

# Evidence for a Basket Weaving and Woven-Fiber Technology in the Paleolithic Era

**By Rick Doble**

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# ABSTRACT

While it is difficult to find physical evidence for basket weaving and woven-fiber artifacts in the Middle and Lower Paleolithic era, there is ample evidence from other sources that point to the likelihood of such a technology. The paper lists the evidence and the argument in favor of that conclusion.



This is a photo of an entire indigenous pre-Incan community in South America  
(the Uru or Uros people)  
made with woven-fiber technology: the boats, the houses, and the floating island.  
[https://commons.wikimedia.org/wiki/File:Photo\\_-\\_Floating\\_Islands\\_\(Puno,\\_Peru\).JPG](https://commons.wikimedia.org/wiki/File:Photo_-_Floating_Islands_(Puno,_Peru).JPG)

## OVERVIEW OF THIS ARTICLE

Many paleoanthropologists believe that there was a rich and complex 'soft technology' of fibers and plant materials during much of the Paleolithic era, including the Lower and Middle periods, in addition to the 'stone age' technology that this era is named for. Unfortunately, there is very little physical evidence since these materials decayed and left few traces. However, there is considerable evidence of a more general nature that points to the existence of such technology and makes it improbable that this technology did not exist. If this is true, it will be the job of future paleoanthropologists to discover ways to uncover this technology which has been buried in the decay of time.

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"In whichever way archaeological remains are interpreted, one must always be aware that the vast majority of the materials with which prehistoric people were surrounded and with which they worked is lost to us today. ...organic materials start to decay as soon as they are deposited in the ground."

Grömer, Dr. Karina. "An Introduction to Prehistoric Textiles" Brewminate.com, Natural History Museum, Vienna, March 01, 2016, <https://brewminate.com/an-introduction-to-prehistoric-textiles>.

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**#1. It has been definitely established that during the Paleolithic era stone tools were made with processes and these processes became increasingly complex and sophisticated which produced significantly better and diverse tools and weapons. These processes are now well understood by anthropologists.**

**#2. If hominids could craft and improve stone tool processes over hundreds of thousands of years, then it is likely that they were able to create and then improve other processes which did not leave trace evidence, such as artifacts made with plant fibers.**

**#3. While most of the artifact evidence of Paleolithic hominids has been stone tools, a number of anthropologists believe that stone tools only represent a small number of the artifacts that were present in these cultures.**

**#4. Anthropologists have found that contemporary hunter-gatherers have a wide and deep knowledge of the plants and animals in their environment.**

**#5. A well-respected anthropologist has listed weaving as one of the technologies present in all cultures.**

**#6. World-wide in every environment, there were different plants that could be used to make baskets or other woven constructions. These plants varied depending on the location. But all cultures were able to find suitable plants where they lived.**

**#7. Basket-making is present in all cultures.**

**#8. There were a number of natural shapes such as the various nests made by birds and webs made by spiders that could have led to the creation of baskets and then other constructions. Since it is probable that Paleolithic people were well aware of the plants and animals of their environment it is also quite likely that they understood these constructions.**

**#9. There is now clear evidence, from impressions of baskets or fabric in clay, that sophisticated weaving had developed by the Upper Paleolithic period 27,000 years ago. Therefore Dr. Adovasio, the leading authority of Paleolithic fiber technology, now believes that this technology began much sooner than previously thought. It may have begun in the Middle Paleolithic or even the Lower Paleolithic.**

**#10. I believe the facts listed above mean that there is a high probability that basket weaving and the weaving technology began much earlier in the Paleolithic era than previously thought. And further that it is highly improbable that this technology only began in the Upper Paleolithic era.**

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#11. In addition, if it can be established that basket weaving and related technologies began earlier, it is also probable that Homo sapiens were able to make a wide variety of artifacts using this technology from sandals, to hammocks, to houses, and to boats much earlier than previously thought.

**Please see the 50 photo 'slide show'  
at the end of this article for a display of such artifacts.**

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## INTRODUCTION

In 1995 a major discovery was announced that would completely change our understanding of how human culture evolved and how 'stone age' people lived. At the Society for American Archeology, Dr. Olga Soffer of the University of Illinois at Urbana and Dr. James M. Adovasio of Mercyhurst College in Erie, Pa. announced they had finally found what they had been looking for -- a quest that had occupied most of their professional lives.

Dr. Soffer had found pieces of clay with clear impressions of the earliest fabric artifacts -- the first to be confirmed from the Paleolithic time period. Since the impressions were so small they could not tell whether these were from textiles or from baskets. The leading world paleo-fiber expert, Dr. Adovasio, confirmed the find.

This one discovery pushed back the beginnings of these 'soft' technologies about 10,000 years well into the 'old stone age' and well beyond the Neolithic or 'new stone age' when everyone in the field had assumed that textiles and weaving had begun. These new findings have now been dated to 27,000 years ago.

When the clay impressions were examined closely they revealed at least two different weaving techniques. Dr. Adovasio commented that the regularity of the weave and the 'narrow-gauge' indicated that the technology was quite advanced so that the origins of weaving had to be much earlier.

This discovery may have pushed back the origins of human culture hundreds of thousands of years because this find opened the door deep into the Paleolithic era which spanned two million years.

Dr. Soffer also noted that the clay fragments revealed a surprising variety of weaving techniques such as open and closed twines, nets, and plain weave. The intriguing thing about the plain weave impression was that it required a loom. This fact alone meant that 'old stone age' nomadic people were making fiber constructions with a basic loom -- something that was thought impossible.

While to the average person this might not seem like a big deal, it is a big deal. Dr. Adovasio believes that our understanding of early humans is based on stone tools because they have been found in quantity. However, because fiber decays and does not leave a trace, there is little direct evidence for the archeologist. Yet he believes that stone tools were less than 10% of the artifacts of these cultures.

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Dr. Adovasio has made the point that there is "ample ethnographic evidence that perishable technologies form the bulk of hunter-gatherer material culture even in arctic and sub-arctic environments (e.g. Damas 1984; Helm 1981). Archaeologists working with materials recovered from environmental contexts with ideal preservation clearly confirm that this is also true for the past as well. Taylor (1966:73), for example, notes that in dry caves he recovered 20 times more fiber artifacts than those made of stone, Croes (1997:536) reports that wet sites yield inventories where >95% of prehistoric material culture is made of wood and fiber, and Collins (1937) confirms the same for sites in Alaskan permafrost."

Soffer O, Adovasio JM, Hyland DC, Klíma B, Svoboda J. "Perishable Industries from Dolní Vestonice I: New Insights into the Nature and Origin of the Gravettian." Paper Prepared for the 63rd Annual Meeting of the Society for American Archaeology Seattle, Washington, 25–29 March 1998. DolniVestonice.pdf.

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This means that to understand human and cultural development, an understanding of weaving, which was used to create a wide variety of artifacts, is critical. In other words, when Homo sapiens made the transition to modernity, weaving technology played a major role.

## THE IMPORTANCE OF PROCESSES

In my last blog I made the additional point that a large number of probable weaving processes, along with the making of stone tools and the processes involving fire and food, meant that people had to develop memory, ways of communicating the process steps to the next generation, and a clear idea of a future final product when they began the process.

I believe that processes became a model for an understanding of linear time which was a crucial element in the development of a fully developed G1 (basic) language. And it was about 100 kya when all the elements came together so that the beginnings of modern behavior occurred. So it was around this time, 100 kya, that language, and modern human behavior began.

SEE MY LAST BLOG FOR AN IN-DEPTH DISCUSSION

*The Origins of Language: When, Why and How*

<https://deconstructingtime.blogspot.com/2019/07/the-origins-of-language-when-why-and-how.html>

### THERE ARE A LARGE NUMBER OF WOVEN-FIBER PROCESSES

While most people are familiar with baskets and even handmade baskets by local people, I doubt that there are many who are aware of the wide variety of baskets that are possible and then the additional number of artifacts that can be created with weaving techniques -- everything from shoes to thatched roofs to boats. All of these were possible in the Paleolithic era in every part of the world. See the 'slide show' at the end of this blog for examples.

# TERMINOLOGY FOR THESE KINDS OF ARTIFACTS

## Paleolithic Woven-Fiber Technology

To avoid ambiguity I have settled on the term Paleolithic Woven-Fiber Technology to describe everything from baskets to hammocks to boats to textiles and cloth. I see them all as part of the same general weaving method which was part of an evolving technology.

And it is important to understand that all of these products (to use the modern word) were made with processes that involved a large number of steps.

While I have suggested Paleolithic Woven-Fiber Technology as a name for these kinds of artifacts, the terminology is still being worked out.

In an article entitled "An Introduction to Prehistoric Textiles", Dr. Karina Grömer says that when speaking of prehistoric artifacts "The term textile encompasses not only woven fabrics but all products which consist of interconnected basic components. These include mats made in plying and basketry techniques, objects of fabrics made in coiling techniques, nets, wickerwork, and twined objects."

She then goes on to say:

"What actually is a textile? Conventionally, the term textile is applied to woven fabrics in particular. The British standard handbook for the textile industry: Textiles Terms and Definitions, The Textile Institute Manchester (7th edition 1975) says: 'Originally a woven fabric; the term is now applied to any manufacture from fibres, filaments or yarns, natural or man-made, obtained by interlacing'."

Grömer, Dr. Karina. "An Introduction to Prehistoric Textiles." Brewminate.com, Natural History Museum, Vienna, March 01, 2016, <https://brewminate.com/an-introduction-to-prehistoric-textiles>.

In an article about the history weaving, this website suggests that weaving encompasses a wide range of processes.

"Weaving: The art of weaving...involves the production of fabric or cloth by interlacing two distinct sets of yarns or threads in a right angle...Early civilization called for temporary shelters to be built, so knowing how to twine, plait, knot and weave materials such as grass, twigs, string and twine together, in order to build walls, roofs, bedding, baskets and doors, was imperative."

*The History of Weaving*. Wild Tussah, September 2014. <https://wildtussah.com/history-weaving-2/>.

Dr. Adovasio, the leading expert in the field has used the term, Prehistoric Perishable Fiber Technology. This would cover any fiber construction including woven artifacts.

# EVIDENCE FOR SOFT TECHNOLOGIES

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## There Is Now A Complete Knowledge Of One Paleolithic Technology, That Of Stone Tools

The evolution of stone-tools is well documented and understood in depth; over time the technology became increasingly complex producing a variety of well-made tools.

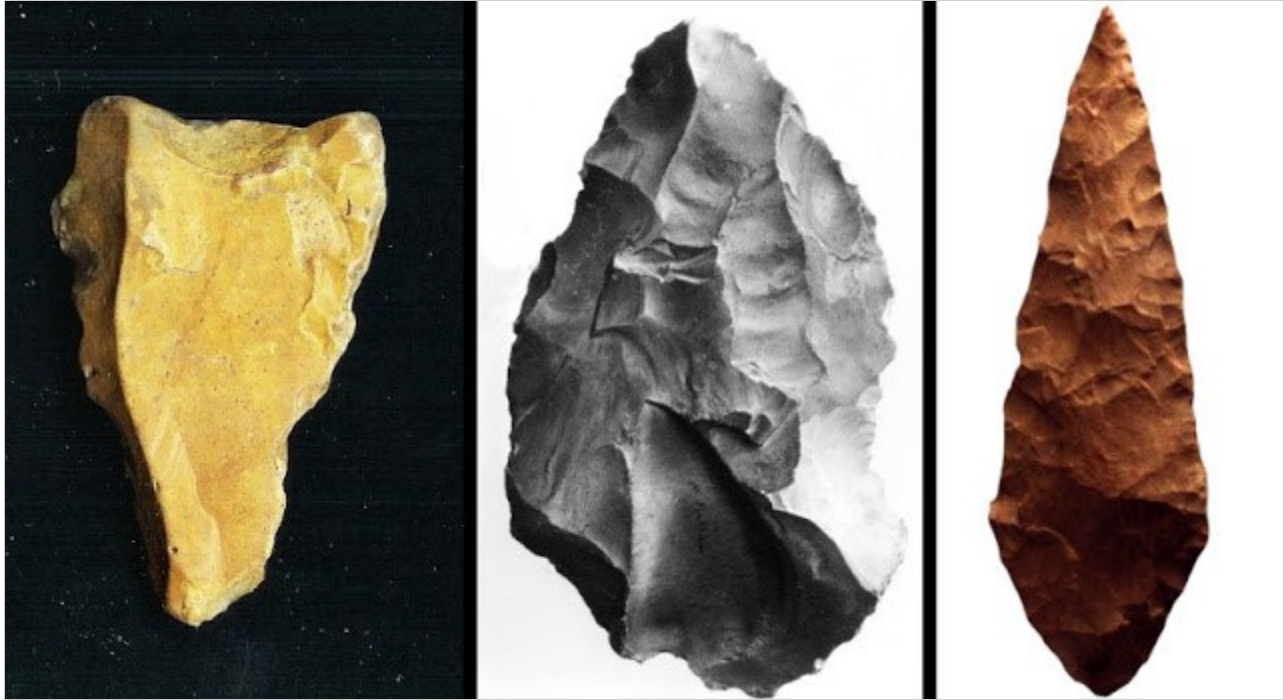
"In general, these [ED: stone tool] materials develop gradually from single, all-purpose tools to an assemblage of varied and highly specialized types of artifacts, each designed to serve in connection with a specific function. Indeed, it is a process of increasingly more complex technologies, each founded on a specific tradition, that characterizes the cultural development of Paleolithic times. In other words, the trend was from simple to complex, from a stage of nonspecialization to stages of relatively high degrees of specialization..."

The Editors of Encyclopaedia Britannica. "Stone Age." Encyclopaedia Britannica, accessed September 13, 2019, <https://www.britannica.com/event/Stone-Age>.

"In the late Paleolithic period, tools became even more sophisticated. As many as 80 different types of implements have been unearthed for what are called the Perigordian and Aurignacian industries in Europe. It is believed that these tools were used for hunting and butchering, clothes making, and a great variety of other tasks that moved early humankind closer to modern life. In all, hundreds of highly complex tools have been found, some of which are the prototypes for modern tools."

The Editors of Encyclopaedia Britannica. "Stone Tool Industry." Encyclopaedia Britannica, accessed September 13, 2019, <https://www.britannica.com/event/Stone-Age>.





The progression of stone technology during the Paleolithic era showing the evolution of stone tool processing.

(Left) Acheulian flint chopper, North Somerset, UK; ca. 750 kya.

[https://commons.wikimedia.org/wiki/File:583\\_three\\_handaxes\\_ventral\\_\(FindID\\_101523\).jpg](https://commons.wikimedia.org/wiki/File:583_three_handaxes_ventral_(FindID_101523).jpg)

(Middle) Lower Paleolithic flint stone tool, Egypt; ca.200 kya.

[https://commons.wikimedia.org/wiki/File:Tool\\_MET\\_06-322-21.jpeg](https://commons.wikimedia.org/wiki/File:Tool_MET_06-322-21.jpeg)

(Right) Bifacial silcrete point; Blombos Cave, South Africa; 71 kya.

[https://commons.wikimedia.org/wiki/File:Blombos\\_point\\_white.JPG](https://commons.wikimedia.org/wiki/File:Blombos_point_white.JPG)

Since this technology was passed down from generation to generation, these skills had to be memorized and then taught to the next generation. It is clear from the tools themselves that there were 'cultures' of stone tool making, meaning that generation after generation tools continued to be made in the same characteristic way in the same culture.

## The Proven Example Of One Complex And Evolving Process Suggests Other Processes Were Also Being Used And Developing

Because one process has been well documented, it is likely that other technologies and processes of 'soft materials' existed. But due to decay, these materials have left almost no record.



# There Is Extensive Knowledge Of Plant And Wild Life By Hunter-Gatherers

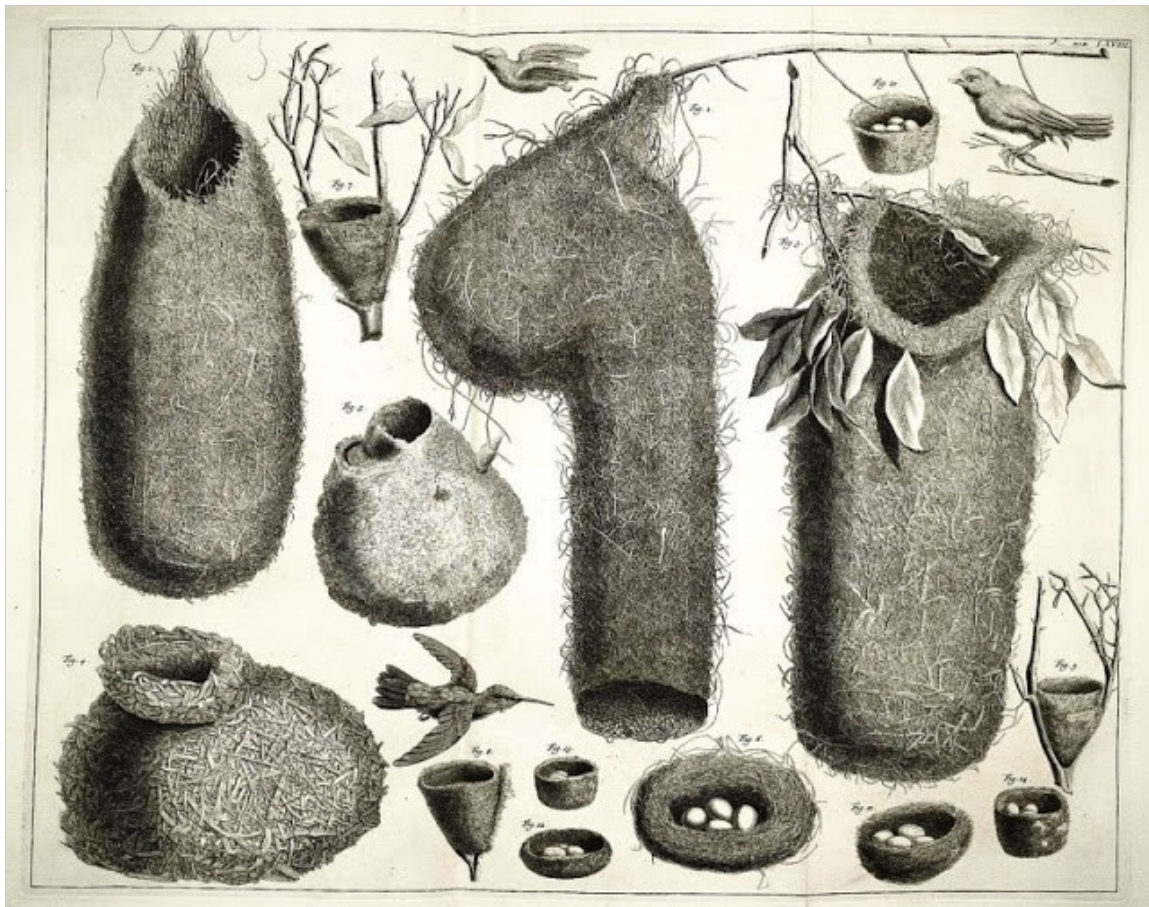
"Pioneering work by Conklin (1957) and others documented that traditional peoples such as Philippines horticulturists often possessed exceptionally detailed knowledge of local plant and animals and their natural history, recognizing in one case some 1,600 plant species."

Inglis, Julian T., Editor. *Concepts and Cases: International Program on Traditional Ecological Knowledge*. International Development Research Centre (Canada), 1993, <http://library.umac.mo/ebooks/b10756577a.pdf>.

"...knowledge of plant uses associated with foraging and social norms is shared more widely among campmates, regardless of relatedness, and is important for camp-wide activities "

Salali GD, Chaudhary N, Thompson J, Grace OM, van der Burgt XM, Dyble M, Page AE, Smith D, Lewis J, Mace R, Vinicius L, Migliano AB. "Knowledge-Sharing Networks in Hunter-Gatherers and the Evolution of Cumulative Culture." US National Library of Medicine, National Institutes of Health, September 2016.

<https://www.ncbi.nlm.nih.gov/pubmed/27618264>



Various bird nests that could have been used as models for baskets  
in the Lower or Middle Paleolithic eras.

A page from the 18th Century drawings in the *Thesaurus of Albertus Seba: The Albertus Seba Thesaurus* Tab. LXVIII.

[https://commons.wikimedia.org/wiki/File:Albertus\\_Seba\\_Thesaurus\\_Tab.\\_LXVIII.jpg](https://commons.wikimedia.org/wiki/File:Albertus_Seba_Thesaurus_Tab._LXVIII.jpg)

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## Natural Shapes Were Likely Models

Due to their awareness of and sensitivity to the environment, Paleolithic hunter-gatherers would have been well aware of a variety of bird's nests and spider webs, shapes, and structures they could use as models for useful man-made objects

"The idea of interlacing materials together to create a weave was probably inspired by nature; by observing birds' nests, spider webs and various animal constructions..."

*The History of Weaving*. Wild Tussah, September 2014. <https://wildtussah.com/history-weaving-2/>.



The design and the strength of a spider's web was  
a likely source for basic basket design.





(Left) Bird's nest from the 18th Century drawings of Albertus Seba. From the Albertus Seba Thesaurus Tab. LXVIII.

[https://commons.wikimedia.org/wiki/File:Albertus\\_Seba\\_Thesaurus\\_Tab.\\_LXVIII.jpg](https://commons.wikimedia.org/wiki/File:Albertus_Seba_Thesaurus_Tab._LXVIII.jpg)

(Right) Neolithic woven artifact from the Cueva de los Murciélagos  
in the Museo Arqueológico Nacional de España

[https://commons.wikimedia.org/wiki/File:Cester%C3%ADa\\_Murci%C3%A9lagos\\_05.JPG](https://commons.wikimedia.org/wiki/File:Cester%C3%ADa_Murci%C3%A9lagos_05.JPG)



Bird nests are a logical model for basketry.

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# Materials For Basket Making

## Were Available World-Wide

"There is no region in the world, except in the northernmost and southernmost parts, where people do not have at their disposal materials—such as twigs, roots, canes, and grasses—that lend themselves to the construction of baskets."

The Editors of Encyclopaedia Britannica. "Basketry." Encyclopaedia Britannica, accessed September 13, 2019, <https://www.britannica.com/art/basketry>.

## Baskets Were Made And Were Important

## In Almost All Cultures Of The World

Project leader Sandy Heslop, of the School of World Art and Museology at UEA, said: "Basketry is a worldwide technology." But it must be "adapted to, local conditions in terms of resources and environment."

Heslop, Sandy. *Projects: Beyond the Basket: Construction, Order and Understanding*. Arts & Humanities Research Council, <http://projects.beyondtext.ac.uk/beyondthebasket>

## Weaving Is A Universal Technology Of All Cultures

The well-respected Anthropologist Dr. George P. Murdock developed the Cross-Cultural Survey which listed universal technologies and behaviors in all cultures. Weaving was included in the list as one of four basic technologies.

Murdock, George P. "The Common Denominator of Cultures." *The Science of Man in the World Crisis*, edited by Ralph Linton, New York: Columbia University Press; 1945: pp. 123-142.

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**NOTE:** The word 'weaving' has come to mean the making of textiles in modern-day usage. However, the term weaving could mean basket and textile weaving.

The mythology of ancient Sumer, the first civilization, is a good example. Uttu, the ancient goddess associated with weaving, was identified with the spider and even her name and the word spider were identical in Sumerian cuneiform writing [1]. But she was also known as the "goddess of plants" [2]. In a famous myth entitled Enki and Ninhursag, she was impregnated by Enki her father, a principal god, which then led to the birth of eight plants including esparto grass [3][4] which was the most important plant for the making of baskets. Baskets were so crucial to the Sumerian culture that another principal god Enlil declared, "The pickax and the basket build cities" [5] in an early creation myth. In addition "Craft of the basket weaver" was specifically mentioned in the MES which were fundamental decrees of the gods listing the essential elements and skills of Sumerian civilization.[6]

# PHYSICAL EVIDENCE OF PALEOLITHIC WOVEN-FIBER TECHNOLOGY

## NEOLITHIC ARTIFACTS FOUND

"Numerous archaeological artifacts and remains of esparto basketry have been discovered that date from the Neolithic period and onwards in southeast Spain. These pieces demonstrate high standards of quality compared with more modern pieces. In addition, there are many imprints of esparto basketry in clay or pottery (Ayala and Jiménez 2007). Among the abundant archaeological remains, some of the most outstanding are the artifacts dating back to 7,200– 6,600 BP, which were found with several mummies in Cueva de los Murciélagos (Granada). these pieces represented clothes, hats, tunics, sandals, baskets, and ropes—all made with the finest techniques. In some cases, the artifacts included colored espartos (Cacho et al. 1996;Castellote 1982)."

Fajardo, J., Verde, A., Rivera, D. et al. "Traditional Craft Techniques of Esparto Grass (*Stipa tenacissima* L.)" *Econ Bot* (2015) 69: 370. <https://doi.org/10.1007/s12231-015-9323-x>



These Neolithic artifacts were found in the Cueva de los Murciélagos (Granada). They show that the technology was already highly developed around 7,000 BP which means that the origins of this technology were much earlier.

Artifacts from the Cueva de los Murciélagos in the Museo Arqueológico Nacional de España  
[https://commons.wikimedia.org/wiki/Category:Artefacts\\_from\\_the\\_Cueva\\_de\\_los\\_Murci%C3%A9lagos\\_in\\_the\\_Museo\\_Arqueol%C3%B3gico\\_Nacional\\_de\\_Espa%C3%B1a](https://commons.wikimedia.org/wiki/Category:Artefacts_from_the_Cueva_de_los_Murci%C3%A9lagos_in_the_Museo_Arqueol%C3%B3gico_Nacional_de_Espa%C3%B1a)



# UPPER PALEOLITHIC WEAVING INDICATED

"Detailed studies of a series of [Venus] figurines indicate the presence of at least three types of dressed female depictions. These include several types of headgear [ED: see Venus figurines next], various body bandeaux, and at least one type of skirt. Using data from Europe, we argue that the garments portrayed were made of plant fibers and that their exquisite detailing reflects the important role played by textiles in Upper Paleolithic cultures."

Soffer O, Adovasio JM, Hyland DC. "The Venus Figurines."

Current Anthropology, Volume 41, Number 4, August±October 2000.



The Venus of Willendorf & The Venus of Brassempouy, Upper Paleolithic figurines.

In addition to the clay impressions mentioned at the beginning of this article, this study indicates that textiles were well developed by the Upper Paleolithic which further indicates that the origins of weaving occurred much earlier in the Middle or Lower Paleolithic.





The Upper Paleolithic era was quite sophisticated. The multi-colored painting of a bison in the Cave of Altamira (above right) was painted with an airbrush technique (left) and the depiction of a bison (photo of a contemporary bison bottom right) was quite accurate even though it was done deep inside a dark cave from memory. Along with the newly found textile evidence, this indicates that stone-age technology must have begun much earlier than previously thought.

## MIDDLE PALEOLITHIC BOAT JOURNEY

Genetic DNA evidence has shown conclusively that the Australian Aborigines crossed over from Asia to Australia about 50,000 years ago. Anthropologists agree that they probably used some kind of raft made of natural materials to make the journey.

Cooper, Alan; Williams, Alan; Spooner, Nigel. *When did Aboriginal people first arrive in Australia?* The Conversation, <https://theconversation.com/when-did-aboriginal-people-first-arrive-in-australia-100830>, accessed 9/22/2019.

## LOWER PALEOLITHIC WOODEN OBJECTS FOUND

There have been several different significant finds of Lower Paleolithic wooden implements which were carefully shaped and treated by Paleolithic craftsmen showing that there was a soft technology and that the people using it were skilled.

**THE SCHÖNINGEN SPEARS:** "The Schöningen spears, discovered in Germany in 1995 and subsequent years,...were hailed as the oldest known spears and showed 'design and construction skills previously

attributed only to modern humans' (Kouwenhoven 1997). "The Schöningen spears are now thought to be about 295 ka old..." (See reference next.)

**THE CLACTON SPEAR:** "At 400,000 years old, the yew-wood Clacton spear is the earliest known worked wooden implement."

Lu Allington-Jones (2015) The Clacton Spear: The Last One Hundred Years, *Archaeological Journal*, 172:2, 273-296, DOI: 10.1080/00665983.2015.1008839

## THE BASKET AGE?

"There are two reasons, according to Jim Adovasio, we don't think of baskets or textiles when we think of the Stone Age. One is that stones and bones, being far more durable, are far more common at archeological sites than artifacts made of fiber. But the other reason, says Adovasio, an archeologist at Mercyhurst College in Erie, Pennsylvania, is a bias on the part of archaeologists who study the era. "The conventional wisdom has been that a time-consuming task like weaving would only be practiced by sedentary, agrarian cultures. [ED: Which generally means the much later Neolithic era and not the Paleolithic era.]"

Menon, Shanti. "The Basket Age." *Discovery Magazine*, January 1996  
Issue, <http://discovermagazine.com/1996/jan/thebasketage619>

## THE BASIC PRINCIPLE OF BASKET WEAVING

The principle of basket weaving is quite simple. One set of strands is at a right angle to another set of strands. In basket weaving the vertical stands, known as spokes, are fairly hard. Then the opposing strands, called weaver strands, are more flexible and wrap around the spokes to make the walls or the surface of the basket.

This basic structure can be applied to a wide variety of artifacts small and large such as sandals, hammocks, thatched roofs, and boats. The key was understanding the right angle relationship between the structural elements.

While the basic idea for baskets is simple, there are hundreds of ways to make baskets and hundreds of basket shapes and sizes.

I think it is likely that the first baskets were simple ones made with vines and these baskets were fashioned after bird's nests and spider webs. Then over hundreds of thousands of years, basketry evolved along with a variety of related products. I also believe that in the beginning, the strands were often wide (a wide gauge as Dr. Adovasio referred to them) but this did not limit what could be accomplished.

It then seems likely that basket weaving and related techniques led to the development and use of finer strands (a narrower gauge) which eventually lead to cordages such as rope and also string, twine, and thread. This allowed the creation of nets which again used the right angle principle. Then with the help of a loom, work with fine fibers evolved into fine weaving to make cloth. However, the basic right-angle principle was still the same.

# INTRODUCTION TO POSSIBLE PALEOLITHIC WOVEN-FIBER TECHNOLOGY

To present a general idea of the wide range of objects that could have been made, even at a basic level, here is a short introduction.

In the beginning, Woven-Fiber constructions were most likely made with large reeds or stalks such as palm fronds, vines or runners, reeds, roots, rushes, bamboo, sedges, rattan, various local grasses, various straws, willow, tree bark plus splint baskets or chip baskets, made of wide wood shavings. This is a list of the most common plant materials, but in every location, there was almost always a plant of some kind that could be woven into a basket.



Traditional Ukrainian hat with a 'wide gauge' strands.

And there were/are numerous variations even for a specific design. Some could hold water without leaking and without any further treatment, for example, and some would allow a small amount of ventilation while others were almost open so that birds or live snails could be put inside them.

There are general names for this kind of construction such as wicker and wickerwork as well as caning. The general terms for basket weaving such as basketwork and basketry are also used. And the term plaiting is often used. It means braiding, intertwining, lacing and knotting.

The types of objects that could be constructed utilizing such basic weaving technology was/are wide-ranging, including shoes, hats, bowls, raincoats, hampers, boxes, bags, satchels, backpacks, brooms, brushes, mats, steam cookers, fish and eel traps, furniture, tables, bedding, hammocks, cribs, dolls, bird carriers, shields, coffins, walls, roofs, houses small & large, boats small & large and even bridges (see below).

Weaving techniques could also be combined with other materials such as wood to make furniture. And fiber weaving was often combined with clay or resin and other materials. Naturally, occurring bitumen was/is used to waterproof reed boats. Each product often involved a quite different, although related, process. In addition baskets and related technologies were used with wine presses, the making of olive oil and other processes. A winnowing-basket was/is used to separate the chaff from the grain. In the first known civilization, that of Sumer and later Babylon, large rugged esparto baskets were used to transport clay to be used for building. This was so important to these early civilizations that in a Sumerian creation myth a principle god, Enlil, declared that "the pickax and the basket build cities."

## **DOES THIS PROVE THAT WOVEN-FIBER TECHNOLOGY OCCURRED MUCH EARLIER IN THE PALEOLITHIC ERA? ABSOLUTELY NOT!**

I have made a case for the presence of Woven-Fiber Technology early in the evolution of hominids. However, all I can say is that this evidence makes it highly probable that there was such a developing technology. I believe it also means that it was highly improbable that it did not happen.

However, until we can find definitive physical proof we are still in the world of speculation. Yet if many anthropologists accept the idea, the chances of finding solid evidence become much greater, as they will be looking for such evidence. Dr. Adovasio has written the definitive book for recognizing and documenting the remains of perishable fiber items. So with his help, hopefully, more evidence will be located and properly dated.

Adovasio, Dr. J. (2010). *Basketry Technology:  
A Guide to Identification and Analysis, Updated Edition.*  
California: Left Coast Press.

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## **BASIC BASKETS**



**A simple basic basket type design.**

"Traditional water container made of palm leaves from Camenaga / East Timor"

[https://commons.wikimedia.org/wiki/File:Traditional\\_water\\_container\\_made\\_of\\_leaf\\_from\\_Camanasa.jpg](https://commons.wikimedia.org/wiki/File:Traditional_water_container_made_of_leaf_from_Camanasa.jpg)





**Baskets made with wide strands (wide gauge) with different materials.**

(Left) A Tamil traditional basket made from wide-gauge palm strands.

[https://commons.wikimedia.org/wiki/File:Palmyra\\_craft\\_work.jpg](https://commons.wikimedia.org/wiki/File:Palmyra_craft_work.jpg)

(Middle) A basket made from kudzu.

[https://commons.wikimedia.org/wiki/File:Handmade\\_basket\\_kudzu.jpg](https://commons.wikimedia.org/wiki/File:Handmade_basket_kudzu.jpg)

(Right) A basket made from wide strands of straw.

[https://commons.wikimedia.org/wiki/File:Cesto\\_de\\_palha\\_%3D\\_Straw\\_baskets.JPG](https://commons.wikimedia.org/wiki/File:Cesto_de_palha_%3D_Straw_baskets.JPG)



A woodsplint basket by Nauset or Wampanoag native Americans.

[https://commons.wikimedia.org/wiki/File:Basket\\_\(splint\),\\_Nauset\\_or\\_Wampanoag,\\_collected\\_in\\_Barnstable\\_MA\\_in\\_1892\\_-\\_Native\\_American\\_collection\\_-\\_Peabody\\_Museum,\\_Harvard\\_University\\_-\\_DSC05470.JPG](https://commons.wikimedia.org/wiki/File:Basket_(splint),_Nauset_or_Wampanoag,_collected_in_Barnstable_MA_in_1892_-_Native_American_collection_-_Peabody_Museum,_Harvard_University_-_DSC05470.JPG)



## Basket Weaving.

(Left) 2007 Smithsonian 41st Folklife Festival - Roots of Virginia.

[https://commons.wikimedia.org/wiki/File:43.SFF41.Day2.NM.WDC.28jun07\\_\(657130602\)\\_\(2\).jpg](https://commons.wikimedia.org/wiki/File:43.SFF41.Day2.NM.WDC.28jun07_(657130602)_(2).jpg)

(Middle) Bamboo basket weaving in Hainan, China.

[https://commons.wikimedia.org/wiki/File:Basket\\_making\\_in\\_Hainan\\_-\\_02.JPG](https://commons.wikimedia.org/wiki/File:Basket_making_in_Hainan_-_02.JPG)

(Right) A Tamil bamboo basket in the making.

[https://commons.wikimedia.org/wiki/File:A\\_bamboo\\_basket\\_making.JPG](https://commons.wikimedia.org/wiki/File:A_bamboo_basket_making.JPG)

## MORE COMPLEX DESIGNS



(Left) Indigenous Brazilian Xavante basket made with plaited and twined palm leaf strips.

[https://commons.wikimedia.org/wiki/File:Basket,\\_plaited\\_and\\_twined\\_palm\\_leaf\\_strips,\\_Xavante\\_-\\_AMNH\\_-\\_DSC06163.JPG](https://commons.wikimedia.org/wiki/File:Basket,_plaited_and_twined_palm_leaf_strips,_Xavante_-_AMNH_-_DSC06163.JPG)

(Middle) "Twined carrying basket of the Brazilian Sherente people."

[https://commons.wikimedia.org/wiki/File:National\\_Museum\\_of\\_Ethnology,\\_Osaka\\_-\\_Twined\\_carrying\\_basket\\_-\\_Sherente\\_people\\_in\\_Brazil\\_-\\_Collected\\_in\\_1977.jpg](https://commons.wikimedia.org/wiki/File:National_Museum_of_Ethnology,_Osaka_-_Twined_carrying_basket_-_Sherente_people_in_Brazil_-_Collected_in_1977.jpg)

(Right) A Sami (previously known as Laplanders) basket.

[https://commons.wikimedia.org/wiki/File:Sami\\_basket\\_-\\_Nordiska\\_museet\\_-\\_Stockholm,\\_Sweden\\_-\\_DSC09954.JPG](https://commons.wikimedia.org/wiki/File:Sami_basket_-_Nordiska_museet_-_Stockholm,_Sweden_-_DSC09954.JPG)





The more complex coiled basket technology. This is called straw binding.

<https://commons.wikimedia.org/wiki/File:Halmbinding.jpg>

## HATS AND SANDALS



(Left) Straw hat, Vietnamese Women's Museum

[https://commons.wikimedia.org/wiki/File:Straw\\_hat,\\_Vietnamese\\_Women%27s\\_Museum.jpg](https://commons.wikimedia.org/wiki/File:Straw_hat,_Vietnamese_Women%27s_Museum.jpg)

(Middle) Woven palm frond hat

[https://commons.wikimedia.org/wiki/File:Chapeau\\_congolais.jpg](https://commons.wikimedia.org/wiki/File:Chapeau_congolais.jpg)

(Right) Ukrainian straw hat

[https://commons.wikimedia.org/wiki/File:%D0%A3%D0%BA%D1%80%D0%B0%D1%97%D0%BD%D1%81%D1%8C%D0%BA%D0%B8%D0%B9\\_%D0%B1%D1%80%D0%B8%D0%BB%D1%8C.JPG](https://commons.wikimedia.org/wiki/File:%D0%A3%D0%BA%D1%80%D0%B0%D1%97%D0%BD%D1%81%D1%8C%D0%BA%D0%B8%D0%B9_%D0%B1%D1%80%D0%B8%D0%BB%D1%8C.JPG)



(Left) Neolithic woven sandal from the Cave of the Bats in Granada, Spain (la Cueva de los Murciélagos).

[https://commons.wikimedia.org/wiki/File:Cester%C3%ADa\\_Murci%C3%A9lagos\\_04.JPG](https://commons.wikimedia.org/wiki/File:Cester%C3%ADa_Murci%C3%A9lagos_04.JPG)

(Middle) Reconstruction of the inside of the shoes of the Neolithic frozen natural mummy known as Ötzi. The photo shows the woven structure inside the shoe.

<https://commons.wikimedia.org/wiki/File:%C3%96tzi-Schuhe.jpg>

(Right) "Basketry Sandal, Egypt, New Kingdom - Roman Period (1569 BCE - 337 CE)"

[https://commons.wikimedia.org/wiki/File:Basketry\\_Sandal\\_LACMA\\_M.80.202.483.jpg](https://commons.wikimedia.org/wiki/File:Basketry_Sandal_LACMA_M.80.202.483.jpg)

## SPECIAL PURPOSE



(Left) "Traditional basket to pick snails, Southern Spain."

[https://commons.wikimedia.org/wiki/File:Snail\\_basket.jpg](https://commons.wikimedia.org/wiki/File:Snail_basket.jpg)

(Middle) Besakih Bali Indonesia Roasters-in-Baskets

[https://commons.wikimedia.org/wiki/File:Besakih\\_Bali\\_Indonesia\\_Roasters-in-Baskets-02.jpg](https://commons.wikimedia.org/wiki/File:Besakih_Bali_Indonesia_Roasters-in-Baskets-02.jpg)

(Right) Vincenc Pregl knits wood for fruit drying,

[https://commons.wikimedia.org/wiki/File:Vincenc\\_Pregl\\_plete\\_leso\\_za\\_su%C5%A1enje\\_sadja,\\_Lo%C5%BEE\\_1958\\_\(4\).jpg](https://commons.wikimedia.org/wiki/File:Vincenc_Pregl_plete_leso_za_su%C5%A1enje_sadja,_Lo%C5%BEE_1958_(4).jpg)





(Left) A bee skep basket (a special basket to house a beehive)  
with stand and landing board, Sweden

[https://commons.wikimedia.org/wiki/File:Bee\\_Skep\\_stand\\_and\\_landing\\_board,\\_Skansen,\\_Stockholm.jpg](https://commons.wikimedia.org/wiki/File:Bee_Skep_stand_and_landing_board,_Skansen,_Stockholm.jpg)

(Middle) Fish trap, Vietnam

[https://commons.wikimedia.org/wiki/File:Fish\\_trap,\\_Xinh\\_Mun\\_-\\_Vietnam\\_Museum\\_of\\_Ethnology\\_-\\_Hanoi,\\_Vietnam\\_-\\_DSC03178.JPG](https://commons.wikimedia.org/wiki/File:Fish_trap,_Xinh_Mun_-_Vietnam_Museum_of_Ethnology_-_Hanoi,_Vietnam_-_DSC03178.JPG)

(Right) "A donkey with traditional esparto panniers"

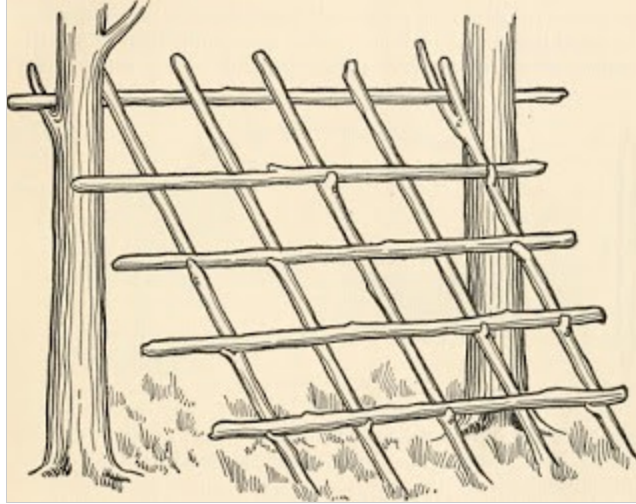
[https://commons.wikimedia.org/wiki/File:Donkey\\_panniers.jpg](https://commons.wikimedia.org/wiki/File:Donkey_panniers.jpg)



"Satyr working a wine press consisting of a pile of round wicker-work mats. Fragmentary terracotta relief, Roman artwork, 1st century AD."

[https://commons.wikimedia.org/wiki/File:Satyrs\\_vine\\_press\\_BM\\_D550.jpg](https://commons.wikimedia.org/wiki/File:Satyrs_vine_press_BM_D550.jpg)

# WALLS, ROOFS & HOUSES



METHOD OF THATCHING A LEAN-TO

"Method of thatching a lean-to wood, and these are best made by building what is known as a lean-to. Look for two trees standing from eight to ten feet apart on your camping place, with branches from six to eight feet above the ground. By placing a pole from one tree to the other in the crotches and leaning other poles against this one, brush-wood can be woven in to form a very good roof. Branches of the balsam or hemlock are best for this purpose, and the needles should point down. It is well to collect as many soft, thick tips of trees of this character as possible, both for the thatching and to make the beds."

[https://commons.wikimedia.org/wiki/File:Outdoor\\_life\\_and\\_Indian\\_stories\\_-\\_making\\_open\\_air\\_life\\_attractive\\_to\\_young\\_Americans\\_by\\_telling\\_them\\_all\\_about\\_woodcraft\\_signs\\_and\\_signaling\\_the\\_stars\\_fishing\\_camping\\_-\\_also\\_stories\\_of\\_noted\\_\(14750032671\).jpg](https://commons.wikimedia.org/wiki/File:Outdoor_life_and_Indian_stories_-_making_open_air_life_attractive_to_young_Americans_by_telling_them_all_about_woodcraft_signs_and_signaling_the_stars_fishing_camping_-_also_stories_of_noted_(14750032671).jpg)



Wickerwork fence, UK

[https://commons.wikimedia.org/wiki/File:Wickerwork\\_fence\\_and\\_road\\_past\\_Old\\_Hall\\_Farm\\_-\\_geograph.org.uk\\_-\\_529110.jpg](https://commons.wikimedia.org/wiki/File:Wickerwork_fence_and_road_past_Old_Hall_Farm_-_geograph.org.uk_-_529110.jpg)





Clay walls.

<https://commons.wikimedia.org/wiki/File:Lehmausfachung.jpg>



(Left) Roof weaving, Bodi Tribe, Ethiopia

[https://commons.wikimedia.org/wiki/File:Roof\\_Weaving,\\_Bodi\\_Tribe\\_\(11247577385\).jpg](https://commons.wikimedia.org/wiki/File:Roof_Weaving,_Bodi_Tribe_(11247577385).jpg)

(Right) Roof in place on a house, Konso Village, Ethiopia

[https://commons.wikimedia.org/wiki/File:Konso\\_Village,\\_Ethiopia\\_\(7995031746\).jpg](https://commons.wikimedia.org/wiki/File:Konso_Village,_Ethiopia_(7995031746).jpg)



(Left) Monacan Indian village, Virginia -- a recreation.

[https://commons.wikimedia.org/wiki/File:Monacan\\_village\\_hut-Natural\\_Bridge\\_State\\_Park-palisade\\_\(30681885352\).jpg](https://commons.wikimedia.org/wiki/File:Monacan_village_hut-Natural_Bridge_State_Park-palisade_(30681885352).jpg)

(Right) Recreated Zulu hut in South Africa

[https://commons.wikimedia.org/wiki/File:Herboude\\_iQhugwane\\_naby\\_Dingaanstat-grootgang,\\_a.jpg](https://commons.wikimedia.org/wiki/File:Herboude_iQhugwane_naby_Dingaanstat-grootgang,_a.jpg)





A home in the indigenous pre-Incan community in South America  
(the Uru or Uros people) made with woven-fiber technology.

[https://commons.wikimedia.org/wiki/File:Photo\\_-\\_Floating\\_Islands\\_\(Puno,\\_Peru\).JPG](https://commons.wikimedia.org/wiki/File:Photo_-_Floating_Islands_(Puno,_Peru).JPG)

# BOATS & WATERCRAFT



**Bamboo Raft**

A bamboo raft uses the same right angle construction used in weaving.

[https://commons.wikimedia.org/wiki/File:Bamboo\\_raft.jpg](https://commons.wikimedia.org/wiki/File:Bamboo_raft.jpg)



**Coracle Boats also known as Basket Boats**

This design is based on basket construction.

These boats can be very small for just one person or huge so that they can carry tons of materials

(Left) Tungabhadra River and Coracle Boats

[https://commons.wikimedia.org/wiki/File:Tungabhadra\\_River\\_and\\_Coracle\\_Boats.JPG](https://commons.wikimedia.org/wiki/File:Tungabhadra_River_and_Coracle_Boats.JPG)

(Right) Round boats (Putti Teppalu) in Krishna river at Srisailem

[https://commons.wikimedia.org/wiki/File:Round\\_boats\\_\(Putti\\_Teppalu\)\\_in\\_Krishna\\_river\\_at\\_Srisailem.jpg](https://commons.wikimedia.org/wiki/File:Round_boats_(Putti_Teppalu)_in_Krishna_river_at_Srisailem.jpg)



## Reed Boats

These boats are made of woven reeds. They can be small or relatively large.



Reed boats in the indigenous pre-Incan community in South America (the Uru or Uros people) made with woven-fiber technology.

[https://commons.wikimedia.org/wiki/Category:Uros\\_islands](https://commons.wikimedia.org/wiki/Category:Uros_islands)



Reed boats in the indigenous pre-Incan community in South America (the Uru or Uros people) made with woven-fiber technology.

[https://commons.wikimedia.org/wiki/Category:Uros\\_islands](https://commons.wikimedia.org/wiki/Category:Uros_islands)



Reed boats in the indigenous pre-Incan community in South America  
(the Uru or Uros people) made with woven-fiber technology.  
[https://commons.wikimedia.org/wiki/Category:Uros\\_islands](https://commons.wikimedia.org/wiki/Category:Uros_islands)



# BRIDGES



(Left) Woven-Fiber suspension bridge

<https://commons.wikimedia.org/wiki/File:IRB-7-MUDDY2.jpg>

## **Living roots bridges made by weaving living roots from trees**

(Middle) Double\_Decker Living Root Bridge

[https://commons.wikimedia.org/wiki/File:Double\\_Decker\\_Living\\_Root\\_Bridge4.jpg](https://commons.wikimedia.org/wiki/File:Double_Decker_Living_Root_Bridge4.jpg)

(Right) Rangthylliang 50+ meter living root bridge

[https://commons.wikimedia.org/wiki/File:1\\_Rangthylliang\\_1.JPG](https://commons.wikimedia.org/wiki/File:1_Rangthylliang_1.JPG)

# RITUAL



"New Orleans, Mardi Gras Day: Street costumers in straw/wicker outfits"

<https://commons.wikimedia.org/wiki/File:NOMG07WikerPeople.jpg>





### **Wicker man (ritual)**

An ancient ritual of the burning man

-- made with woven fibers and then burned in a ritualistic manner.

[https://commons.wikimedia.org/wiki/Category:Wicker\\_man\\_\(ritual\)](https://commons.wikimedia.org/wiki/Category:Wicker_man_(ritual))

[1] Black, Jeremy; Green, Anthony (1992), *Gods, Demons and Symbols of Ancient Mesopotamia: An Illustrated Dictionary*, London, England: The British Museum Press, p. 182.

[2] Kramer, Samuel Noah (1944, 1961). *Sumerian Mythology*, Revised Edition. Philadelphia: University of Pennsylvania Press, p. 57.

<https://www.sacred-texts.com/ane/sum/sum07.htm>

[3] Kramer (1944/1961:57).

[4] 186-189. Uttu, the beautiful woman, cried out: "Woe, my thighs." She cried out: "Woe, my body. Woe, my heart." Ninhursaja removed the semen from the thighs.

190-197. She grew the 'tree' plant, she grew the 'honey' plant, she grew the 'vegetable' plant, she grew the esparto grass...

ETCSLtranslation, The ETCSL project, Faculty of Oriental Studies, University of Oxford, 2006.

<http://etcsl.orinst.ox.ac.uk/cgi-bin/etcsl.cgi?text=t.1.1.1&charenc=j#>

[5] Kramer (1944/1961:53).

[6] Kramer, Samuel Noah (1963). *The Sumerians: Their History, Culture, and Character*. Chicago: The University of Chicago Press, p. 116.