



## COPPER HISTORY

The native copper, the first metal used by the man, was already known by some of the most ancient civilizations of the history of mankind. The history already confirms his use more than 10.000 years. The most ancient mentions to the use of this noble metal come from the Bible, the Old Testament, where we can read about the son of Lameque and Zila, « *Tubalcaim*», master of whole work of copper and iron (Gn 4:22, " that who forged all the cutting instruments of copper and iron ".

In the book of the Exodus we have also examples of his use in the construction of the temples, like in Exodus 38:1 - 38:20. The magnificent columns of the Solomon Temple, were made in copper as it is mentioned in 2 Chronicles 3:17, " In front of the temple itself there is a great porch that is lifted up to 120 côvados (53,4 m) of height. There are, before the porch, two immense columns of copper, one called Jaquim, which it means " Which God Establishes Firmly", and other called Boaz, which means " In strength ". "

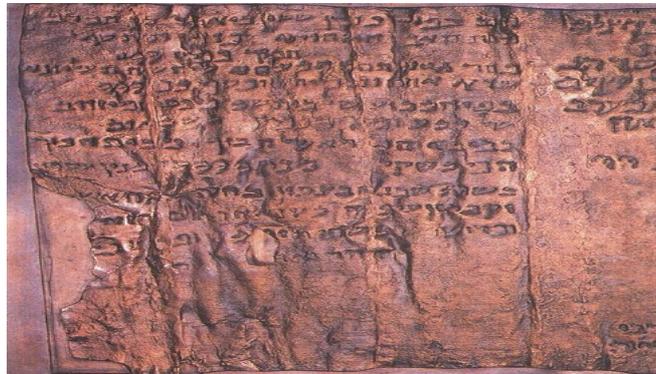


Other example of the presence of copper in the Bible, is the mysterious copper scroll of Qumran, part of the Dead Sea scrolls. Was a scroll composed by a fine leaf of copper, where it was written an inventory of a treasure hidden by the " *Essénios*", and that was never found.

These are some of many examples of the use of copper in the Bible, used by the most ancient civilizations that the world already known. When in 1936, a group of workers were excavating the ruins of a town called Khujut Rabu, with more than 4000 years old, near Bagdad, in Iraq, they discovered a disconcerting object. There was a small pot of clay inside which there was a tube done from copper plate, with a diameter of approximately 2,5 cm. for approximately 10 cm of long. The base of the tube was sealed by a disc, also in copper.



An iron bar, apparently corroded by acid, was jutting out through an asphalt lid in the superior part. To beginning it was catalogued like object of worship and put in the section of religious archaeology of the Bagdad Museum. Up to what the German archaeologist, Wilhelm Konig, who in the opportunity was living in the Iraq, examined the object and came to a surprising conclusion: if the tube had been filled out by an acid solution, it had worked like an electric rudimentary battery.



The principal deposits of copper of ancient world were located in the Sinai, in Syria, in Afghanistan, in Cyprus, in the Macedónia, in Ibéria and in Central Europe. The principal European Bronze mines were located in Austria, Germany, France, Spain, Portugal, Greece and Tirol.

Where actually is the north of Iraq, was found a 11.000 years old copper necklace; however the accidental discovery of the metal could have take place several millenniums before. In 5.000 B.C. there was already happening the fusion and refinement of copper from oxides like the malachite and azurita.

Also have been discovered coins, arms, 5100 years old sumer copper and bronze domestic utensils, as well as Egyptians of the same time, including copper tubes. The Egyptians also discovered that the addition of small quantities of tin make more easy the fusion from the metal and have perfected the methods of getting from the bronze; while observing the durability of the material they represented the copper with the Ankh, symbol of the eternal life.

In ancient China the use of copper is known from, at least, 2000 years B.C., and in 1200 B.C. they already make bronzes of excellent quality making them an obvious power in the metallurgy without comparison with from the West.

In Europe the man of ice found in Tirol (Italy) in 1991, whose remains have 5.300 years old, was accompanied by an ax with a purity of 99,7 %, and the elevated rates of arsenic found in his hair makes suppose that he fused the metal for the tool manufacture.



The fenicians imported copper from Greece, not delaying in exploring the mines of his territory, like attests the names of the cities Fit, Calcis and Calcitis (of  $\chi \alpha \lambda \kappa \omicron \varsigma$ , bronze), though it has been Cyprus, halfway between Greece and Egypt, for much time the country of copper by excellence, to the point of Romans called the metal of "aes cyprium" or simply "cyprium" and "cuprum", from where diverts his name. Besides, the copper was represented by the same sign as Venus (the Greek afrodite), since Cyprus was consecrated the goddess of the beauty and the mirrors were manufactured by this metal. The symbol, Venus mirror of the mythology and of the alchemy, modification of the Egyptian Ankh, was subsequently adopted by Carl Linné to symbolize the feminine type ( $\text{♀}$ ).

The use of bronze predominated in such a way during a history period of mankind that ended being called " Bronze Age ". The transition period between the neolithic age (end of the Stone Age) and the Bronze Age was called calcolític period (of the Greek Chalcos), limit that marks the passage from the prehistory to history.



The colonization of Africa and of Mediterranean by Egypt allowed that in those regions the persons learned to use the metal that existed in primitive state, fundamentally the gold and the copper. Later, they have learned how extracted them of certain minerals. Shortly afterwards the metal leagues were discovered, their first one of copper with tin, to produce bronze, fact that had great transcendence. The first copper workers early discovered that this metal could be easily hammered, laminating it subsequently to give him other forms in the way that were acquiring bigger skill in his work. After the bronze introduction also was possible to fuse great variety of pieces.

With the Romans, there has began an era of more intensive use of copper. The use of the metal was spread by all the regions in which his legions arrived, conquered and civilized. Most of the Roman copper came from the island of Cyprus, whom they called Cyprium, and from which came the word Cuprum, giving rise also to the acronym "Cu" as chemical symbol of the copper.



The property of copper, bronze and brass to resist the corrosion make that this metal remained not only like raw material for decorative articles, but also like a functional element during the Middle Ages and in the next centuries, of the Industrial Revolution up to our days.

The copper reached his real dimension like essential metal for the industrial development in 1831, when Faraday discovered the electric creator. From this moment, the demand for this metal grew up in notable form.



During great part of the XIX century, Great Britain was the biggest producer of copper in the world, but the importance that the red metal was acquiring in each day, caused the opening of new mines in other countries like United States, Chile and subsequently Africa, when there is surpassed in 1911 the cipher of a million tons of fine copper.

From the Industrial Revolution, important new uses were discovered for the copper and the progresses obtained in the metallurgy allowed to produce several other leagues from this metal, increasing his fields of application.

In all the moments of history of ancient world, copper contributed immensely to the development of the civilization and the culture, like we saw it in Temple doors and many others architectural elements of the Egyptians; needles of copper in the ruins of the second city of Troy; bells and cauldrons of China; classic statues of the Hellenic world; bull`s head fused in copper in the real cemetery of Ur, Mesopotâmia; copper tubes for water in Egypt; axles, swords and knives; ornaments and varied articles. The museums in whole world are full of the uses that the primitive man gave to one of his biggest discoveries.