.

"A few days later, a young amateur archaeologist who lives nearby showed me two stone chisels, or axes, and a small bowl that he had found close to the village of Nerva. When we later visited the spot with him we found the remains of a roughly-excavated cist tomb, related to the Argar culture of Southern Spain, the early 2nd millennium BC. Surface finds indicate the presence of more similar

burials in the area.

"This was the 'missing link' in Rio Tinto's history, the link between the earliest mining — dated by us to the beginning of the Early Copper Age (the Chalcolithic period, 4th-3rd millennium BC) — and Rio Tinto's large silver and copper industry of the 1st millennium BC.

"The discovery of cist tombs near Nerva is not, of course, proof that mining took place there in the 2nd millennium, but it does show that there was a community, and I cannot imagine that people would have come to these mountains for any other reason as the agricultural potential must have been virtually nil. However, this is something that we have to investigate further".

Tartessian era

A preliminary appraisal of Rio Tinto's mining history indicates that the story began in the 3rd, or perhaps the 4th, millennium BC, with mining with primitive stone tools, and presumably, simple, hole-in-the-ground smelting. The area continued to be inhabited during the 2nd millennium, and then again around 1,000 BC when silver mining and smelting began on a large scale. This was the era of the Tartessians, whose industry and riches first drew the Phoenicians to trade with this part of the world.

Silver mining continued in the Iberian and Roman Periods, though it would appear that the Romans did not at first concern themselves greatly with the actual production of the metal; it was not until the reign of Augustus and the strengthening of the Roman hold over Southern Spain that they took over the operations with hardly any improvements to the metallurgical processes.

Copper is a different story: the slag heaps prove that it was the Romans who began copper production on a big industrial scale. There is also now evidence of iron-making and iron-working in Roman Rio Tinto.

International symposium at Timna in September

The first in a series of international symposia, to be held every two years at the major centres of ancient metal production, is to take place from September 14 — 19, 1981, at Eilat in Israel, centred on the Timna Valley and other important sites in the district.

The idea for a bi-annual symposium at the site of some of the most important archaeo-metallurgical discoveries has been initiated by IAMS, but the conferences will be planned and organized in collaboration with scientific institutions of the host country. The event will combine a series of papers and discussions with tours of the archaeo-metallurgical and related archaeological sites. Where possible, tours will include visits to museums and to sites of significance to the cultural background of the ancient metal industries.

The Timna symposium has been convened in collaboration with the Israel Institute of Metal, Technion-Israel Institute of Technology, Haifa, and the Institute of Mining and Metals in the Biblical World, Museum Ha'aretz, Tel Aviv. Mornings have been reserved for visits to the sites; afternoons and evenings for lectures and discussions; and there will be optional additional days for visits to Jerusalem, Tel Aviv (the Timna Pavillion), Haifa, the Negev and Galilee. It is also hoped to arrange visits to Sinai and Egypt.

Application forms and further details can be obtained from:

The Organizing Committee,
First Symposium on Archaeo-Metallurgy,
PO Box 29784,
Tel Aviv, Israel.