

Landscape archaeology in the *Valle de Ricote* (Murcia, Spain)

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Spain; Murcia; landscape archaeology; islamic archaeology

Introduction

Within the general framework of the study of the hydraulic systems in Islamic Spain, the Franco-Belgian research on the *Valle de Ricote* works towards three objectives. On the one hand a technological study of the medieval irrigation patterns, on the other hand the analysis of the settlement linked to those hydraulic structures, finally – putting the previous points in their general historic context – approach of the socio-economic evolution in the Andalusian society just before and after the Christian conquest of the 13th century (Bazzana/De Meulemeester 1998a; 1998b; Amigues/De Meulemeester/Matthys 1999).

Over the last three years more fieldwork has enabled us to confirm our previous theories.

Presentation of the valley

The paraphrase *Valle de Ricote* covers the whole of the territories situated in the valley of the middle Río Segura; its original historic significance – bound to the 9th century Islamic texts – comprises the *hisn Riqût*, i.e. the area controlled by the ‘castle’ of Ricote, which locks the valley to its southern side and originally extended to the north-west to the defiles which separate the territories of Cieza and Calatrava. According to the period considered ‘Ricote’ covers the whole of this area, or probably from the 11th century onwards, only its southern part with the actual villages (towns) of Abarán, Blanca, Ojós and Villanueva, the latter only founded after the Christian conquest as a ‘new town’. In more recent history ‘Ricote’ covers only the actual village on the south-east fringe of the original confines. The

northern part formed the *hisn Siyâsa*, the castle and the territory of Cieza, which by the end of the 12th or the beginning of the 13th century had developed into a small regional town, but was deserted shortly after the conquest and refounded in the valley itself, by the river, by its Castilian conquerors.

Thanks to the archaeo-historical research of the last ten years, we know more about the character of the settlement patterns and the exploitation of the land in the *Valle de Ricote* during the Middle Ages and the beginning of modern times.

A small territory like the Ricote valley associates rural sites including hamlets and villages, castral sites and even a small but regionally important town; finally, this territory even shows the existence of a complete hydraulic system.

This micro-region permits an archaeo-historical research of those structures through two types of settlement patterns, the Muslim/Mudéjar type and the Christian one.

The ‘Don García’ sector

At the scale of the territory of Ricote/Cieza, we can distinguish three principal sectors: first the Ciezan *huerta*; secondly the sector that covers the territory of Abarán/Blanca; finally, the canals which flow through the villages of Ricote, Ojós and Ulea. This disposition is not arbitrary, but corresponds to the historical geography of the region and fits into the framework of medieval territories controlled, at first by the sole citadel of *Riqût*, afterwards by the castles of Cieza and Ricote; in Christian times the latter territory will be once again divided into the communal entities which nowadays still exist. Over a distance of more or less 30 km, the riv-



Fig. 1: The Segura valley between Cieza and Abarán; to the left the Segura – to the right the irrigation canal in the 'Don García' sector.

er meanders from the inland mountains up to the entrance to the low-lying vega (irrigated plain) of Murcia. In the central part where the valley is relatively wide, a case study was conducted on a 2 km long sector, stretching from the south-east of Cieza to the mountainous bottle-neck of Abarán (a), where the river flows through a relatively narrow 150 m wide gorge, controlled by the disappeared castle of Abarán (d). This so-called 'Don García' sector combines most of the characteristics of the medieval irrigation system along the Río Segura. This sector belongs to the former territory of *Riqūt* but also covers the important territorial limit between Cieza and Abarán, which in this zone corresponds to the *Barranco del Moro* (e) (*Barranco*= dry river bed). Two sections preserve a series of archaeological traces, relatively well visible in the landscape, and they allow to understand the organisation of the medieval irrigation system: the first covers the location of the *Presa del Menjú* (*Presa*= barrage) to the north-west of the *Barranco del Moro*; the second one is located to the southeast of this *barranco* on the so-called 'Don García' land. On its right bank, the first section has been heavily disturbed by the construction of an hydro-electric plant (f); upriver, integrated within a more recent plot system, traces of probably

medieval parcels can be distinguished (g). A detailed study has not been made yet, so that a number of older traces still might be detected. On the left bank, the trammel net of ancient plots is visible (h), in which the principal canal flows back to the river at the location of the *Presa del Menjú* (j). This spot reassembles the most interesting features and relics: a long water dam, which deviates the water to the canal, is placed in the river bend; of recent construction, this dike covers up an older embankment. The 'rigidity laws' which command hydraulic systems are relevant to this case and they fossilise the original starting point into the actual landscape, *i.e.* the dam which averts the water into the *acequia mayor* (*acequia*= irrigation canal), the principal canal (k). On its way to the *Barranco del Moro*, this canal marks out a triangular space (l), in which some rare older traces are drowned under the more recent parcels. The canal crosses the *barranco* through a siphon (m). On the other side of the ravine, we can observe its primitive course (n1; n2; n3). Several secondary canals part from the principal *acequia* to irrigate a number of small and elongated plots, located between the principal canal and the river (o). The northern and central parts preserve their medieval micro-strigations, but the more we move to the south-east, the more the destruction of the original medieval rural landscape becomes evident. Originally, the canal returned to the river at its south-east end, probably at the end of the Islamic period – or at the beginning of the Christian conquest and the Christian take-over of the Muslim irrigation system; then the canal passes a rock obstacle trough a tunnel, combined with an aqueduct, and finally flows into Abarán.

The real altitude of the water-deviating dam conditions the extension of the irrigated parcels. To irrigate more land, a new dam has to be constructed – upstream – or the water has to be raised by artificial means. This last solution was applied at spot (p), where an elevator machine – a *noria* – is activated by the water of the principal canal; the wheel raises the water over 5 m to an aqueduct (q), placed in a perpendicular position to the canal; it brings the water to the north-east, to a series of secondary canals which allow to double the circumference of the irrigated land (r).

When, in addition to this example, we consider the results of the recent fieldwork in other



Fig. 2: Primitive dam system in the river bed of the Río Segura.



Fig. 3: The noria called 'Don García'.

sectors of the middle Segura, we can deduce four characteristics in this irrigation pattern: Several sectors of the valley preserve two principal canals, both on the left and on the right bank, which each respond to two different logics in the rural area planning, bound to two chronologically different periods. In this perspective, the area planning, close to the river, seems to go the farthest back in time

while the traces on the lateral slopes suppose a lay-out covering several centuries and which must be posterior to the Islamic period. It is evident that the system is composed of a double network, one on each bank: the second, with the *Acequia del Horno*, is to be dated quite easily to the year 1600 – as far as its development is concerned; the first keeps an indefinite chronology, but nothing permits its



Figure 4. chronology to go back to Roman times, and its installation must rather be dated to the 'agricultural revolution' of the 10th and 11th centuries.

The small and elongated parcels which correspond to oldest rural organisation and aerial planning are outlined on a patch perpendicular to the trace of the principal canal; sometimes, due to the meanders of the Segura, they are disposed in a fan-wise manner.

The hydraulic system along the middle Río Segura

Medieval texts remain silent about the first centuries of Islam occupation in the valley of the Segura. They only start to inform us from the foundation of Murcia in 931 onwards. During this early occupation period the settlement of the *Valle de Ricote* was grouped around the castle of the same name. At this time (8th/9th and first half of the 10th centuries), no important hydraulic constructions were active, except for some collector basins, which gathered the water from some wells, but of which no traces are left.

Of course, the question arises if the model constructed on behalf of the 'Don García' sector can be transposed to the whole of the middle Segura valley. As far as the details of the plot pattern and the presence of a complex hydraulic system are concerned, several sectors differ amongst each other; but on the

other hand, when the general framework of the organisation and planning of the irrigated land and the network of water canals is concerned, the extrapolation offers the keys to an interpretation of the medieval landscape.

Leaving aside the details of the morphological description of each studied archaeological element, we discover a network of two principal canals which coincide with two chronologically different phases of organising the river banks and slopes. On the one hand we distinguish the canals close to the river, the low-lying *acequias*, and on the other the canals implanted on the slopes away from the river or the high-lying *acequias*. The two correspond to a distinct hydraulic logic and automatically to a different chronological period: the oldest vestiges being the ones upriver of the irrigated plots, which are disturbing earlier traces as is shown by the aerial photograph.

Historical information helps to clarify those chronological sequences. Texts make clear that the high-lying *acequias*, from period A were built in the 16th and the 17th century and that they did not reuse older structures; e.g. the construction, on the left bank, of the 'Presa del Horno' and its canal was started in 1600. The low-lying *acequias* make up a coherent whole all along the valley. Their trace points out to two contradictory facts: on the one hand, starting from the deviation dam they describe a large bend before flowing back to the river; traced like that they leave in the landscape a chain of festoons of irrigated lands. But sometimes, two festoons are joined together by important structures (tunnelling, aqueduct). The relative chronology based on the examination of the aerial photographs indicates two distinct periods :

the junction between the *acequias* being accompanied from stretch to stretch by a limited extension of the watered plots (with a different plot pattern of square or trapezoidal cells) can only be connected to an intermediate phase during which a pre-existing system was modified and probably increased. Two possibilities must be considered: phase B marks a situation connected to the end of the Islamic period, or it underlines the partial reuse of older structures.

The canals laid out as festoons seem to be the oldest elements (phase C); often they cover only a limited surface; they outline irrigated plots which take a characteristic form with micro-

strigations, disposed of in a fan-like way; those plots are small with a width of 7 m, lay-out and dimensions which coincide perfectly with lay-out and dimensions established in other Andalusian regions or in Maghrebinian landscapes in the Middle and High Atlas mountains of Morocco.

Phase C precedes the Christian conquest of the middle of the 13th century, but cannot be dated more accurately; in Murcia, as elsewhere, its premises have to be found in the middle of the 10th century. In this manner, the Islamic period lacked a 'great principal canal' able to distribute water over the whole of the valley; on the contrary, the organisation is characterised by a repetition of small units, separated by non-irrigated land. Each unit possesses its own water-deviating dam and canal. Archaeological prospection illustrates that each festoon of irrigated land is connected to a settlement, a hamlet, mentioned in the texts as a *qarya* which forms part of the settlement of

the *hisn*, the castral territory. Those hydraulic constructions are not the work of experienced engineers; on the contrary, they reveal an important rural *savoir-faire* based on empirical tradition and experience.

Conclusions

The existence of a double network of *acequias* on both banks of the Río Segura allows to distinguish three chronological phases. Phase A corresponds to the development of the irrigation systems connected to the historically well documented 'hydraulic boom' of the 16th century. Phase B is characterised by the reorganisation and reuse of pre-existing systems following the consolidation of Christian power in the valley. Finally, phase C marks out the Islamic structures of the original planning which can go back to the middle of the 10th century.

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