



THE WARRIORS' CUP

A brief recent history of El Cabezo del Tío Pío (Archena, Murcia)

The archaeological area is just over one kilometer to the east of the town of Archena in Murcia, alongside the River Seguar. In this area, the settlement is located on top of a hill known as El Cabezo del Tío Pío, where it was excavated by A. Fernández Avilés in 1943. The necropolis is on the southern slope of this settlement. Official excavations were carried out by J. San Valero and D. Fletcher, whose results revealed the importance of the site. Iberian tombs have been found in the necropolis, seven of which have been studied by J. M. García Cano and V. Page, who dated the necropolis to the end of the sixth century BC and the first half of the second century BC, with the peak moment of its use at the end of the 5th century and early decades of the 4th century BC. It seems that these were simple incineration tombs, in which grave goods were deposited directly, while the burial was covered with clay and earth. The materials studied include red and black Attic figures, Iberian pottery, remnants of sculptures, and the remains of pre-Roman falcata sword.

Special points of interest:

- The necropolis of El Cabezo del Tío Pío was active for several centuries, from the 4th –2nd centuries BC.
- The neighbouring settlement is a fortified *oppidum*.
- The findings have included Greek and Iberian pottery.



Aerial view (Google Maps) of El Cabezo del Tío Pío (Murcia), a small hill reaching a maximum height of approximately 220 metres.

Cup with bird protome from El Cabezo del Tío Pío.



Other types of decorated pottery from the south east

The decorated pottery found in El Cabezo del Tío Pío includes geometric and plant designs, animal figures, and less frequently, human figures. In this context, the *Warriors' Cup* is exceptional, with figures in a continuous frieze around the vessel. In other necropolises, cups have also been found decorated with war-

rior designs, as is the case of *El Cigarralejo*, which shows men marching to the sound of a double flute and lyre. However, natural designs were preferred in this style, both of plants and animals. They date from the 3rd-2nd century BC through to the change of era.

Decorated cup from El Cabezo del Tío Pío, 3rd - 1st centuries BC.



The *Warriors' cup of Archena*

The cup formed a part of a collection of Iberian pottery in private hands (Enrique Salas) and public hands (the Junta para Ampliación de Estudios) until in 1918 the piece arrived at the National Archaeological Museum, where it remains to this day. It is 41 cm high, with a maximum diameter of 36 cm.

For many years, the iconography of this vessel, without any fixed context, was one of the first images of warriors on Iberian pottery. H. Sandars

noted that its interior contained «incinerated remains», and so it was deduced that the vessel was used as a container for the cremated remains of the deceased.

This large cup, which has a flared rim, features one of the best known and particular Iberian iconic narratives, on the part of the vessel with the best visibility for this composition. It shows different scenes of warfare: on one side, a duel between two infantrymen covered by their

shields, while another warrior lies injured on the ground.

This is followed by another episode in which a horseman is riding to help another infantryman who is facing a rider charging towards him with a lance. In the same scene, a body lies on the ground, possibly dead, having been run through by a lance. A series of animals look upon the scenes over the surface of the vessel, including a wolf and several boar. All of them take part in and form a part of

the different moments in this story.

This is probably one of the most detailed iconographic documents of the Iberian world showing the different stages of a battle. It is especially significant as it was found in a necropolis, highlighting the connection between this tale and the person who was buried there.

«The same pretenders made him a follower of Enrique Salas because of that pot, and believing that he would find fortune, placed it in a box, and set off to travel around the world with it» (J. Pijoán 1911-1912: 685).

Rollout of the *Warriors' cup*



A *rollout* is a technique used to show objects such as bowls, jars or bottles as a continuous image, so that their decoration can be seen as a whole.

The object is photographed on a rotating platform, at fixed intervals. The camera and the lens are levelled to ensure the

optical axis of the camera is perpendicular to the rotation axis of the object.

In this case, a total of 35 images were taken with a rotation of 10° between each image.

In the post-processing stage, each shot was trimmed to maintain the same height, but

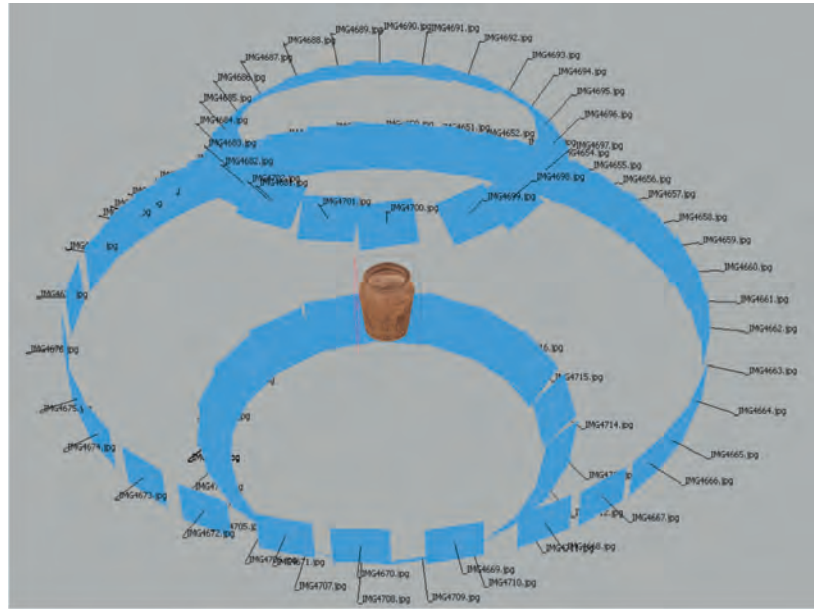
only the central, less distorted part of each photograph. All of these images were then stitched together automatically, taking advantage of the overlaps between them.

The software used is the same type used to take panoramic photographs.

Finally, the mosaic was processed to adjust its brightness, contrast and saturation, trimming it to remove any unnecessary parts.

The 3-D model

The cup was placed on a rotating base and photographed with a Pentax 645Z camera with a 51 megapixel sensor and a fixed focal length 120 mm lens. The lighting used two LED panels with diffusers. To obtain an authentic colour, a calibrated colour sheet was photographed, and all of the images were corrected according to the specific colour profile. The photos were then stitched together using a computer programme, creating a *cloud* of points with coordinates in three dimensions. This *cloud* was then used to create a grid of triangles, on which the colour was superimposed, based on the initial photographs. The three circles of photographs were taken at different positions and camera angles. With the cup in a normal position, a series of photographs were taken with the camera in a horizontal position, and another series at an angle of 45°. The cup was then photographed upside down from the same 45° angle.



The image shows the photos taken to create the 3-D model: a total of 73, taken from different perspectives.



3-D model of the Warriors' Cup. This is an embedded 3-D object; by opening this document in Acrobat Reader and clicking on the model, this will be activated and allow you to rotate it, change its size, make cross-sections, etc. The model is simplified to reduce its size. To see it in full quality, visit the link <https://skfb.ly/VVxx> and use the full screen setting on your monitor.

Participating bodies

MAN

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ARQUEOLÓGICO
NACIONAL

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GRUPO KRAKEN

ANÁLISIS DE DATOS
REPRODUCCIÓN Y MODELADO 3D



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CMPLab

CMPLab is a laboratory at the University Centre of Mérida, part of the University of Extremadura in Spain. It was created as a result of a project presented to a call for Funding for Scientific and Technical Equipment and Infrastructures from the State Secretariat for Research, and began operating in 2016. The CMPLab and its associated research groups use material for documenting cultural and archaeological heritage that includes two 3-D Go!Scan scanners, and a Pentax 645Z camera.



Basic bibliography:

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- San Valero, J.; Fletcher, D. 1947: Primera campaña de excavaciones en el Cabezo del Tío Pío (Archena). *Informes y Memorias de la Comisaría General de Excavaciones Arqueológicas*. Madrid.
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Other 3-D models from the series



Left: Dama de Galera, from tomb 20 of the necropolis of Tútugi (Galera, Granada), 7th century BC; centre: a two-piece funerary urn from the necropolis of Tútugi, 3rd century BC; right: the Bicha de Balazote, a limestone sculpture from the 6th century BC.