

## Early Places With Metals:

### Rosh Horesha, Shanidar Cave

#### Advanced

In the large and confusing discussion about "Who, When, and Where used metals for the very first time", I have covered the [Turkish places](#) in some detail. To complement my little overview of early places *with* metals I need to include the non-Turkish contenders.

Around my place of origin in Suebia / South Germany no very old metal uses have been found so far (must be a slight oversight of my ancestors, given their otherwise impeccable [record](#)), so I give you Rosh Horesha (Israel) and for political neutrality also the Shanidar cave (Iraq). I can do that in one module because there is not much to report.

Many older articles about the subject refer to the *copper* found in those places. But is it true? Newer articles seem to be a bit more careful: "Indeed, the earliest interest in copper minerals was due to their distinctive optical properties: the use of green and blue beads and pigments goes back to the eleventh millennium BC, as documented from the [Shanidar Cave](#) in northern Iraq and [Rosh Horesha](#) in Israel".<sup>1)</sup> Copper *minerals* are mentioned, and not copper.

Let's see what one can find out about that *easily*.

#### **Rosh Horesha**

is a sizeable ancient settlement place in the Sinai and associated with the (later) **Natufian Culture**. This was an *Epipaleolithic* culture that existed from 13 000 to 9 800 years ago (i.e. 11 000 BC - 7 800 BC) in the Levant (roughly what is now Israel, Lebanon, Syria, Palestine...) and produced [remarkable art](#). "Epipaleolithic" is one of those big words. It means "on top of" (epi) the paleolithic or "old" (paleo) "stone" (lithic) age. It comes before and leads into the mesolithic ("middle" stone age) that gave way to the neolithic ("new" or "young" stone age). Those archeologists, in contrast to you and me, know their (ancient) Greek!

The Natufians were a bit unusual because they became sedentary before the introduction of agriculture. "The Natufian communities are possibly the ancestors of the builders of the first Neolithic settlements of the region, which may have been the earliest in the world. There is some evidence for the deliberate cultivation of cereals, specifically rye, by the Natufian culture" says Wikipedia. They have been credited with introducing agriculture to the world at large. After the discovery of all the Anatolian neolithic towns that view is now been [contested](#). There are many Natufian sites - and no metals there except, maybe, for Rosh Horesha.

So what about the metals found there? Forget it. Short of going into the (old) original literature, nothing is easily found out about that issue. It amounts to few sentences found here and there that state that at the Rosh Horesha site a few green - blue copper beads have been found.

How old are these beads? Well, a recent paper gives results from a [C14 analysis](#): "The oldest determination ... from [Rosh Horesha](#) is clearly an outlier at 11,140 ± 200 BC. The two remaining dates from this site fall in the early-mid 9th millennium". So let's take 9 700 BC as a rough date for Rosh Horesha. If that would be the age of *real* copper beads, they would be considerably older than their Turkish counterparts, indeed.

However! In newer literature we read, for example:

"Indeed, the use of blue and green copper ores for beads, pendants and pigments was a critical step in the Neolithic, occurring at early agricultural and agro-pastoralist sites dating to the eleventh–ninth millennium BC at sites such as [Shanidar Cave](#) and [Zawi Chemi](#) in north-eastern Iraq, [Hallan Çemi](#) in eastern Turkey and [Rosh Horesha](#) in Israel", or:

"As early as the 11th millennium BC, metalliferous minerals were used as raw materials for pigments and ornaments, such as a perforated pendant possibly made of malachite from [Shanidar](#) in Iraq and green stone beads from [Rosh Horesha](#) in Israel".

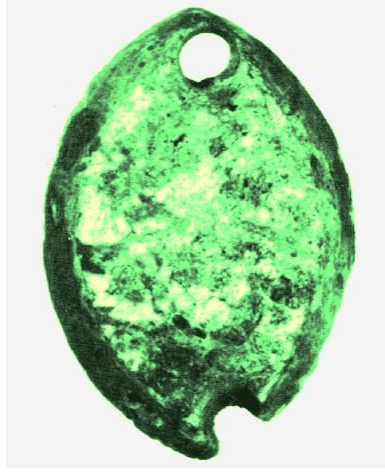
One might take that as an indication that those beads were not made from native copper but from malachite, like many others found meanwhile all over neolithic settlements. In fact, those old guys and gals had an obsession about green jewelry items (or rather amulets) like beads and pendants as shown in a recent publication <sup>2)</sup>, and went out of their way to get suitable minerals, including [malachite](#).

It is easy to surmise that the color green stands for [life and fertility](#) and thus was treasured. By the same reasoning, the color yellow in those places might symbolize the barren desert and death. That might be the reason why gold was disliked and never used before - roughly - 5 000 BC.

The article mentioned above shows several green pendants definitely not made from (later oxidized) copper that look rather similar to the one from:

#### **Shanidar Cave**

is a place in present day Iraq that was and is famous for its Neanderthals, dating way back to around 50 000 BC. The cave was excavated by Rose and Ralph Solecki in the 1950s, and besides the Neanderthals they also found relatively recent human remains (from an adult female), dated to about 13 000 BC, together with a green and well-worn pendant of malachite or (oxidized) copper. Metallurgical studies found malachite that contained a high amount of copper. Here is the pendant:



**A copper *mineral* pendant from northern Iraq**  
***Color is artificial!***

Source: Various Internet sites, e.g. C.S. Smith: "Metallurgy as Human Experience", Met. Transactions A, 6A (1975) p-603; going back to the Solecki paper in Antiquity, 1969.

So what do we conclude? Was the pendant made from pure copper and just has oxidized a lot after 15000 years or so? Copper, as we know from looking at not-so-old-roofs and gutters, does turn green eventually. Or was it made from what the maker thought was a large piece of good solid malachite and it just happened to have some elemental copper inside?

We don't know for sure. Maybe one could find out. But that would mean a destructive analysis and that is unthinkable.

All things considered, my verdict is:

**Rosh Horesha, Shanidar Cave (and similar sites) do not prove that metals were use before - roughly - 8 000 BC**

<sup>1)</sup> Miljana Radivojevic et al.: Journal of Archaeological Science, Volume 37, Issue 11, (Nov. 2010), p. 2775–2787.

<sup>2)</sup> Daniella E. Bar and Yosef Mayer: "Green stone beads at the dawn of agriculture" PNAS, Vol 105 no- 25 (2008) p.8548 - 8551