

Elephants and stone artifacts in the Middle Pleistocene terraces of the Manzanares river (Madrid, Spain)

M. Santonja¹, A. Pérez-González², G. Vega³, I. Rus⁴

¹*Museo de Salamanca, Salamanca, Spain - musal@helcom.es*

²*Departamento de Geodinámica, Facultad de Ciencias Geológicas, Madrid, Spain*

³*Departamento de Prehistoria, Facultad de Geografía e Historia, Madrid, Spain*

⁴*Área de Arqueología, Dirección General de Patrimonio Histórico, Comunidad de Madrid, Spain*

SUMMARY: We discuss several sites with isolated specimens of *Elephas antiquus*, all of them located in Middle Pleistocene terraces of the Manzanares river. The sites of San Isidro, Orcasitas and Transfesa are in the +25 / 30 m terrace while Arriaga IIa is located in the complex terrace of Butarque. These sites are compared to the well-known sites of Aridos in the nearby Jarama valley.

1. INTRODUCTION

The lower section of the Manzanares river, from San Isidro in the city of Madrid, to the confluence with the Jarama river, 22 km downstream, contains the greatest number of Paleolithic sites known in the Iberian Peninsula. These sites are mostly located in the lower and middle terraces deposits of the river. The Manzanares river can be considered as the classical region of Spanish prehistory because the identification of lithic tools associated with faunal remains began in 1862 with the fieldwork of Casiano de Prado in San Isidro (Prado 1864). From that year until the present day, different researchers have located additional assemblages practically throughout this sector of the valley (Santonja & Villa 1990). The high deposit concentration is related to processes of synsedimentary subsidence that have affected the final portion of the Manzanares valley since the Middle Pleistocene (Pérez-González 1971, 1980) and have produced great accumulations of sands and floodplain muds.

In these deposits, 10 m thick or more from San Isidro onwards, faunal remains and stone artifacts have been preserved better than in the typical gravel terraces of other rivers in the Meseta or of the same Manzanares upstream of San Isidro (Fig. 1).

2. THE MANZANARES RIVER TERRACES

Upstream of San Isidro the Manzanares terraces appear in steps, with heights of +2/3 m, +10/13 m, +16/18 m, +30/32 m, +36/40 m (this level is doubtful), +54/57 m, +66/69 m, + 82/84 m and +90/94 m (Pérez-González 1980). Discontinuous remnants of the + 25-30 m San Isidro terrace have been recognized between this point and Villaverde Bajo. The systematic study of this approximately 9 km long section, which does not preserve levels higher than San Isidro, is at present difficult, due to growth of the city of Madrid in the last decades. According to observations made by Pérez de Barradas, Wernert and Royo in the 1920s (Royo 1929), downstream from San Isidro,

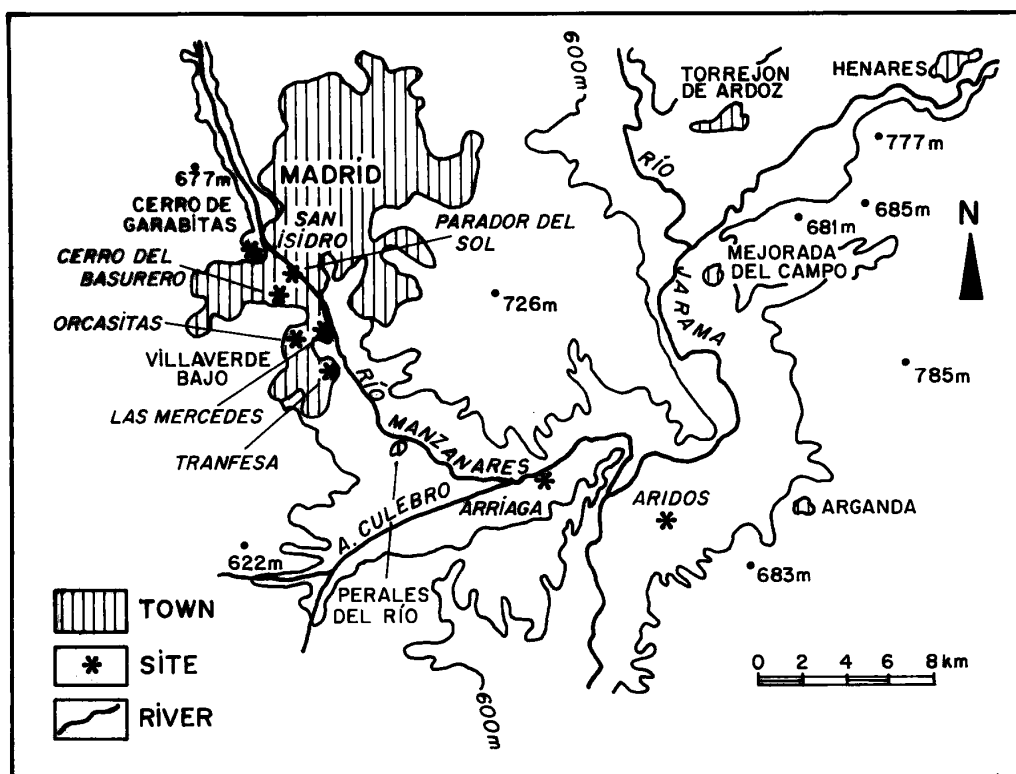


Fig.1 - Site location.

between the Toledo and La Princesa bridges (1500 m approximately), in addition to this terrace of +30 m there existed others at lower levels; their lowest gravel-bar layer rested on the Tertiary substratum, at +9/14 m, + 3/5 and + 1 m. The lowest terrace, which contained stone artifacts of Upper Palaeolithic type, was clearly observed toward the center of the sector, 400 m before La Princesa Bridge. Below, from Perales del Río onward, the levels at + 12-15 m, +18-20 m and +25-30 m are not stepped, but overlapping terraces giving rise to the complex terrace of Butarque (Goy *et al.* 1989) whose base is below the current floodplain level.

3. PALEONTOLOGICAL AND GEOLOGICAL FRAMEWORK

From the discovery of San Isidro up to the present, some faunal specimens have occasionally been found in the Manzanares river valley.

Most of them are isolated remains with only generic identification (*Bos*, *Cervus*, *Equus*) and not very precisely located. The most recent study (Sesé & Soto 2000) makes possible to distinguish at least two significant associations: the first one related to the San Isidro terrace and the second one to the Upper Pleistocene deposits from the last sector of the valley. Both of them cannot easily be correlated to the terraces near San Isidro. The San Isidro's faunal group is characterized by the presence of *Elephas (Palaeoloxodon) antiquus*, found at San Isidro, Transfesa, Orcasitas, Las Mercedes, Cerro del Basurero and Villaverde Bajo. *Praedama* sp., a megacerine, found only in Transfesa, presents some archaic character within the Middle Pleistocene and, according to Sese and Soto, might bring the cronology of this site, as well as the whole + 30 m. terrace, back to the Biharian-Toringian boundary which suggests OIS 11 to 13.

The Upper Pleistocene fauna which has been identified in the Arroyo del Culebro deposits of the Perales del Rio area, is characterized by species like *Megaceros* cf. *giganteus* and *Coelodonta antiquitatis* as well as by the absence of *Elephas antiquus*, whose presence, however, has been located in Parador del Sol's sand quarry, below San Isidro, and on the +9-14 m terrace (Royo 1929).

The +30 m terrace lithic industry can be described as Acheulean. On the lower levels, assemblages of younger aspect have been found and seem to belong to Upper Acheulean and Mousterian-like in a general sense (Santonja & Villa 1990), but it is necessary to closely revise these assemblages as well as the ones from the lowest levels, some of which might belong to the Upper Palaeolithic.

4. DEPOSITS WITH ISOLATED ELEPHANTS

Elephant remains have been found a number of times in Quaternary deposits of the Manzanares. Occurrences of *Mammuthus primigenius* are not well established, although in the museums of Madrid there are some tusks with no precise provenience. Practically all the well-known and identifiable remains correspond to *Elephas (Palaeoloxodon) antiquus platyrinchus*, a subspecies endemic to the Iberian Peninsula and typical of the Middle Pleistocene (Sesé & Soto 2000). In addition to isolated bones, groups of bones belonging to a single individual, similar to the Aridos occurrences (Santonja & Villa 1990) have been found several times, all located in the +25-30 m terrace. They are old finds, therefore the available information is limited. Another similar deposit is that of Arriaga IIa, in the complex terrace of Butarque, excavated in more recent times.

4.1. San Isidro

The stratigraphic sections of San Isidro were about 15 m thick, showing gravel bars at the bottom and sands with gravel and clay layers above. At the top, also with sandy layers, there was a facies of probable lateral origin and the

clay horizon of a red soil. During the middle of the 19th century (Paz Graells, 1897) grouped remains, though not in anatomical articulation, of two elephants were observed in a mud level. The two findspots were close, but independent. In one were observed at least the two tusks and a humerus, and in the other the pelvis, part of the jaw, a tusk and several long bones. In this level and in the lower ones, there were Acheulean artifacts (Santonja & Villa 1990), but their relation to the elephant remains was not clearly established.

4.2. Orcasitas

An excavation made in 1959 (Mazo 1994) provided the remains of an adult individual of *Elephas antiquus*, some 45-years old. Essentially it consisted of a skull with the two tusks in place, that lied in reverse position, resting on the occipital region. It rested on a layer of marls 80-cm thick, included in deposits of "marly sands" and under other of "clayey sands". Stone artifacts were not reported, but they occur in the same levels of the terrace.

4.3. Transfesa

The Transfesa quarry is also located in the +25-30 terrace. Thus remains of the two elephants, *Elephas antiquus*, found here in 1958 (Meléndez & Aguirre 1958) are of a similar chronology to those of San Isidro and Orcasitas. The remains were found on a gravel layer and were covered by marls and gravels. Acheulean tools are found in the same level, though the published observations do not permit to confirm their relationship to the faunal remains. According to Meléndez and Aguirre (1958), the deposit covered an area of 70x20 m, and the remains were somewhat dispersed. The larger elephant, an adult male 4,5 m tall, was represented by the right scapula, the left humerus (125 cm in length) the right ulna and radius, and the incomplete left femur. Of the other individual, a smaller male, were found the left humerus (118 cm long), the right ulna and radius in anatomical articulation, the left radius, the incomplete left femur, as well as one

of the tibias and an indeterminate side fibula. The cranium was resting on its base and was complete, the vault something flattened, possibly by the weight of the sediments, with the four molars in the jaw. The bones appeared slightly altered, in part fissured by weathering. Some long bones were broken, but there is no information about these features.

4.4 Arriaga IIa

The Arriaga sand quarry (Rus & Vega 1984) is located in the complex terrace of Butarque. Its age, based on the micromammals of the unit IIa (Sesé & Soto 2000) is estimated near the end of the Middle Pleistocene, more recent than Aridos and San Isidro. The archaeological level is included in a fine sand deposit, lying over marls and muds that correspond to the consolidated surface of an ancient floodplain. The excavation, carried out in 1984, revealed the remains of *Elephas antiquus*, a female, adult in age but not senile: a cranium lying in inverse position, the two tusks, two upper molars, a mandible with M3, the right scapula, vertebrae and ribs, possibly associated with stone artifacts. The remains were concentrated in some 8 sq.m of the 56 sq.m excavated. The excavation also produced 43 stone artifacts: cores, bifaces, flake tools and débitage. Another relevant feature of the site was the occurrence of various hollows, some of fluvial and biological origin, but others, especially a circular hole, 25 cm in diameter and 26 cm deep, under the elephant remains, more difficult to explain by natural processes.

5. CONCLUSIONS

Deposits with occurrences of only one elephant seem frequent in the floodplains of the Middle Pleistocene Manzanares terraces. In San Isidro, Orcasitas and Arriaga the remains lie over paleosurfaces, and are covered by sandy deposits of channel facies, suggesting that smaller elements might have been displaced. The deposit described in Transfesa would occupy a different position, in an abandoned meander loop. At Arriaga IIa there seem

to be associated stone artifacts, but that situation is less obvious in the other cases, especially at Orcasitas. The recorded findspots suggest a certain diversity of deposits, some with concentrated remains, in which the human intervention is clear (as is the case of Arriaga IIa, very similar to Aridos 2) and others (as Transfesa and San Isidro) with a greater dispersal of remains, perhaps comparable to Aridos 1, but of difficult interpretation with the available data.

6. REFERENCES

- Goy, J.L., Pérez-González, A. & Zazo, C. 1989. *Cartografía geológica del Cuaternario, geomorfología y Memoria correspondiente de la Hoja a E. 1:50.000 de Madrid (559)*. Madrid: Instituto Tecnológico GeoMinero de España
- Mazo, A.V., 1994. El cráneo de *Elephas antiquus* (Proboscidea, Mammalia) de Orcasitas (Madrid). *Estudios de Prehistoria Madrileña*, 9: 17-23.
- Meléndez, B. & Aguirre, E. de 1958. Hallazgo de *Elephas* en la terraza media del río Manzanares (Villaverde, Madrid). *Estudios Geológicos*, 23 (4): 597-605.
- Paz Graells, M. de la. 1897. *Fauna mastológica ibérica*. Madrid: Real Academia de Ciencias Exactas, Físicas y Naturales de Madrid.
- Pérez-González, A. 1971. Estudio de los procesos de hundimiento en el valle del río Jarama y sus terrazas (nota preliminar). *Estudios Geológicos* 37: 317-324.
- Pérez-González, A. 1980. Geología y estratigrafía de los yacimientos de Aridos en la llanura aluvial de Arganda (Madrid). In Santonja *et al.*, (eds.) *Ocupaciones ache-lenses en el valle del Jarama* 49-61. Diputación Provincial de Madrid.
- Royo Gómez, J. 1929. *Cartografía geológica y Memoria de la Hoja Geológica a E. 1:50.000 de Madrid (559)*. Madrid: Instituto Geológico y Minero.
- Rus, I. & Vega G., 1984. El yacimiento de Arriaga II: problemas de una definición actual de los suelos de ocupación. *Primeras*

Elephants and stone artifacts in the Middle Pleistocene terraces of the Manzanares river (Madrid, Spain)

- Jornadas de Metodología de la Investigación Prehistórica*: 387-404. Ministerio de Cultura.
- Santonja, M. & Villa, P. 1990. The Lower Palaeolithic of Spain and Portugal. *Journal of World Prehistory* 4 (1), 45-94.
- Sesé, C. & Soto, E. 2000. Vertebrados del Pleistoceno de Madrid. In J. Morales (ed.), *Patrimonio Paleontológico de la Comunidad de Madrid*: 216-243. Madrid: Consejería de Educación de la Comunidad de Madrid.