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THE ARCHAEOLOGICAL FIELD SURVEY OF THE MIDDLE GAIÀ VALLEY (TARRAGONA, SPAIN)

1. Introduction

This research project began in 2012 and focuses on the middle channel of the River Gaià (Tarragona, Catalonia, Spain. Fig.1). The Gaià is a river with a low water level that rises in the Brufaganya and Queralt Mountains and enters the Camp de Tarragona at Querol, to finally flow into the Mediterranean at Tamarit (Tarragona). On this stretch, the two banks contrast strongly in orographic terms: the right is flatter with some small hills, while the left is more rugged with mountainous sectors, such as the Montmell Mountains, where some of the peaks reach to over 800 metres (Fig.2. Study area gray square).

The main incentives for beginning research in this territory were the opportunity to compare the evolution of protohistoric settlement on the plains and in the mountains with the presence mineral resources including iron and silver-bearing lead and the existence of a major inland pass on the coastal corridor. Moreover, little research had been carried out on the area for the proposed chronological period. To increase our overall knowledge of it, an initial archaeological survey campaign has been carried out in 2012 and it is planned to continue this in coming years.

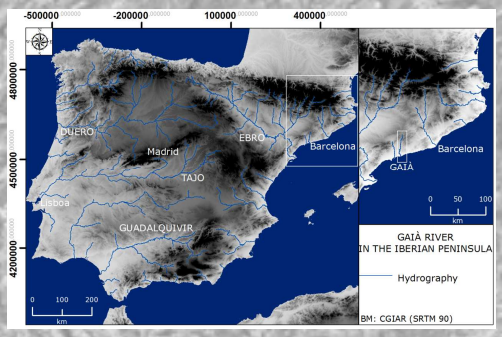

Fig.1

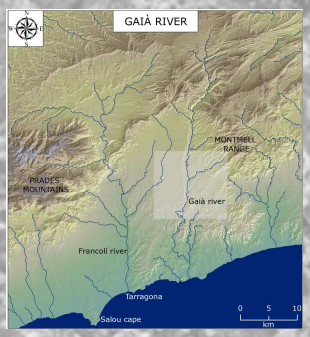

Fig.2

2. Objectives

- To investigate the evolution of protohistoric settlement on the middle reaches of the River Gaià during the first millennium BC.

- To study the ancient landscape and place it within the context of protohistoric settlement.

- To locate settlements whose archaeological excavation could contribute information on settlement evolution.

- To investigate the use of vertical aerial photography and multispectral imaging in researching the protohistoric period.

Fig.3

3. Methodology

-Fieldwork:

This consisted of surveying selected areas. Pre-survey planning was based on information compiled about the existence of known or unstudied archaeological sites in the area, with the aim of defining its size and obtaining typological and chronological information from surface finds.

Other places that showed no overt archaeological evidence were marked and surveyed because their features (e.g. hills or high points) made them possible settlement sites.

A five-member team carried out an intensive survey of the delimited area (with a 5-metre separation between surveyors, Fig.3) using agricultural plots as survey units. The data obtained from the survey were loaded into a Filemaker database and the SIG Arcview program (Fig.4. La Clota del Marquès, Puigpelat. To the left the surveyed plots and to the right the area of the archaeological site based on the pottery dispersion).

Fig.4

Fig.5

-Landscape study and investigation of the archaeological traces:

Of particular interest was the study of the ancient landscape, both natural elements and now-dry lakes, to associate it with protohistoric settlement (Fig. 5. Possible dry lake at Puigpelat, Tarragona. Silhouette outlined in grey on the 1:2500 infrared orthophoto map) or elements such as footpaths resulting from human occupation. Documental sources, historical maps and vertical aerial photography were used.

The following vertical aerial photography was used (Fig. 6. Vall del Gaià):

American Flight B 1956/1957 (ICC, WMS service)
Orthophoto map 1:2500 2010 (ICC)
Orthophoto map 1:2500 infrared 2010 (ICC, WMS service)

In the future we also plan to work with SPOT 5 (IGN) multispectral satellite imagery and Lidar (ICC).

To complete the fieldwork we are using vertical aerial photography and multispectral imaging to search for traces of archaeological settlements hidden in the subsoil. We are also studying the aerial photographs of sites we have already located on the ground to search for features we may have missed.

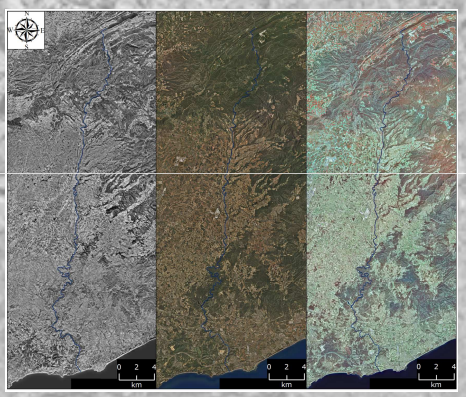

Fig.6

4. Conclusions

The use of vertical aerial photography has provided uneven results in this incipient investigation. It is obvious that it is of considerable use in investigating ancient landscape elements, for example in locating dry lakes or tracing ancient paths. Studying an unfiltered orthophoto map reveals a large number of anomalies on the terrain that may correspond to this type of element. This initial analysis must be followed by a more in-depth investigation to definitely confirm that they are ancient landscape elements.

With respect to the detection of archaeological structures in the subsoil, the results have been much less favourable, with the only notable case being that of La Clota del Marquès (Puigpelat, Tarragona) (Fig. 7). At this site possible structures can be observed in the photographs from American flight B (1956/1957) and those up to the 1:2500 infrared orthophoto map from 2010. We believe it is very important to begin to introduce this material and methodology into the study of the protohistoric period, as it will allow us to open up new fields and obtain new information on this period.

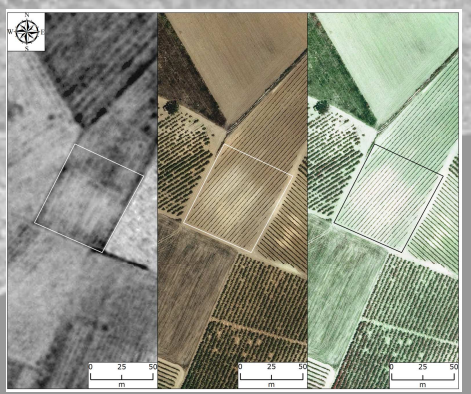

Fig.7

Acronyms: ICC Institut Cartogràfic de Catalunya / IGN Instituto Geográfico Nacional

Geographic Coordinate System: ETRS 89