Arturo de Lombera-Hermida *,**,***,
Xosé Pedro Rodríguez *,**

The Paleolithic site of As Gándaras de Budiño (O Porriño, Pontevedra)

The Paleolithic site of As Gándaras de Budiño is located in O Porriño industrial park (Pontevedra) (UTMX: 531.407; UTMY: 4.661.631). It is situated in the valley of the river Louro, which runs through the southern sector of the Galician Meridiana Depression, delimited on each side by the granite heights of Faro de Budiño to the east and Serra do Galiñeiro to the west. Discovered in 1961 by Henri Nonn, in 1963 excavation and survey work began under the guidance of Dr. Emiliano Aguirre (1964). At the same time as the excavation work was being carried out, a geological and stratigraphic study of the site and of several coastal and continental deposits was conducted in order to correlate the geomorphology of Budiño with its regional context (Butzer, 1967). The archaeological excavations proved the existence of large accumulations of material, identifying workshops areas and the presence of hearths. According to D. Echaide, the lithic assemblages would correspond to the Acheulean. Due to the methodological approach used in the excavations, As Gándaras de Budiño becomes the emblematic site of Paleolithic research in Galicia.

However, the association of the Acheulean lithic assemblages with the surprising carbon dating obtained from two carbon samples, within the Upper Pleistocene and *a priori* confirmed through stratigraphic correlation of the levels of As Gándaras with the deposits from the southeast coast, would make it one of the most controversial sites (Aguirre and Butzer, 1967).

Given this problem, in 1979 Julio M. Vidal Encinas resumed excavation between 1980 and 1982, opening several trenches near the area excavated by Emiliano Aguirre and recovering many materials associated with fluvial and colluvia formations, similar to those identified previously (Vidal, 1982). Finally, in 1991 rescue archaeological excavations were carried out under the guidance of Dolores Cerqueiro Landín.

Given the problematic and controversial chronological interpretation of this site, many review papers have dealt with the stratigraphy and geomorphological context of As Gándaras de Budiño (Ramil *et al.*, 1993; Gracia *et al.*, 2004), and of its lithic assemblages (de Lombera *et al.*, 2011; Méndez, 2007; 2008).

Synthesis papers based on the stratigraphic descriptions permit the different levels to be correlated and the sequence of the depositional processes observed at the As Gándaras de Budiño site to be reconstructed (Ramil *et al.*, 1993). Initially, the Louro basin was filled by various levels of arkoses and clays during the Upper Miocene. Then, the basin was captured by the dynamic of the Miño in the Pleistocene, forming the fluvial level sequence (T+67m; T+56m; T+33m; T+24m) and small lateral channels associated with the Louro valley, level T+24m being the level related to the site (fluvial levels). Following an episode of microfracturing and dismantling of the fluvial deposits and clay baselevels, the lower colluvium deposited, formed by two units (levels 6a and 6b). The lithic industries classified as Acheulean are located in this deposit. Following a second episode of erosion, dismantling and dispersion of the lower colluvium, sedimentation of the upper colluvium occurs, now over the underlying colluvium, over the source fluvial levels, over tertiary clay mate-

* IPHES, Institut Català de Paleoecologia Humana i Evolució Social, C/ Marcel.lí Domingo s/n. Campus Sescelades, (Edifici W3), Tarragona 43007
** Area de Prehistoria, Universitat Rovira i Virgili (URV), Av. Catalunya 35, Tarragona 43002
*** Grupo de Estudos para a Prehistoria do Noroeste (GEPN). Dpto. de Historia I, Universidade de Santiago de Compostela. Praza da Universidade 1, Santiago de Compostela 15782

Cerqueiro (1996)	Locus II (Vidal, 1984)	Locus I (Vidal, 1984)	Butzer (1967)	Aguirre (1964)
Level 2 (Colluvial)	Level 1	Level I	Level (7)	Surface level
	Level 2	Level II	Level (6c)	Upper Colluvium. *(Colluvium Levels)*
Level 5	Level 3	Level III Level IV	Leve (6b) Level (6a)	Lower Colluvium *(Colluvium Levels)*
Alluvial South	Level 4	Level IV	Level (5)	Terrace +24m and lateral channels *(Fluvial levels)*
			Level (3) Level (1)	Cáliza and arkoses. Upper Miocene

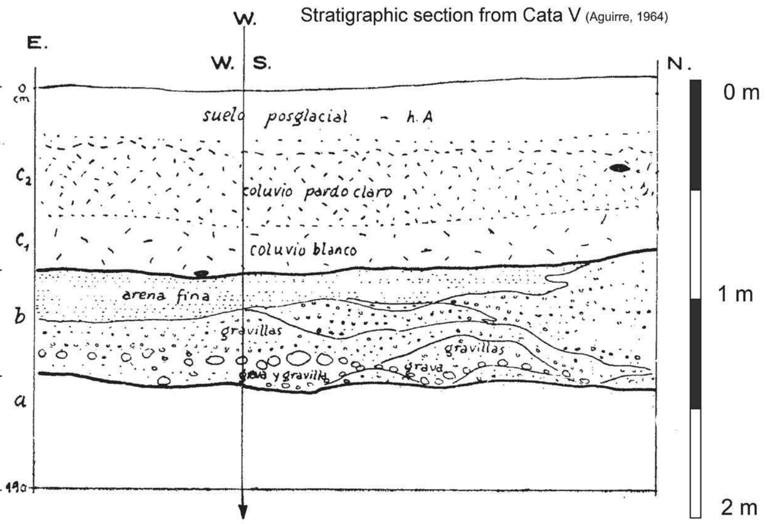

Figure 1. Stratigraphy of the As Gándaras de Budiño site and possible stratigraphic correlations between the different levels.

rials. This contains some industries as a result of disassembly of the lower levels (vg. Level 2 of Locus I). Finally different paedogenesis phenomena occur on the upper colluvium levels (Fig. 1).

The presence of lithic assemblages is constant throughout the sequence. The uniformity of the technology of the assemblages recovered from the different levels and trenches was identified from the very start. Adhering to the morphogenetic processes of the site, the origin of the lithic materials must be related to Acheulean settlements only, which are identified in the fluvial sequences associated to T+24m.

However, the materials associated to the upper colluvium showed certain volumetric and technological differences (lower incidence of Large Cutting Tools (LCT), smaller format) that, added to its stratigraphic position, led some authors to consider them as evidences of later settlements, initially linked to the Mousterian (vg. Level 2 of Locus I) (Vidal, 1982). Taphonomic reviews of colluvium levels show the existence of volumetric selection and mechanical alteration from rolling of the artefacts in the assemblages. At the same time, these assemblages show clear convergence at a technological level with those identified at the fluvial levels (de Lombera *et al.*, 2011; Méndez, 2008). For this reason, these small variations between the different sites must be understood as a consequence of the material resedimentation processes.

The lithic industry is defined by usage of local and nearby resources, the proportion of quartzite and quartz varying between the different sites (63%-26% and 73.93%-35.5%, respectively). Rock crystal appears to a lesser extent (3.2%-0.7%), related to quartz formations. Quartz is an abundant resource in the Louro basin, the source of good quality quartzite, predominant in the assemblages, is located on the terraces of the river Miño, 3 km to the south.

The assemblages are characterised by the dominance of knapping products, generally small and medium sized (30-60 mm), particularly the quartz items. Regarding the knapping strategies, the more expeditious types that performance longitudinal and bifacial reduction series (especially in quartz) predominate but with a significant presence of centripetal and discoidal cores and products, whereas Levallois products are barely represented (around 2%). The opportunistic resource of bipolar knapping on quartz is also documented, witnessed through various knapping products, as well as large blocks interpreted as anvils.

The presence of handaxes and cleavers (Fig. 2), although consistent, varies between the different sites. The majority of the handaxes are made on flake with amygdaloidal morphologies, evenly edges and silhouettes trimming, mainly using a hammerstone. There is a smaller representation of cleavers and picks. Regarding light duty tools, denticulate, scrapers and notched tools stand out.

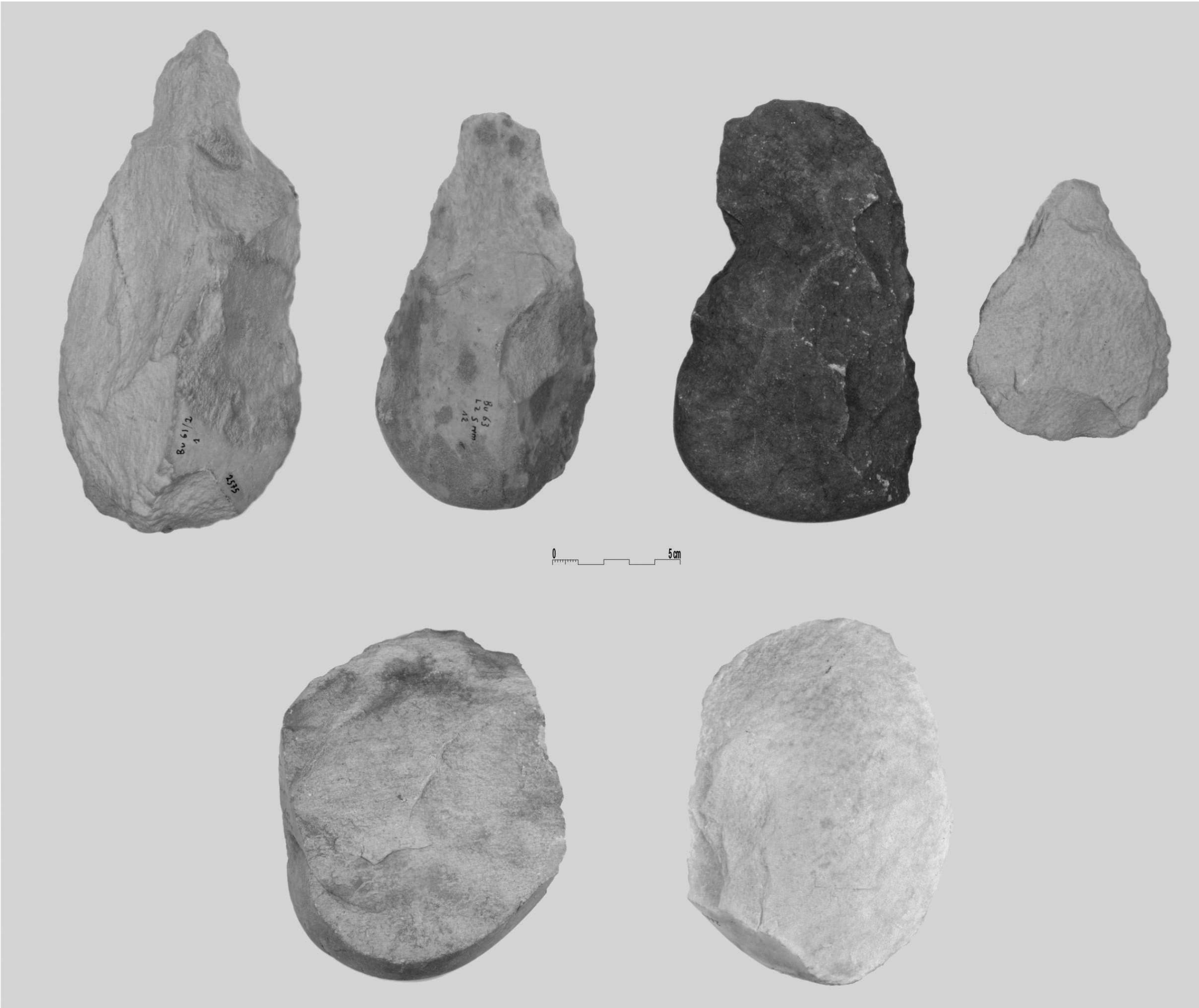

Figure 2. Handaxes and cleavers recovered from the excavations of Emiliano Aguirre (Fotograph: Museo Municipal de Vigo. Quiñones de León).

These assemblages show a clear difference as to the management of raw materials based on their knapping quality, quartzite being used mainly for making LCT, medium and large implements, and in more complex knapping methods. Quartz, however, becomes more important for small blanks and tools. Although for the quartz tools all the phases of the *chaîne opératorie* seem to be represented, this is fragmented for the quartzite tools, basically represented by flakes, cores in an advanced stage of reduction and LCT.

Conclusions

The technical characteristics of the site of As Gándaras de Budiño place it within the peninsular Acheulean assemblages from the second half of the Middle Pleistocene. In this respect, the absolute dating obtained show the different morphogenetic processes of the Louro basin but not the age of the industries. Its location in the Meridiana Depression gives it a strategic settlement within the mobility of the Atlantic Façade, that also explain the large number of findings and their wide distribution in the area.