

# Prehistoric Tools & Weapons





### **FIRST TOOLS FROM STONE**

#### ***Creation Of Stone Tools***

Sharp stone tools always could have been used as weapons. But in human evolution we assume that competition for resources was not any problem and therefore gave no reason to fight over. The problem our archaic ancestors had were aggressive carnivores and these beasts were best fought off in joint action. A new discovery made in 2015 in Tanzania showed that the archaic stone tool time line needs to be pushed another 700,000 years further back to 2.5 million years ago. Homo erectus created simple pebble stone tools in a perfect hiding place called Oldowan Gorge. These tools included a million years later hand held choppers, axes and cleavers.

#### ***Paleolithic Stone Tools***

About 250,000 years ago man started to create flakes by striking a core stone with a hammer stone, this produced stone pieces or flakes to split off. This process involved a great deal of skill to achieve the desired result. Out of these flakes the best usable were selected. The flakes were further refined to create the desired shape and sharpness. This process is called by experts retouch technique. Retouched flakes differed in shape, they were longer and triangular like arrow heads. A significant technological advance was achieved, when flakes were attached to a handle to act as a lever.

#### ***Neolithic Stone Tools***

About 20,000 years back microlithic tools became common use by homo sapiens. Our ancestors produced a long list of sophisticated standardized tools, often put together from various pieces made of different materials including firestone, bone, horn, fibers and



natural glue. Microlithic tools were rather small and sharp and attached with mastic glue made from vegetable or gum tree to handles. They were used to cut and process meat, plants, wood and bones. Scrapers were used to prepare skins for leather and backed blade lets for knives and arrow heads and adzes used for wood work. By that time the development was so far advanced that man could easily defend himself against any beast or aggressor. But hunting for food always was first priority.

### **FIRST HUNTING SPEARS**

#### ***Human Prehistory***

For over two million years, since homo erectus had left Africa, he used the same simple stone tools he developed 500,000 years earlier. Some of these Oldowan type stone tools were found in many places along the way on the human move "Out of Africa" including in the Middle East on their first emigration step.

#### ***Sensational Discovery***

The new discovery in 1992 of hunting spears created by homo heidelbergensis about 300,000 years ago surprised all experts, because of their unbelievably advanced age. Their discovery represent a huge jump forward in illuminating our human history. It also shows us, that we had so far totally underestimated the practical skills and intellectual capabilities of our prehistoric ancestors.

#### ***Far More Advanced***

We have now proof, that ancient man was far more sophisticated in many ways than previous believed. He had a much higher developed brainpower, used articulated speech and produced very effective hunting weapons. Subsequently his social interaction and culture was far more complex and

advanced, than we ever have imagined so far. Our Paleolithic history now really has to be rewritten.

### *Much Earlier Development*

It was a world sensation, when these 300,000 year old wooden hunting spears were found in a brown coal pit at Schöningen in Germany. But these early hunting weapons were not produced by homo neanderthalensis nor homo sapiens. Over one thousand stone tools were unearthed here as well. These included knife like scrapers plus many remains of flint tools. Also many animal bones were excavated including twenty ancient wild horses equus mosbachiensis. Many bones were crushed to get to the bone marrow inside, which had a much sought after high nutritional value. The bones also show many markings from flint stone scrapers, produced when meat was removed.

### *Hunting Opportunities*

During the cold periods in this area the following animals roamed: mammoth, woolly rhino, moose, elk, reindeer, saiga antelope and glutton or wolverine. During the warm periods there were present: the Euro-Asiatic old elephant, hippo, step and forest rhino, wild donkey, red deer, boar, aurochs and water buffalo. In the interim periods our ancestors could hunt in this area: cave bear, cave lion, lynx, wolf, hyena, brown bear, step bison, huge deer, gazelle, red deer, wild horse, mountain stone ram, Iberian stone ram and gems.

Definitely there was no short supply of hunting targets and the necessary meat to keep the needed energy and brain power going. But men needed also a good hunting strategy and superior weapons to kill most of these animals. Either these animals were fast escaping or dangerous aggressors.

In this region the preferred hunting target have been wild horses. They were no carnivores and with a shoulder heights of 180 centimeters and weighing up to 500 kilograms a worthy prey. And the best opportunity to hunt them was at the border of a lake. There they were standing still drinking and the water was a good trap when approached from three sides.

### *Oldest Spears*

So far eight spears and one throwing stick have been unearthed in the last ten years by



archaeologists and their work is still going on. Seven of the wooden spears were made of pine wood, only spear number four was made from scotch fir wood. The spears were naturally sharpened and have no flint stone head. One spear seems to have broken in the middle and was repaired with a neat cut out “hand-in-hand” technique.

All spears are dated about 300,000 years ago during a warm period when temperatures were even warmer than today. Research has established, that all spears were made from small thin tree stems. Tests have shown, that these spears were made by these prehistoric hunters in only a few hours.

### *First Rituals?*

This proves, that with their primitive flint stone tools, homo heidelbergensis was a skilled and rather effective artisan too. But why did he ritually buried his precious spears with the killed wild horse’s remains? Experts are certain, that for this behavior he needed to have the necessary level of intellect. This will have enabled him to develop a social structure and religious beliefs leading to the rituals discovered.

### *Fascinating Theory*

The following is a theory worth considering when looking at the wider context. Let’s assume ancient men did live in balance with nature and hold it in high esteem. For him each being animal or man had a soul or similar living creature “value”. So when killing an animal, it’s soul or the gods needed to be appeased for the loss. For this the killing spear was possibly buried with the animal’s bones. It is a unique example of the first cult practice found so far in human history.

### *Possible Explanation?*

When looking at Neolithic rock art, we encounter a similar question. Why were animals engraved on rock surfaces? Was it really only

for artistic expression? Or was it to pray for hunting success? Or was it simply a message to others passing by, look these animals roam here? But why do we find so many animal depictions superimposed on top of each other when right next to them rock surfaces were untouched?

### *First Religious Cult?*

Interestingly the majority of animal rock art depictions are found close to water and often are linked to hunting. Now let's consider that these depictions were engraved to honor the killed animal souls and appease their gods. They should live on through their picture on the rock surface at the place, where they were killed. That could explain the numerous superimposed engravings.

But maybe it was also a bit of all the reasons discussed. Because prehistoric men had a much more complex life style, than we still imagine. But what about the huge time difference of 300,000 years we compare here. Well consider this, for two million years men used the same stone tools. They survived because knowledge was passed on from father to son.

Most importantly they understood they had to live in balance with nature, especially with animals. So the 250,000 years between the horse-spear burial ritual to appease gods and the first rock art to appear, is not a valid counter argument to this interesting theory to explain this unique animal plus spear burial cult.

### *Spear Details*

These spears have more surprises for us. Let's look at

their dimensions and weights. The eight spears are between 180 to 250 centimeters long and weigh around 500 grams. Their center of gravity is situated in the front third. This gives them the best penetration power and aiming accuracy. It is therefore no wonder, that maximum throwing distances of 70 meters could easily be achieved.

### *Master Spear Makers*

This proves that homo heidelbergensis was not only a master spear maker. By repeated trial and error he possibly had learnt, how the various parameters had to work together to produce a perfect long distance hunting spear. But this needed complex and detailed thinking to come to these sophisticated conclusions.

### *Olympic Spear Comparison*

It is absolutely astonishing, that today's Olympic spears hardly differ in dimensions and weight from these Paleolithic spears. Were these spears really already perfected 300,000 years ago? So here is a mind boggling comparison. It is surprising, how close these ancient spears are to today's high tech Olympic spears. Most of the eight ancient spears are

still functional today.

So a test with a rebuilt spear fully identical to the ancient spears was done. An Olympic spear athlete was filmed throwing his state-of-the-art carbon fiber spear and the Paleolithic spear. The result was amazing. The flight path was nearly identical, as was the distance and penetration achieved.

So our prehistoric hunters had a much higher hunting success rate, than we previously assumed. They did not need to get so close to the shy wild horses. But several interesting questions still remain. Did they killed the wild horses, buried with the eight spears excavated, at once? Where they already able to preserve meat? Did they share or trade the meat with other family clans?

### *Neolithic "Boomerang"*

Next to the spears also another interesting hunting weapon was discovered. Experts previously did not consider throwing sticks to have been used that early in history. This example is made from pine wood and measures eighty centimeters. It is sharpened at both ends and looks similar



to throwing sticks found in Australia and California at a much later stage. Throwing sticks turn in the air and hit small animals unconscious. Therefore they have become a simple and useful hunting weapon.

Later reports of throwing sticks were recorded in Egypt and rock engravings thereof were found even in Sweden. Throwing sticks were much later commonly used during the Neolithic Period and Bronze Age in Europe. But they did not have the returning capabilities like boomerangs in Australia.

**One Way Stone Tools?**

The Schöningen men must have been fast moving hunters, who traveled "light". So their flint stone tools were "one way" tools and were left behind after the job was done. Heavy stone tools were not carried around, that would have needed a bag. And a bag is a hindrance for skilled spear throwers. Stone tools were used to make spears, as well as to cut meat and skins. These flint stone tools were skillfully produced on site with few well pointed hits. Nevertheless they were efficient and sharp stone

tools, which in need were also sharpened again.

**Prehistoric Art**

Before the earliest Paleolithic artefacts were discovered in various caves around Ulm in southern Germany and were dated at an age of 45,000 years. This point in human history was marked by the arrival of our ancestor homo sapiens in Europe about 50,000 years ago. Until then it was regarded as the beginning of the development of modern man. Does this discovery now force experts to set the beginning at a much earlier stage?



**Musical Instruments**

But the objects skillfully crafted by homo sapiens about 50,000 years ago included the oldest known musical instruments and pieces of art. They comprise various beautiful flutes made from animal bones and mammoth ivory. The latter flute was a complex built instrument

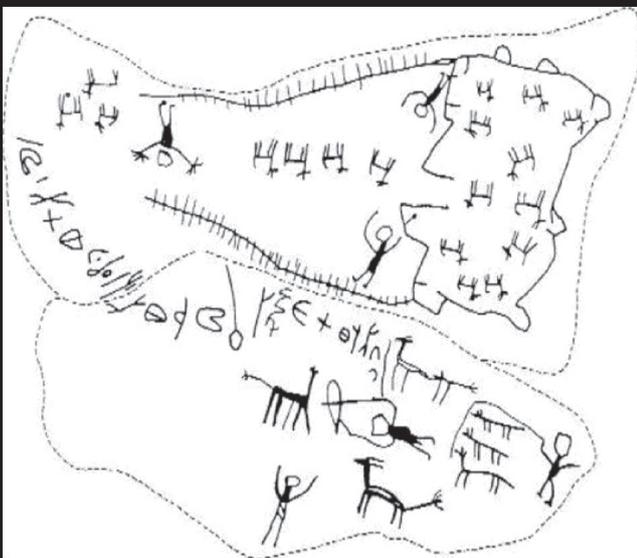
glued together skillfully crafted ivory pieces. With three to four holes eighteen tones could be played with these flutes. The art objects consist of a human figure with lion head and various female "venus" figurines. The latter suggest the existence of a developed fertility cult.



**DESERT KITES**

**First Hunting Traps**

When I first heard about prehistoric hunting traps called desert kites, I was unsure if I had heard right. These amazing Neolithic traps were found in various places in the northern part of the Arabian Peninsula. They just look from the air like flying kites with long lines and different coral shapes. The name now made sense to me and when I saw the





first of many pictures, I was convinced it was really the best description.

We started a desktop archeology project to mark them on Google Earth. In the meantime we have identified over one thousand so-called desert kites. It is fascinating how easy it is to find them, when you know where to look for them. The variety in shapes is unbelievable. This can be seen on the telling photographs in this article. Now let's look at these intriguing hunting traps in more detail.

#### *Hunting Technique*

At the time in this area gazelle were the predominant animal and hunting target. As they were rather fast fleeing animals a different hunting technique was needed. About 20,000 years ago man had already domesticated

dogs from various local packs of wolves. And trained them as chasing dogs for hunting purposes. Our ancestors lived well in balance with nature and were good observers of animal behavior to develop successful new hunting techniques. The stony area was covered with thorny bush and gazelle took great care when feeding not to damage their important eye sight.

#### *Trap Construction*

It was rather simple to erect a long line of loose stones just piled up low enough to hold a fence of thorny branches. Gazelle could easily jump across but their instinct hold them back. So two fence lines up to two kilometers long ended in a V shape funnel into a coral. The chasing dogs did the trick and quickly the gazelle

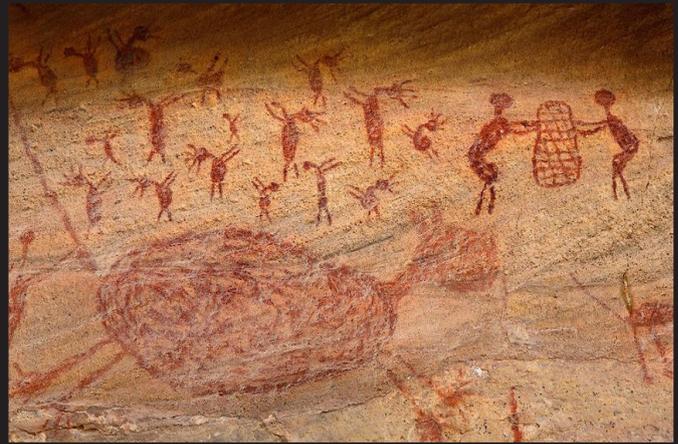
were trapped in the coral and killed or captured. Very often the traps had small stone walled enclosures to capture and hold gazelle alive. These were covered like a roof with thorny branches to avoid their escape. In this way Neolithic hunter-gatherer clans had ample meat supply for a long time.

#### *EARLY USE OF NETS*

#### *Hunting Nets*

Unfortunately organic materials do not survive and therefore we only have painted or engraved rock art images, which show us that nets were used for hunting purposes. And nets were used in two ways. As a long structure erected between trees for chase hunts for larger animals and





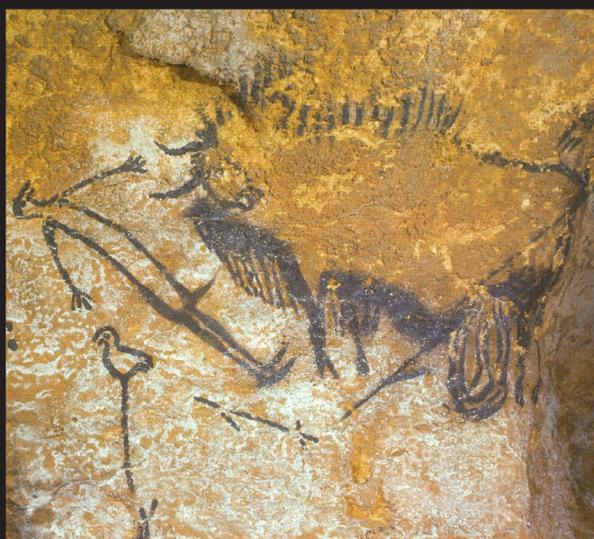
as rectangular throwing nets to capture smaller creatures. This we can see in various continents for example in Brazil at Serra Capivara.

### *Fishing Nets*

In addition fishing nets were used as a common practice in rivers, lakes and at sea. This we can derive from the many refuse dumps full of fish bones near seasonal camp sites. Unfortunately sea levels changed hugely over time. At some stage they were between 80 to 100 meters lower than today. So some interesting archeological treasures might lie yet undiscovered off shore in deep waters.

### *USE OF LANCES*

Long lances were used early on in history for various purposes. They were a multi-functional tool starting from being a walking stick, test the water depth of crossings, chase snakes away, shake fruits from trees, carry things and most important kill animals for meat. It was certainly the most easily weapon to create and did not need a lot of skill. And it took little time to produce. So it might have been the perfect weapon to make between hunts and moving around.



The paintings done about a hundred years ago showing homo neanderthalensis killing huge mammoth with lances are they fiction or realistic? Again organic material like wooden lances do seldom survive. Only at Schöningen we were truly lucky. New research shows that our ancestors were taller than we previously thought and reached a heights of 180 centimeters. In addition DNA test gave proof that mammoth in Europe were smaller than an African Elephant today. So lances could well have been the best hunting weapon for prehistoric mammoth.

Later with the domestication of horses long lances were an ideal hunting weapon on horseback. Rock art engravings show that they were used as hunting weapons as well as arms to attack or

defend themselves. Especially on fast moving horses target animals had fewer chances to escape. So it could be said that lances were the most versatile hunting weapon of all. Only later they were overtaken by bow and arrow. But the arms competition went on right into the Middle Age.

### *LANCE CATAPULT*

#### *New Weapon Type*

This new hunting weapon is an interesting development and was possibly used as early as 50,000 years ago. It is a logical idea how to increase throwing distance of lances. But the distances achieved are about the same as our first wooden spears used 250,000 years earlier at Schöningen. We can assume that this knowledge disappeared with homo heidelbergensis and was later reinvented in a different way.

#### *First Hunting Accident?*

Is the cave painting from Lascaux the proof of the first documented hunting accident in history? This might well be the case when studying this telling image. A hunter lies on his back right in front of a bison. But what is so intriguing about this expressive painting?



It explains a clever hunting technique. The hunter is depicted with a bird head and next to him lies a stick with a similar bird head.

### *Hunting Technique*

In this case the bison were approached in high grass. When the hunter was wearing a bird mask he could raise his head above the grass line and carefully observe the grazing animals. The bison would not be alarmed when seeing a bird approaching. The lance catapult was disguised in the same way when the hunter was hurling his lance forward. But this time possibly the wind changed and the bison charged and got him down. This is really the most amazing and a very telling bad hunting luck story.

### *BOW & ARROW*

Suddenly at one point in time possibly about 10,000 years ago bow and arrow became the predominant hunting weapon across all continents. It is assumed that bow and arrow were more used as a defensive weapon when shepherding of recently domesticated animals played an important role. At that time hunter-gatherer clans settled down and protected their cattle, sheep and goats against various carnivores. A quiver with a dozen arrows was easy to carry around for shepherds. But lances or spears were really not. And their trained hunting dogs had now a second job to protect the herd. The many rock art depictions about men with bow and arrow are a good example of the common use of this weapon.



### *PREHISTORIC TOOL BOX*

#### *Ice Man*

The various weapons plus tools he carried along made the "Ice Man" a sensational discovery over twenty years ago. This discovery is the oldest so far found, because he lived 5,300 years ago in the southern alpine valleys. A small belt pouch was sewn to this belt and contained various small tools, including a sharp flint scraper, flint drill, flint stone piece, bone awl and tinder sponge. This sponge was used to make fire. This was done with pyrite and flint stones. The tinder sponge with a few drips of urine caused a chemical process and lit up easily by the sparks. But his weapons "arsenal" was much larger.

#### *Ancient Copper Ax*

A copper ax is the most precious item of any clan member at that time. It was used as weapon and tool for various purposes. Possibly he fell the small yew tree with it from which he then cut his new bow. This is also the oldest fully intact copper ax example worldwide. The copper head is ten centimeters long and has a ninety nine percent copper content with minimal traces of silver and arsenic. It was sharpened by a well-developed hammering technique. The handle is sixty centimeters long and birch tree tar resin plus leather strips were used to fix the heavy copper head to the wooden handle. A copper ax is a sign of being an elite clan member. But possibly he was an important warrior or even clan chief.

#### *Flint Knife*

When found he still held his thirteen centimeter long flint



stone knife in his hand. Interesting though the sharp flint blade comes from a deposit at Monti Lessini east of Lake Garda. The handle was made of ash tree and the knife's sheath was fixed to his belt. It is remarkable that his various pieces of equipment were made from so many different kinds of wood, each with the best quality for their specific needs. Maximum elasticity for the bow, best strength for the ax handle and stability and lightness for the arrows.

#### *Quiver & Arrows*

His leather quiver bag had a rectangular form, which was stabilized with a hazel branch on one side. It contained twelve unfinished arrows, plus two finished ready to use. In the quiver also four sharp antler end pieces plus a two meter long rope and animal sinew was discovered. This needs to be seen in context with the unfinished bow and arrows.

Two usable arrows were equipped with flint heads and bird feathers. But they were of different length and one too long for closing the quiver flap top. When examining the feathers on the shaft, it was found that the arrows were produced by two different men, one left and the other right handed. What does that tell us? Did he collected the arrows shot at him but missed? But what did happen to his so important weapon and hunting equipment his bow?

#### *Unfinished Bow?*

His new wooden bow was still unfinished and had no string. This raw bow was nearly two meters long and made from yew tree. This bow was rebuilt by archeologists and tested to establish its precise capacities. The tests have shown, that animals could be killed with precision shots from fifty meters with arrows fully penetrating the animal's body. And it also showed that maximum distance shots could reach up to 180 meters. So this type of bow was an excellent hunting and defense weapon.

#### *Other Equipment*

It is amazing what else Neolithic travelers took on trips. His back pack is one of these multiple use pieces of equipment. It

was made from a "U" bent hazel tree stick with two wooden plates at the lower back and was possibly fitted with a large leather carry bag. For a long time experts could not make out what purpose a pencil shaped tool had, because no similar piece was ever found before. But over time it became clear, this was a unique flint stone retouch and sharpener tool. The twelve centimeter long handle was made from lime tree. A fire hardened deer antler piece was inserted in the center, so it could be used to produce the cutting edges of flint blades by applying the necessary pressure.

