

# Torralba

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## **1 Overview of the Torralba Site**

The site of Torralba, named after a nearby village, is situated in north-central Spain, 156 km northeast of Madrid; it lies near the end of a valley cut by the Ambrona-Masegar river. Two km upstream is another significant site named Ambrona. Animal bones were discovered at Torralba in 1888 when water mains were laid during the construction of a railway. Between 1909 and 1911, the Marqués de Cerralbo carried out excavations, but never published a full description of his findings. Torralba lay unnoticed until 1961-63, when F. Clark Howell conducted excavations at the remaining intact portion of the site; he also conducted further excavations in 1980-81, and 1984.

Torralba is significant because evidence of ancient hominid activity was found among the animal remains. This was used to suggest that early humans were involved not only in

animal butchery, but in organized hunting activities as well.

## **2 Excavations**

Unfortunately, no detailed plans remain of how the Marqués de Cerralbo conducted his excavation. The artifacts that he recovered still exist, but without their associations in the archaeological record (Howell, 1966:122); these include 537 stones identified as being shaped by humans (including bifaces, flake tools, and waste flakes) and 28 pieces of shaped wood. As well, the bones of a number of mammals were recovered, mostly elephant, horse, and deer bones.

The 1961-63 excavations by Howell appear to have been conducted more systematically. Test pits were dug to determine the type of stratigraphy present (Howell, 1966:114), showing layers of clay corresponding to swamp deposits in which 9 to 10 “occupation surfaces” were identified (Klein, 1987:14). An area undisturbed by Cerralbo was then partitioned into one-metre squares, and a horizontal excavation conducted of 300 square metres (no sampling strategy is apparent here). Bones and tools were mapped, drawn, and photographed before being removed and catalogued; larger bones were also encased in plaster (Howell, 1965:87). It is important to note, however, that despite this seeming attention to detail, no fine screening was conducted during Howell’s excavations of Torralba (Klein, 1987:23).

Howell recovered many shaped stones from this excavation - 697 of them. About a quarter were biface tools, created by striking stone with stone (although some were finished with bone, antler, or wood tools); most of these were cleavers as opposed to hand-axes. Flake tools are also very common. Of these, side-scrapers and denticulates make up about half, while notches or becs are the next most frequent. Other flake tools like borer, knives, and pointed flakes were present in low frequency. Howell notes that the workmanship and technique used in the stone are indicative of Lower Acheulian technology, and are similar to those found among Homo Erectus sites in Africa. Examining the stones further, he also notes that cores are very rare among the assemblage, suggesting that the flake tools were fashioned elsewhere (Howell, 1966:132-137). Later analysis of the materials used show that the bifacial tools were made from limestone and chert available at the site, while the flakes were made from quartzite and flint which were procured from elsewhere (Binford, 1987:76).

The excavation by Howell also revealed many bones. Noteworthy assemblages include (Howell, 1966:123-5):

- the relatively complete skeletal remains of the left side of a large elephant, with the bones of its right side scattered nearby;
- an elephant skull resting upright, with the cranial vault “deliberately smashed away”;
- and

- an assemblage of large elephant bones set out in a linear east-west fashion.

Based on tusk counts, Howell concludes there are at least 30-35 elephants. Based on bone counts, he also concludes there were half as many horses, and aurochs and deer in smaller numbers.

Howell also notes that a thin layer of charcoal and carbon was found scattered widely over the site (Howell, 1965:84). No human fossils (teeth or bone) were found.

### **3 Interpretation**

Torralba does not contain materials suitable for radiometric dating, and the site cannot be dated geologically; an estimate based on the fauna and the geologic setting places it at  $500,000 \pm 200,000$  years old (Klein, 1987:14). Howell dates the site to earlier than 300,000 years (Howell, 1965:85), while Fagan has noted that the dating of the site is disputable, and gives figures of 200,000 or 400,000 years ago (Fagan, 1998:94).

F.C. Howell's interpretation of the archaeological record is depicted in vivid artistic detail in his 1965 work "Early Man", which has been described by Binford as an "extremely influential book"(Binford, 1987:49). As no human fossils or hearths were ever found, Torralba was probably not a residential area. Instead, Howell interpreted the large number of animal remains as a hominid kill site, and proof that hominids here had "reached the

point of being able to kill very large animals” based on his recovery of elephant bones. Howell asserts that their death could only have been brought about by humans as shown by the bone evidence; the elephants bones “were far and away too numerous to be explained away as having gotten there by accident”. He also notes their condition; many (including the largest) had been broken “presumably to get at the marrow”; as earlier noted, he has stated that an elephant skull was deliberately smashed presumably to retrieve the brains for consumption (Howell, 1965:84).

As stone tools were found among the bones, Howell concludes that hominids were thus directly involved in causing the death of the elephants. Noting that the flaked stone tools were created elsewhere, he suggests that such activity must have been preplanned and deliberate (implying that the hunting of elephants was also a preplanned activity). Howell then extrapolates further, suggesting further hominid behaviour to fit the evidence. He interprets the presence of charcoal as a sign that grass and brush was set on fire over a large area; he asserts this was done by hunters driving elephants into the mud where they would then be mired and easily killed. Regarding the distinct assemblages, Howell has suggested that the left side of the elephant skeleton was a result of humans butchering only the right side of the elephant, and that the linear arrangement of bones was used by hominids to better cross the swamp (Howell, 1965:94-97).

Based on this interpretation, Howell concludes that hominids (*Homo Erectus*, based on

the stone tools) were capable of coordinated hunting, even to the extent that “it must be assumed” Homo Erectus “had some powers of speech” in order to plan and execute such an animal drive (Howell, 1965:83). This interpretation had far reaching consequences; it implied that Homo Erectus was intellectually superior to his Australopithecus ancestors, and that he also “was a vegetarian turned meat eater” (Howell, 1965:79).

## **4 Reinterpretations**

Through the use of middle range theory, newer work has questioned Howell’s interpretation of the archaeological record. Lewis Binford pointed out in 1981 that the minimum number of animals at any single occupation level at Torralba is less than fifteen, implying that only a few animals were killed over the long period of time required to form the site (Shipman & Rose, 1983:466). Howell responded to this argument with evidence that the bones from Torralba and Ambrona showed direct alteration by hominids - cutmarks from stone tools which were marks of human butchery on the bones (Shipman & Rose, 1983:466). However, Shipman & Rose (1983) have shown using scanning electron microscopic analysis that these marks are in fact infrequent. They suggest that the many grooves on the bones which were at first interpreted as cutmarks may have been instead left by geological processes such as the settling of gravel, or by freezing and thawing. They also point out that any genuine cutmarks have been severely eroded by post-depositional destructive processes.

Indeed, Butzer has noted that many rocks at Torralba were fractured by frost, and that there is strong evidence for sagging, slumping, and other erosion processes during the formation of the site (Butzer, 1965:1718).

Elsewhere, Klein has noted that Howell “assumed that the presence of artifacts at a site indicated that people had killed and butchered the animals represented by bones”, but that today “nothing can be assumed about the relationship between artifacts and bones at any archeological[sic] site” (Klein, 1987:17). He argues that the artifacts at Torralba are simply not numerous enough to prove that humans were directly responsible, and that it could be imagined that the artifacts and bones could have been associated by chance near the water source. Klein has also recounted the minimum number of individuals which could have accounted for the bones, and comes up with numbers far lower than Howell’s initial estimates (for example, he counts only between 1 and 8 elephants). He also notes that the fossil evidence has been badly damaged and has been subject to transport by water; these may have led to broken bones and disordering of the assemblages.

In a later analysis, Lewis Binford gives further criticism of Howell’s interpretation of Torralba as a hunting site (Binford, 1987). His research points out that the pattern of bone breakage could have been caused by natural agents, and concludes that the evidence for bone tool making is not supported by middle range theory. He also points out that fire occurs naturally in ecosystems; and that in a bog ecosystem, the charcoal would float to the

surface and then be deposited when the water eventually evaporates, thus created a layer of carbon.

Instead, Binford notes that marginal food parts - skull parts and limb bones - are most prevalent among the skeletons. In addition, denticulate and notch-type stone tools are found near these body parts, while scraper, cores, choppers, and bifaces are found near entire carcasses. Binford concludes that this association exists for a functional reason - that the denticulates and notches are more adapted to the processing of marginal food parts. As these latter types of stone tools are more prevalent at Torralba, Binford suggests that the dominant activity was the processing of scavenged kills by hominids who were not engaged in preplanned hunting, but instead happened by chance upon animal remnants. He also points to the biface tools which were created from limestone at the site as evidence that the hominids were not engaged in preplanned activity.

Paola Villa states bluntly that “it is no longer possible to view Torralba as an elephant hunting site” (Villa, 1990:307). At the same time, she compares the archaeological record of Torralba with another site in Spain, Aridos. There, she finds evidence to support the theory that hominids were capable of organized hunting, suggesting that hominid behaviour was variable between scavenging and hunting.

Villa then argues that Binford’s conclusions are too hasty; she notes that no analysis of the formation processes has been conducted, that the site has been badly disturbed (as noted

by Butzer), and that therefore no strong conclusion can be drawn about Torralba without comparison to other ancient sites.

## **5 Conclusion**

The evidence found at the Torralba site has been used to show that Homo Erectus was capable of killing large animals such as elephants, thereby supporting the theory that they were socially advanced enough to cooperate and communicate in such an endeavour (Fagan, 1998:93). However, this interpretation has been questioned, as the evidence is not at all conclusive. A great deal of such evidence has been lost due to the Marqués de Cerralbo amateur excavation, as well as the lack of sifting carried out by Howell. As well, erosion and water flow have damaged much of the fossil evidence and shifted the record out of context. With such a badly damaged site, the only sure conclusion that can be drawn is that hominids engaged in butchery of animals at Torralba. A stronger understanding of the geological processes as well as comparison with other ancient Homo Erectus sites may lead to better conclusions about the hunting behaviour of ancient humans, which in turn leads to a better picture of their social organization.

## References

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