

ARCHAEOLOGY OF THE LANDSCAPE AND ARCHAEOLOGY OF FARMED AREAS IN THE MEDIEVAL HISPANIC SOCIETIES

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ABSTRACT

This article is a reflexion on the achievements of field system archaeology in medieval Spanish archaeology. It goes through the recent orientations in agrarian history and the limited involvement of archaeologists in this subject matter until recently. Only the so-called 'hydraulic archaeology', developed for the study of the irrigated areas of al-Andalus, which has some application in feudal hydraulic systems, and the research undertaken in the mountain fieldsystems of Asturias stand out as archaeological approaches before the end of the 20th century. More recently, several archaeologists have begun to develop new methodologies for the study of medieval farmlands, most notably among which are the application of archaeological excavation techniques, radiocarbon dating, and microgeomorphological analysis of the actual forming areas. In this way hydraulic archaeology is applied to the study of the impact of the feudal conquest upon the agrarian landscape of al-Andalus. Finally, this article reflects on the necessity of satisfactorily combining the resources provided by archaeology and textual records in research¹.

KEY WORDS

Landscape archaeology, agrarian archaeology, hydraulic archaeology, irrigation, al-Andalus, high Middle Ages, feudal society, field systems.

CAPITALIA VERBA

Archeologia locorum, Agrorum archeologia, Hydraulica archeologia, Irrigatio, al-Andalus, Primum Medium Aevum, Feudalis Societas, Agrorum ordinatio.

1. Consolidated research group: *Arqueologia Agrària de l'Edat Mitjana (ARAEM)* (AGAUR, 2009 SGR-304). This article is the result of research projects financed by the Ministry of Science and Innovation: *Aclimatación y difusión de plantas y técnicas de cultivo en al-Andalus* (HUM 2007-62899/HIST, HAR2010-21932-C02-01).

Farmlands have received little attention from historians and archaeologists of the medieval Hispanic societies, despite there being a long European tradition of studying this issue. There were three prominent lines of research in the 1980s and 1990s: agrarian history, “hydraulic archaeology” and the study of farmed land in Asturias. The most academically established of these, agrarian history, has traditionally dispensed with the resources that archaeology can offer, and, for the medieval period, it is to a great extent indebted to the studies by José Ángel García de Cortázar.² Together with Pascual Martínez Sopena, he carried out a comprehensive bibliographical review of the subject where the limited role of Spanish archaeology in this line of research became clear, while some brief paragraphs were devoted to the possibilities that it might offer.³ This review was included in a recent publication that aimed to bring together different European trajectories in agrarian history (Alfonso ed. 2007/2008) and that highlighted the uneven integration, depending on the country, that agrarian history has made of the resources that archaeology offers and the knowledge created through this.⁴ Even where there are strong archaeological traditions, there are still serious difficulties nowadays to go beyond juxtaposing the archaeological results and the research carried out with the written documentation.⁵

2. García de Cortázar, José Ángel. *La sociedad rural en la España medieval*. Madrid: Siglo XXI, 1988.

3. García de Cortázar, José Ángel; Martínez Sopena, Pascual. “Los estudios sobre la historia rural de la sociedad medieval hispanocristiana”, *La historia rural de las sociedades medievales europeas*, Isabel Alfonso, ed. Valencia: Publicacions de la Universitat de València, 2008: 97-143. Twenty years earlier, M. Barceló dedicated an extensive text to justifying the need to introduce the archaeological register into the study of medieval societies: Barceló, Miquel. “La arqueología extensiva y el estudio de la creación del espacio rural”, *Arqueología Medieval. En las afueras del medievalismo*, Miquel Barceló, ed. Barcelona: Crítica, 1988: 195-274.

4. Alfonso, Isabel, ed. *The rural history of Medieval European societies. Trends and perspectives*. Turnhout: Brepols, 2007. Traducción al castellano: Alfonso, Isabel, ed. *La historia rural de las sociedades medievales europeas*. Valencia: Publicacions de la Universitat de València, 2008.

5. The British case is perhaps where most attention has been paid to the farmed areas, although, in general, the historiographical traditions that have most integrated the archaeology, have done so mainly through studies into settlement that do not include research into farmed areas: Toubert, Pierre. “L’incastellamento aujourd’hui: quelques réflexions en marge de deux colloques”, *L’incastellamento. Actas de las reuniones de Girona (26-27 de noviembre de 1992) y de Roma (5-7 de mayo de 1994)*, Miquel Barceló, Pierre Toubert, coords. Rome: École Française de Rome/Escuela Española de Historia y Arqueología en Roma, 1998: xi-xviii; Dyer, Christopher; Schofield, Phillipp. “Estudios recientes sobre la historia agraria y rural medieval británica”, *La historia rural de las sociedades medievales europeas*, Isabel Alfonso, ed. Valencia: Publicacions de la Universitat de València, 2008: 31-63; Cursente, Benoît. “Tendencias recientes sobre la historia agraria y rural de la Francia medieval”, *La historia rural de las sociedades medievales europeas*, Isabel Alfonso, ed. Valencia: Publicacions de la Universitat de València, 2008: 65-96; Górecki, Piotr. “Los campesinos medievales y su mundo en la historiografía polaca”, *La historia rural de las sociedades medievales europeas*. Valencia: Publicacions de la Universitat de València, 2008: 247-284; Provero, Luigi. “Cuarenta años de historia rural del medioevo italiano”, *La historia rural de las sociedades medievales europeas*, Isabel Alfonso, ed. Valencia: Publicacions de la Universitat de València, 2008: 145-174.



1. Agrarian history and archaeology in Spain

In Spain, a quick review of the indices of the journals *Estudis d'Història Agrària* (University of Barcelona) and the *Historia Agraria* (Sociedad Española de Historia Agraria, University of Murcia) easily show that the interests of this discipline are mainly focussed on the modern and contemporary periods. The few articles referring to the medieval period usually lack an archaeological perspective.⁶ Agrarian history concentrates more on legal questions, referring to the status of the formers, the forms of land management and the income this generated for its managers, on the level of integration of agrarian production into the markets. In the best of cases, agrarian history shows interest in the crops that are mentioned in the documentation, and the techniques and degree of innovation as factors to explain phases of “growth” or “crisis”. However, it is not usual—if ever—to delve into the material structure, shape and area of the fields: their dimensions, the way they were built and evolved over time, the relation between field systems and farming techniques, the scale of production and storage procedures. Another recent example of this approach is the *Història Agrària dels Països Catalans*, directed by E. Giralt, especially the second volume dedicated to the Middle Ages coordinated by J. M. Salrach⁷. Although in this case, some of the authors of the volume, easily adapt into their reasoning knowledge obtained by extensive archaeology, and particularly “hydraulic archaeology”.⁸

These observations are not intended to take the mediet away from this line of research, far from it. I simply aim to show that the relationship between agrarian history and archaeology achieved by British research is the consequence of an explicit intention to carry out projects that include both archaeological and written records from the start.⁹ This is not the case of Spanish research that, until now, is still fragmented: archaeological research on settlement sites on the one hand, textual on the other hand, and, much scarcer, research dedicated to farmed areas, sometimes combining the written and archaeological evidence.

6. Volumes 31 (2003) and 33 (2004) of *Historia Agraria* contain first versions of the texts by the authors of the book edited by I. Alonso and cited above (Alonso, Isabel, ed. *La historia rural de las sociedades medievales europeas...*). Some years earlier, J. Escalona referred to the abundance of studies into the legal and social aspects of agrarian ownership” (*los aspectos legales y sociales de la propiedad agraria*) and the difficulty of integrating the archaeological approach fully into the study of the rural population: “the fieldwork does not seem to take off” (*el trabajo de campo no parece despegar*), Escalona, Julio. “Paisaje, asentamiento y Edad Media: reflexiones sobre dos estudios recientes”. *Historia Agraria*, 20 (2000): 241.

7. Salrach, Josep María, coord. *Història agrària dels Països Catalans. Edat Mitjana II*. Barcelona: Fundació Catalana per a la Recerca, 2004.

8. Glick, Thomas F. “Sistemas agrícolas islàmics de xarq al-Andalus”, *Història agrària dels Països Catalans. Edat Mitjana II*, Josep Maria Salrach, coord. Barcelona: Fundació Catalana per a la Recerca, 2004: 45-89; Furió, Antoni. “L'organització del territori: l'espai i el poblament”, *Història agrària dels Països Catalans. Edat Mitjana II*, Josep Maria Salrach, coord. Barcelona: Fundació Catalana per a la Recerca, 2004: 247-300.

9. Dyer, Christopher; Schofield, Phillip. “Estudios recientes sobre la historia agraria...”: 31-63; Escalona, Julio. “Paisaje, asentamiento y Edad Media...”: 227-244.



“Hydraulic archaeology”, the second of the lines I wish to refer to, was mainly developed for the study of the irrigated areas linked to rural Andalusian settlements,¹⁰ although also for some cases of feudal hydraulic systems.¹¹ The approaches that M. Barceló proposed were fundamental to orientating this research line. In the first place, he showed the need to include the technical resources of spatial archaeology into the research and, secondly, he argued something that now seems obvious: the concept of rural settlement should be understood as the indivisible set of the area of habitation and the working areas (fields, hunting, gathering, and pasture areas, territories of political domain, etc.). The definition of what a rural settlement

10. Some relevant titles for this line of research are: Barceló, Miquel. “El diseño de espacios irrigados en Al-Andalus: un enunciado de principios generales”, *El agua en las zonas áridas: arqueología e historia. I Coloquio de historia y medio físico. Almería, 14-15-16 de diciembre de 1989*. Almería: Instituto de Estudios Almerienses de la Diputación de Almería, 1989: I, XV-L; Barceló, Miquel. “De la congruencia y la homogeneidad de los espacios hidráulicos en Al-Andalus”, *El agua en la agricultura de Al-Andalus. El Legado Andalúsí*. Barcelona-Madrid: Lunwerg, 1995: 25-38; Barceló, Miquel; Kirchner, Helena. *Terra de Falanix. Felanitx quan no ho era. Assentaments andalusins al territori de Felanitx*. Palma: Ajuntament de Felanitx-Universitat de les Illes Balears, 1995; Kirchner, Helena. *La construcció de l'espai pagès a Mayûrqa: les valls de Bunyola, Orient, Coanegra i Alaró*. Palma: Universitat de les Illes Balears, 1997; Barceló, Miquel, coord. *El curs de les aigües. Treballs sobre el pagesos de Yabisa (290-633H/902-1235d.c.)*. Ibiza: Consell Insular d'Eivissa i Formentera, 1997; Barceló, Miquel; Carbonero, Maria Antònia; Martí, Ricardo; Rosselló Bordoy, Guillem. *Les aigües cercades. Els qanât(s) de l'illa de Mallorca*. Palma: Institut d'Estudis Balearics, 1986; Barceló, Miquel; Kirchner, Helena; Martí, Ricardo; Torres, J. M. *The design of irrigation systems in Al-Andalus. The cases of Guajar Faragüit (Los Guájares, Granada, Spain) and Castellitx, Aubenya and Biniatró (Balearic Islands)*. Bellaterra: Universitat Autònoma de Barcelona, 1998; Argemí, Mercè. “Segmentación de grupos bereberes y árabes a través de la distribución de asentamientos andalusíes en Yartân (Mayûrqa)”. *Arqueología del paisaje. Arqueología Espacial*, 19-20 (1998): 373-386; Barceló, Miquel; Retamero, Félix, eds. *Els barrancs tancats. L'ordre pagès al sud de Menorca en època andalusina. Maó (Minorca)*. Mahón: Institut d'Estudis Menorquins, 2005; Glick, Thomas F.; Kirchner, Helena. “Hydraulic systems and technologies of Islamic Spain: History and archaeology”, *Working with water in Medieval Europe. Technology and Resource-Use*, Paolo Squatriti, ed. Leiden-London-Cologne: Brill, 2000: 267-329; Kirchner, Helena “Archeologia degli spazi irrigati medievali e le loro forme di gestione sociale”, *L'acqua nei secoli altomedievali. Settimane di Studio della Fondazione Centro Italiani di Studio sull'alto Medioevo*, 55, Spoleto, 12-17 aprile 2007. Spoleto: Centro Italiano di Studi sull'Alto Medioevo, 2008: I, 471-503; Kirchner, Helena. “Redes de asentamientos andalusíes y espacios irrigados a partir de qanât(s) en la sierra de Tramuntana de Mallorca: una reconsideración de la construcción del espacio campesino en Mayûrqa”, *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 79-94; Retamero, Félix; Moll, Bernat. “Los espacios agrícolas de Madîna Manûrqa (Ciudadella de Menorca). Siglos X-XIII”, *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 95-106; Sitjes, Eugènia. “Espacios Agrarios y redes de asentamientos andalusíes en Manacor (Mallorca)”, *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 61-78.

11. Kirchner, Helena. “Espais agraris en el terme del monestir de Sant Cugat del Vallès (S.X-XIII)”. *Arqueologia Medieval. Revista Catalana d'Arqueologia Medieval*, 2 (2006): 22-35; Kirchner, Helena; Oliver, Jaume; Vela, Susana. *Aigua prohibida. Arqueologia hidràulica del feudalisme a la Cerdanya. El Canal Reial de Puigcerdà*. Bellaterra: Universitat Autònoma de Barcelona, 2002; Kirchner, Helena. “Hidráulica campesina anterior a la generalización del dominio feudal. Casos en Cataluña”, *Hidráulica agraria y sociedad feudal. Técnicas, prácticas y espacios*, Enric Guinot, Josep Torró, eds. Valencia: Publicacions de la Universitat de Valencia: forthcoming.



was and the recognition that social stratification could have a spatial translation required research strategies based on archaeological methodology¹².

At the end of the 20th century, a method had been established¹³ and some principles governing the construction and organization of irrigated areas had been identified.¹⁴ For certain regions of al-Andalus,¹⁵ the irrigated farming areas had been described physically, their original layout could be distinguished from the modifications that they had undergone down to the present, and the physical and social ways of water distribution could be traced. It was found that the hydraulic systems gave sense to the distribution of the peasants' places of residence and their sizes at a regional level. In short, this was the basis for understanding the relation between the forms of Andalusian peasant settlement, its clan character, and the characteristics of the irrigated farming areas and their social management.¹⁶

The technical procedures of "hydraulic archaeology" are based on a thorough and systematic comparison of documentary evidence from the medieval and modern periods with a detailed mapping, plot by plot, channel by channel, of the irrigated area. The specificity and originality of the procedures for identifying medieval fied systems, whether irrigated or not, don't consist of the application of specific techniques, but on the articulation of a series of information pieces produced expressly from textual, toponymic, archaeological and ethnographic origins and obtained from the landscape itself. The techniques used, are not in themselves at all original in the context of extensive archaeology or the analysis of written documents. What is original and essential is the thorough mapping of the agrarian areas as the basic instrument to which the other available information compared. In this process, the toponymic record ceases to be a mere list of names, at most represented on a map, subject to etymological analysis. Thus, for example, the overwhelming toponymic compendium documented for the Balearic Islands leaves little room for doubt about the process of migration that took place after 902 A.D. and over few decades, and is coherent with the creation of a new pattern of rural settlement associated to irrigated areas, a development which meant an unprecedented ecological impact.¹⁷ The written documents rarely describe the agrarian areas or report explicitly about when they were built and who built them. They have to undergo a detailed examination so we can produce relevant information: a reconstruction of the distribution of plots documented through references to boundaries; the existence or

12. Barceló, Miquel. "La arqueología extensiva...": 196.

13. Kirchner, Helena; Navarro, Carmen. "Objetivos, método y práctica de la arqueología hidráulica." *Archeologia Medievale*, 20 (1993): 121-150; Kirchner, Helena; Navarro, Carmen. "Objetivos, método y práctica de la arqueología hidráulica". *Arqueología y territorio Medieval*, 1 (1994): 159-182.

14. Barceló, Miquel. "El diseño de espacios irrigados en Al-Andalus...": I, XV-L; Barceló, Miquel. "De la congruencia y la homogeneidad de los espacios hidráulicos en Al-Andalus"...: 25-38.

15. Eastern Andalusia, Valencia Region and, especially, the Balearic Isles.

16. See the bibliography in note 5.

17. Barceló, Miquel. "Immigration berbère et établissements paysans a Ibiza (902-1235). À la recherche de la logique de la construction d'une nouvelle société", *Castrum 7. Zone côtières littorales dans le monde méditerranéen au Moyen âge: défense, peuplement, mise en valeur*, Jean Marie Martin, ed. Rome-Madrid: École française de Rome-Casa de Velázquez, 2001: 291-321.



absence of mentions of sets of plots or other agrarian structures from a certain date on; the setting of transmission sequences by sales, inheritances or other alienations of property; monitoring specific crops mentioned in certain plots, etc. The result of this analysis can then be compared with the current landscape.

The method, however, has its limits. The specific circumstances behind the conservation of a farmed area, whether still being worked, abandoned or fossilised, can require various technical adaptations to identify the original plot divisions, how it worked and the modifications that it has undergone since its creation. The absence of documentation can even mean that it is impossible to determine the original design of an irrigated area or simply date the successive phases of extension.¹⁸

Finally, the third line of research was the one applied, in a practically isolated case, to medieval plots associated with mountain villages in Asturias¹⁹. The author of this study developed an innovative procedure based on the combination of documentary evidence, an analysis of aerial photography and the morphology of the plots, toponymy and an ethnographic survey. The starting point is the actual traditional landscape, but bearing in mind that most of the constructive elements of an agrarian landscape can be very old in origin and have been reused and modified over the centuries, a fact that specialists in "landscape archaeology" have later insisted on as a fundamental factor to be taken into account²⁰. In some aspects, the method developed by M. Fernández Mier, has many points in common with "hydraulic archaeology", but applied to non-irrigated plots.

Spanish medieval archaeology in the feudal or early-medieval periods has favoured research on singular buildings (castles, churches, etc.) and cemeteries. More recently, the spectacular leap forward by Spanish medieval archaeology in the study of early-medieval villages has corrected the systematic tendency to ignore

18. This has led to considering farmland that is documented since the 15th century as foundational irrigated areas, chronologically imprecise, and that are probably the result of a process of extension and modification that cannot be described through the texts (Navarro Carmen. "De la kura de Tudmir a la encomienda de Socovos. Liétor en los siglos X-XV", *IV Congreso de Arqueología Medieval Española. Sociedades en transición. Actas. Alicante, 4-9 de octubre 1993*, Rafael Azuar, Javier Martí Oltra, coords. Alicante: Asociación Española de Arqueología Medieval-Diputación Provincial de Alicante, 1993: II, 525-534; Navarro, Carmen. "El ma'jil de Liétor (Albacete): un sistema de terrazas irrigadas de origen andalusí en funcionamiento", *I Congreso de Arqueología Peninsular. Porto, 12-18 de Outubro de 1993*, Vítor Oliveira Jorge, coord. Porto: Sociedade Portuguesa de Antropología e Etnologia, 1995: VI, 365-382; Navarro, Carmen. "El tamaño de los sistemas hidráulicos de origen andalusí: la documentación escrita y la arqueología hidráulica", *Agricultura y regadío en al-Andalus. II Coloquio de Historia y Medio Físico*. Almería: Instituto de Estudios Almerienses de la Diputación de Almería-Grupo de Investigación Toponimia, 1995: 177-189; Martín Civantos, José María. *Poblamiento y territorio medieval en el Zenete (Granada)*. Granada: Universidad de Granada, 2007). See the discussion about the problem of dating the possible phases of the construction of orchards in the southeast of al-Andalus dealt with by A. Puy in the case of the Ricote valley (Murcia): Puy, Arnald. "Arqueología hidráulica en Ricote (Murcia, España)", *Las Jornadas de Investigadores predoctorales en Ciencias de la Antigüedad y la Edad Media*. Bellaterra: Universitat Autònoma de Barcelona: forthcoming.

19. Fernández Mier, Margarita. *Génesis del territorio en la Edad Media. Arqueología del paisaje y evolución histórica en dos concejos de la montaña asturiana: Miranda y Somiéu*. Oviedo: Universidad de Oviedo, 1999.

20. Orejas, Almudena. "Arqueología de los paisajes agrarios e historia rural". *Arqueología espacial*, 26 (2006): 10.



peasant settlement.²¹ Although still very recent, the interest of this archaeology in farming areas is yielding highly relevant results, namely, in the development of procedures for identifying and excavating the fields, the detection of palaeosoils and their dating, and the description of the techniques used for building the plots.²²

Thus, with the exception of the studies undertaken on “hydraulic archaeology”, high mountain farmland and recent field excavations, most researchers, both those who focus on the so-called period of transition between the ancient and medieval worlds (6th-10th centuries), and those who have dedicated themselves to working on later sites, and, indistinctively, in the field of Hispanic feudal societies and al-Andalus, still give priority to residence areas (and not necessarily the peasantsones) as the focus of their research and have even tended to ignore agrarian areas. In general, not only does a disconnection persist between agrarian history and the archaeology of field systems —or agrarian archaeology in general— but also between medieval archaeology, generally centred on archaeological sites, and agrarian archaeology, to the point that those who use the expression “landscape archaeology” rarely contemplate agrarian areas and only concern themselves with villages, dwellings, buildings, cemeteries, etc., and the localization and distribution of all these in the geography of a region. Residence areas must be studied in relation to productive areas and vice versa. The medieval Italian archaeological tradition is a good example of research into landscapes without fields, without agrarian spaces.²³

21. Quirós, Juan Antonio. “Las aldeas de los historiadores y de los arqueólogos en la alta Edad Media en el norte peninsular”. *Territorio, sociedad y poder*, 2 (2007): 65-86; Quirós, Juan Antonio, ed. *The archaeology of early medieval villages in Europe*. Bilbao: Universidad del País Vasco, 2010; Quirós, Juan Antonio; Vigil-Escalera, Alfonso. “Networks of peasant villages between Toledo and Uelegia Alabense, Northwestern Spain (Vth-Xth centuries)”. *Archeologia Medievale*, 33 (2007): 79-128.

22. Ballesteros, Paula; Criado, Felipe; Andrade, José Miguel. “Formas y fechas de un paisaje medieval en Cidade da Cultura”. *Arqueología Espacial*, 26 (2006): 193-225; Ballesteros, Paula; Eiroa, Jorge Alejandro; Fernández Mier, Margarita; Kirchner, Helena; Ortega, Julián; Quirós, Juan Antonio; Retamero, Félix; Sitjes, Eugènia; Torrò, Josep; Vigil-Escalera, Alfonso. “Por una arqueología agraria de las sociedades medievales hispánicas. Propuesta de un protocolo de investigación”, *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 185-202; Quirós, Juan Antonio. “Arqueología de los espacios agrarios medievales en el País Vasco”. *Hispania* 69, 233 (2009): 619-652; Quirós, Juan Antonio. “De la arqueología agraria a la arqueología de las aldeas medievales”, *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 11-24; Vigil-Escalera, Antonio. “Formas de parcelario en las aldeas altomedievales del Sur de Madrid. Una aproximación arqueológica preliminar”, *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 1-10. It is also worth noting the identification and study of farmed terraces from the Roman period carried out by M. Ruiz del Árbol (Ruiz del Árbol, María. “Los paisajes agrario del Nordeste de Lusitania: terrazas y explotación agraria romanas en la Sierra de Francia”. *Arqueología Espacial*, 26 [2006]: 115-142), although this is outwith the chronological scope of this article. The procedures are similar to those developed by the other authors mentioned and constitute an equally exceptional initiative in the panorama of Roman archaeology in Spain.

23. Medieval Italian archaeology contemplates a landscape archaeology that excludes the agrarian spaces (Cambi, Franco; Terrenato, Nicola. *Introduzione all'archeologia dei paesaggi*. Rome: La Nuova Italia Scientifica, 1994) and focuses on the study of the characteristics and evolutionary processes of the forms of population distribution, taking archaeological prospecting and maps of distribution of settlements as



Bio-archaeology has made little headway in the study of the medieval Hispanic societies. Only very recently have the first analyses of samples from the medieval period been published.²⁴ The use of palynology for principally exploring ancient and high medieval chronologies has also started to be applied²⁵.

2. Agrarian archaeology in medieval archaeology

The book edited by Jean Guilaine (*Pour une archéologie agraire. À la croisée des sciences de l'homme et de la nature*, 1991) tried to show the need to give relevant weight to agrarian landscapes, crops and farming procedures in the study of what is habitually called rural settlements.²⁶ It is still a good handbook about the enormous diversity of techniques that can be applied. It contains a significant proportion of works on the medieval period or works that consider this period in the chapters focussed on each of the various techniques. Outstanding among these are the efforts made in studies on field system morphology and the identification and dating of

its methodological basis, to which, at an early date, they began to apply the computerised resources of the GIS. The important development of the archaeology of the *incastellamena* and the previous forms of rural occupation from the 5th century to the 10th have yet to lead to interest in research into the agrarian spaces that sustained the implantation of the different forms of peasant settlement and the development of the seigniorial class. The volumes dedicated to landscape archaeology, published by M. Bernardi (Bernardi, Manuela, ed. *Archeologia del paesaggio*. Florence: All'Insegna del Giglio, 1992) contain no articles about farmlands.

24. Zapata, Lydia. "Arqueología de las plantas: cultivos y bosques en época medieval", *La Historia desde fuera. VIII Jornadas de Estudios Históricos (Vitoria-Gasteiz, 7 y 8 de noviembre de 2006)*, Juan José Larrea Conde, Ernesto Pastor Díaz de Garayo, eds. Bilbao: Universidad del País Vasco-Euskal Herriko Unibertsitatea, 2008: 121-138; Alonso, Natàlia. "Agriculture and food from the Roman to the Islamic period in the Northeast of the Iberian Peninsula: archaeobotanical studies in the city of Lleida (Catalonia, Spain)". *Vegetation History and Archeobotany*, 14 (2005): 341-361; Alòs, Carme; Camats, Anna; Monjo, Marta; Solanes, Eva; Alonso, Natàlia; Martínez, Jorge. "El Pla d'Almatà (Balaguer, la Noguera): primeres aportacions interdisciplinàries a l'estudi de les sitges i els pous negres de la zona 5". *Revista d'Arqueologia de Ponent*, 16-17 (2006-2007): 145-168.

25. Palet, Josep Maria. *Estudi territorial del Pla de Barcelona. Estructuració i evolució del territori entre l'època iberoromana i l'altmedieval. Segles II-Ia.C.-X-XI d.C.* Barcelona: Centre d'Arqueologia de la Ciutat, 1997; Palet, Josep Maria. "Dinàmica territorial de l'antiguitat a l'edat mitjana a Catalunya: arqueomorfologia i estudi de casos", *Territori i societat a l'Edat Mitjana: història, arqueologia, documentació*, Jordi Bolòs, Joan Josep Busqueta, eds. Lleida: Universitat de Lleida, 2007: 75-110; Riera, Santiago; Palet, Josep Maria. "Una aproximación multidisciplinar a la historia del paisaje mediterráneo: La evolución de los sistemas de terrazas con muros de piedra seca en la sierra de Marina (Badalona, Llano de Barcelona)", *El paisaje en perspectiva histórica. Formación y transformación del paisaje en el mundo mediterráneo*, Ramón Garrabou, José Manuel Naredo, eds. Saragossa: Prensas Universitarias de Zaragoza-Institución 'Fernando el Católico', 2008: 47-90.

26. Guilaine, Jean, coord. *Pour une archéologie agraire. À la croisée des sciences de l'homme et de la nature*. Paris: Armand Colin, 1991.



fossilised micro-reliefs, caused by various farming procedures in north-western Europe²⁷.

The morphological study of field systems has its roots in three main research traditions: the book by M. Bloch, *Les caractères originaux de l'histoire rurale française* (1964)²⁸; the later study of Roman cadastres that showed, through its regressive analysis procedures, the medieval processes of tillage and plot division that altered the lines of the Roman cadastres;²⁹ and the Anglo-Saxon and north European tradition that identified fossilised micro-reliefs and field distribution.³⁰ All of these are mainly based on the study of plot morphology on the one hand, and on the identification of fossilised micro-reliefs on the other, and have been applied to the study of non-irrigated farmlands, and mainly dedicated to cereal growing. In recent years, and as a consequence of large-scale public works for infrastructures with heavy environmental impact, areas farmed in the medieval period and earlier have been excavated through methods of removing successive layers of terrain over large areas. This type of work has allowed marks of ancient fields under the actual farmed surface to be identified: trenches and drainage channels, plantation pits, plot limits, plough marks, etc.³¹

27. Zadora-Rio, Elisabeth. "Les terroirs médiévaux dans le Nord et le Nord-Ouest de l'Europe", *Pour une archéologie agraire. À la croisée des sciences de l'homme et de la nature*, Jean Guilaine, dir. Paris: Armand Colin, 1991: 165-192.

28. Bloch, Marc. *Les caractères originaux de l'histoire rurale française*. Paris: Armand Colin, 1964.

29. Chouquer, Gérard. "La place de l'analyse des systèmes spatiaux dans l'étude des paysages du passé", *L'analyse des systèmes spatiaux. Les formes du paysage 3*, Gérard Chouquer, ed. Paris: Errance, 1997: 14-24; Chouquer, Gérard. *Études des paysages. Essais sur leurs formes et leur histoire*. Paris: Errance, 2000; Chouquer, Gérard, ed. *Études sur les parcellaires. Les formes des paysages 1*. Paris: Errance, 1996; Chouquer, Gérard, ed. *Archéologie des parcellaires. Les formes des paysages 2*. Paris: Errance, 1996; Chouquer, Gérard, ed. *L'Analyse des systèmes spatiaux. Les formes des paysages 3*. Paris: Errance, 1997; Leveau, Philippe. "Le paysage aux époques historiques. Un document archéologique". *Annales. Histoire, sciences sociales*, 3 (2000): 555-582.

30. Verhulst, Adriaan. *Le paysage rural: les structures parcellaires de l'Europe du Nord-Ouest*. Turnhout: Brepols, 1995; Zadora-Rio, Elisabeth. "Les terroirs médiévaux...": 165-192; Myrdal, Janken. "The agricultural transformation of Sweden, 1000-1300", *Medieval farming and technology. The impact of agricultural change in Northwest Europe*, Grenville Astill, John Langdon, eds. Leiden-New York-Cologne: Brill, 1997: 147-173; Widgren, Mats. "Fields and field systems in Scandinavia during the middle ages", *Medieval farming and technology. The impact of agricultural change in Northwest Europe*, Grenville Astill, John Langdon, eds. Leiden-New York-Cologne: Brill, 1997: 173-192; Astill, Grenville. "An archeological approach to the development of agricultural technologies in medieval England", *Medieval farming and technology. The impact of agricultural change in Northwest Europe*, Grenville Astill, John Langdon, eds. Leiden-New York-Cologne: Brill, 1997: 193-224; Toubert, Pierre. "Histoire de l'occupation du sol et archéologie des terroirs médiévaux: la référence allemande", *Castrum 5. Archéologie des espaces agriars méditerranéens au Moyen Âge. Actes du colloque de Murcie*, André Bazanna, ed. Rome-Madrid: École française de Rome/Casa de Velázquez, 1999: 23-37.

31. Poupet, Pierre. "Sols, paléosols et structures agraires", *Les campagnes de la France méditerranéenne dans l'Antiquité et le Haut Moyen Âge: études microrégionales*, François Favory, Jean Luc Fiches, dirs. Paris: Éd. de la Maison des Sciences de l'Homme, 1994: 311-324; Boissinot, Philippe. "Archéologie des façons culturales", *La dynamique des paysages protohistoriques, antiques, médiévaux et modernes ou les paysages au carrefour de l'interdisciplinarité et de la diachronie. XVIIe Rencontres Internationales d'Archéologie et d'Histoire d'Antibes*, Joëlle Burnouf, Jean-Paul Bravard, Gérard Chouquer, eds. Sophia Antipolis: APDCA, 1997: 85-112; Berger, Jean François; Brochier Jacques L.; Jung, Cécile; Odier, Thierry. "Données paléogéographiques et données archéologiques dans le cadre de l'opération de sauvetage archéologique



The excavation of farmed areas is one of the recent lines of research that offers increasingly important results, especially in relation to the study of the construction techniques for certain plot layouts or types of fields and for dating the moment of their creation, the different phases of use and the modifications they have undergone.³² However, only the study of the whale field system where the excavated fields is linked gives sense to the results of this archaeological procedure. If not, there is a risk of not going beyond the simple description of constructive procedures, edaphological evolution and chronologies.

Bio-archaeology and the diversity of techniques that make it up constitute a very significant part of the book edited by J. Guilaine (1991)³³. The so-called *Populus Project*, a European research network funded by the *EU Human Capital and Mobility Programme*, whose aim was to bring together and coordinate lines of research into the archaeology of the Mediterranean landscape, led to a series of publications edited by G. Barker and D. Mattingly. One of these, dedicated to the environmental archaeological reconstruction of the Mediterranean landscape, gives a very complete idea of the level that this type of research had reached at the end of the 20th century in Mediterranean areas³⁴. However, the presence of registers from the medieval period in this collection is very scant and the interpretation of the existing data from this period has yet to be introduced adequately in either medieval archaeology or medieval agrarian history. In France, anthracology and carpology applied to the medieval period have undergone significant development thanks to the research by A. Durand and M-P. Ruas.³⁵

du TGV-Méditerranée”, *La dynamique des paysages protohistoriques, antiques, médiévaux et modernes ou les paysages au carrefour de l’interdisciplinarité et de la diachronie. XVIIe Rencontres Internationales d’Archéologie et d’Histoire d’Antibes*, Joëlle Burnouf, Jean-Paul Bravard, Gérard Chouquer, eds. Sophia Antipolis: APDCA, 1997: 155-184.

32. Boissinot, Philippe; Brochier, Jacques-Élie. “Pour une archéologie du champ”, *L’analyse des systèmes spatiaux. Les formes du paysage 3*, Gérard Chouquer, dir. Paris: Errance, 1997: 35-56; Harfouche, Romana. “Soil care and water management on ancient Mediterranean slopes. An archaeopedological approach”. *Arqueología Espacial*, 26 (2006): 311-340; Ballesteros, Paula; Criado, Felipe; Andrade, José Miguel. “Formas y fechas de un paisaje medieval en Cidade da Cultura”...: 193-225; Ballesteros, Paula; Eiroa, Jorge Alejandro; Fernández Mier, Margarita; Kirchner, Helena; Ortega, Julián; Quirós, Juan Antonio; Retamero, Félix; Sitjes, Eugènia; Torró, Josep; Vigil-Escalera, Alfonso. “Por una arqueología agraria de las sociedades medievales hispánicas...”: 185-202.

33. Guilaine, Jean, coord. *Pour une archéologie agraire...*

34. Leveau, Philippe; Trément, Frederic; Walsh, K.; Barker, G, eds. *Environmental reconstruction in Mediterranean landscape archaeology. The archaeology of Mediterranean landscapes 2*. Oxford: Oxbow Books, 1999.

35. Durand, Aline. *Les paysages médiévaux du Languedoc*. Toulouse: Presses Universitaires du Mirail, 1998; Durand, Aline. “Les milieux naturels autour de l’An Mil. Approches paléoenvironnementales méditerranéennes”, *Hommes et Sociétés dans l’Europe de l’An Mil*, Pierre Bonnassie, Pierre Toubert, eds. Toulouse: Presses Universitaires du Mirail, 2004: 73-99; Durand, Aline; Leveau, Philippe. “Farming in Mediterranean France and rural settlement in the late Roman and Early Medieval periods: the contribution from archaeology and environmental sciences in the last twenty years (1980-2000)”, *The making of Feudal agricultures?*, Miquel Barceló, François Sigaut, eds. Leiden-Boston: Brill, 2004: 177-254; Ruas, Marie Pierre. “Semences archéologiques, miroir des productions agraires en France méridionale du VIe au XVIe siècle”, *Castrum 5. Archéologie des espaces agraires méditerranéens au Moyen Âge. Actes du colloque de Murcie*, André Bazzanna, ed. Rome-Madrid: École française de Rome-Casa de Velázquez, 1999:



3. Proposal of a research protocol for farmed areas

Since the end of the 20th century, and especially in these early years of the 21st century, some Spanish research groups have begun to turn towards the study of farmed areas in the medieval period. With the aim of making this research more visible academically, in November 2008, I organised a symposium in the Universitat Autònoma of Barcelona, under the title of *Por una arqueología agraria. Perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas* (For an agrarian archaeology. Perspectives for research on farmed areas in the Hispanic medieval societies).³⁶ It was published in 2010 by the British Archaeological Reports (BAR) (Oxford)³⁷. Without the choice of participants being exhaustive, I humbly believe that this was a representative group of the researchers currently interested in the question. Moreover, the debates led to the drawing-up of a proposal for a research protocol on farmlands, which was signed by almost all the participants³⁸. The aim was to establish basic guidelines for archaeological work, based on the experience of all participants in the symposium, that could be useful for us in our current research but also for those who propose to tackle research into farmed areas in the future. It was also agreed that we had to establish the archaeology of the peasantry conceptually without segregating the analysis of the domestic areas from the productive ones.

The guidelines of the mentioned protocol³⁹ are aimed at mobilizing various procedures to establish a method that combines the different strategies used, until now, by some archaeologists:

- The extensive excavation of settlements to allow the identification of agricultural plots and structures located beside the household area or those situated in the spatial interstices inside groups of dwellings.
- The mapping of plots or hydraulic systems that are not necessarily adjacent to domestic areas, to determine their original design and the modifications undergone down to the present. It's necessary to combine information coming from written documents, cartography, aerial photography, archaeological survey, place names ethnographic origin, and a detailed examination through field survey, of plot boundaries and the infrastructures linked to them.

301-316; Ruas, Marie Pierre. "Aspects of early medieval farming from sites in Mediterranean France". *Vegetation History and Archaeobotany*, 14/4 (2005): 400-415.

36. The title is an intentional copy of the title of the book published by Jean Guilaine in 1991: *Pour une archéologie agraire. À la croisée des sciences de l'homme et de la nature...*

37. Kirchner, Helena, ed. *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*. Oxford: Archeopress, 2010.

38. Ballesteros, Paula; Eiroa, Jorge Alejandro; Fernández Mier, Margarita; Kirchner, Helena; Ortega, Julián; Quirós, Juan Antonio; Retamero, Félix; Sitjes, Eugènia; Torró, Josep; Vigil-Escalera, Alfonso. "Por una arqueología agraria de las sociedades medievales hispánicas...": 185-202.

39. Ballesteros, Paula; Eiroa, Jorge Alejandro; Fernández Mier, Margarita; Kirchner, Helena; Ortega, Julián; Quirós, Juan Antonio; Retamero, Félix; Sitjes, Eugènia; Torró, Josep; Vigil-Escalera, Alfonso. "Por una arqueología agraria de las sociedades medievales hispánicas...": 185-202.



- An analysis of the written documentation is essential for the study of both agrarian spaces in feudal (or early medieval) and Andalusian societies. The latter, furthermore, underwent feudal colonization with precise chronological phases, from the 12th century onwards. The comparison between written and survey records produces results of great interpretative power.
- The excavation of plots through lineal trenches and sounding, using stratigraphic analysis, edaphology techniques and various analyses (dating of different soil horizon formation; chemical composition of the soils, etc.).

4. The case of the archaeology of early medieval villages

The “archaeology of villages” has led to the identification of empty spaces, terraces, scattered pottery and faunal material, and structures, such as the trenches and the edges of tracks that allow plots to be marked out and palaeosoils to be isolated inside or close to household areas⁴⁰. On the other hand, the procedure of excavating traditional plots through longitudinal trenches and sounding, combined with systematic C14 dating, have allowed terraced field systems in Galicia to be dated and their evolution and building processes to be described⁴¹.

These initiatives fall principally into the debate between archaeologists and historians about the foundations of the *incastellamento* and the *encellulement*, the process of formation of castral networks and concentrations of population closely linked to the feudalism development especially in the areas of the western Mediterranean from the 10th-11th centuries.⁴² The other side of the coin in this debate is the chronology of this process and its roots in the early medieval centuries, especially since the 8th century, the time from which forms of concentrated rural settlement are detected archaeologically. Many archaeologists argue that these settlements should be designated by the term “*aldea*” —“village” in French and English— whereas the historians of the *incastellamento* and the *encellulement* considered concentrated settlements a new feature of the *incastellamento* or the *encellulement* and contrasting with “scattered settlements”. The debate, initiated

40. Quirós, Juan Antonio. “Arqueología de los espacios agrarios medievales...”: 619-652; Quirós, Juan Antonio. “De la arqueología agraria a la arqueología...”: 11-24. 2010; Vigil-Escalera, Antonio. “Formas de parcelario en las aldeas altomedievales...”: 1-10.

41. Ballesteros, Paula; Criado, Felipe; Andrade, José Miguel. “Formas y fechas de un paisaje...”: 193-225; Ballesteros, Paula; Eiroa, Jorge Alejandro; Fernández Mier, Margarita; Kirchner, Helena; Ortega, Julián; Quirós, Juan Antonio; Retamero, Félix; Sitjes, Eugènia; Torró, Josep; Vigil-Escalera, Alfonso. “Por una arqueología agraria de las sociedades medievales hispánicas...”: 185-202.

42. The terms were coined by Pierre Aubert (Toubert, Pierre. *Les structures du Latium médiévale. Le Latium méridional et la Sabine du IXe à la fin du XIIe siècle*. Rome: École Française de Rome, 1973) and Robert Fossier (Fossier, Robert. *Paysans d'Occident, XIe-XIVe siècles*. Paris: Presses Universitaires de France, 1984) respectively.



in the 1980s in France and especially Italy,⁴³ and much more recently in Spain,⁴⁴ focuses on the intensive research carried out on archaeological sites.

In the abundant bibliography available, only sporadic and marginal mention is made of the necessity to incorporate agrarian areas in general, and farmland in particular, into the discussion.⁴⁵ This is despite the written documentation, profusely analyzed by historians, being dedicated explicitly and overwhelmingly to the organization of the management of these spaces. Not even the long tradition of studies into medieval mills has managed to include interest in the hydraulic systems that fed them, and their close association with irrigated plots⁴⁶. When the remains of medieval mills have occasionally been excavated, no need was expressed to understand to what type of hydraulic system they belonged.⁴⁷ Finally, the studies of land distribution through techniques of the morphological analysis of aerial photography and cartography, and excavations of specific plots or wider cultivated areas has almost always been undertaken outside the archaeology of household spaces.

In my opinion, the definition of the concepts (concentration of population, disperse settlement, village, etc.) faces obstacles difficult to overcome: the minimum and maximum size of these population entities, their stability in time, the social organization of their inhabitants, the presence or lack of “elites” from the 8th century on words, how these elites should be described, what their collect rent was, the determination of which products are the subject of rent demand, what the traces of possible social differentiations are or, in other words, what is the archaeological record left by these “elites” that nobody dares to describe as feudal, but who are accredited with an imprecise control that presaged the later consolidation of these elites as a feudal seigniorial class, etc. The abundant recent Anglo-Saxon, French and Italian bibliography is pervaded with all these

43. Some significant publications are: Chapelot Jean; Fossier Robert. *Le village et la maison au Moyen Âge*. Paris: Hachette, 1980; Francovich, Riccardo; Hodges, Richard. *Villa to village. The transformation of the Roman Countryside in Italy, c. 400-1000*. London: Duckworth, 2003; Hamerow, Helena. *Early Medieval Settlements. The archaeology of rural communities in North-West Europe 400-900*. Oxford: Oxford University Press, 2002; E. Peytremann (Peytremann, Eedith. *Archéologie de l'habitat rural dans le nord de la France du IV^e au XII^e siècle*. Saint-Germain-en-Laye: Association Française d'Archéologie Mérovingienne, 2003); Valenti, Marco. *L'insediamento altomedievale nelle campagne toscane. Paesaggi, popolamento e villaggi tra VI e X secolo*. Firenze: All'Insegna del Giglio, 2004; *The archaeology of early medieval villages in Europe*, Juan Antonio Quirós, ed. Bilbao: Universidad del País Vasco, 2009 .

44. Quirós, Juan Antonio. “Las aldeas de los historiadores y de los arqueólogos...”: 65-86.

45. Toubert, Pierre. “L’incastellamento aujourd’hui...”: XI-XVIII; Zadora-Río, Elisabeth. “Le village des historiens et le village des archéologues”, *Campagnes médiévales. L’homme et son espace. Études offertes à Robert Fossier*, Elisabeth Mornet, ed. Paris: Publications de la Sorbonne, 1995: 153; Peytremann, Eedith. *Archéologie de l’habitat rural...: 362*; Alfonso, Isabel. “Las historiografías nacionales sobre el mundo rural medieval: una aproximación comparativa”, *La historia rural de las sociedades medievales europeas*, Isabel Alfonso, ed. Valencia: Publicacions de la Universitat de València, 2008: 11-30.

46. Kirchner, Helena. “Hidráulica campesina...”: forthcoming; Kirchner, Helena. “Sobre la arqueología de las aldeas altomedievales”. *Studia Historica. Historica Medieval*, 28 (2010): 243-253.

47. Barceló, Miquel. “The missing water-mill: a question of technological diffusion in the High Middle Ages”, *The making of Feudal agricultures?*, Miquel Barceló, François Sigaut, eds. Leiden: Brill, 2004: 255-314.



questions, but without ever considering the possibility that the size of the farmed area, the volume of agrarian products harvested, the existence, or lack of, of a stable accumulation of surpluses, the specific characteristics of the crops grown and their proportions, are essential variables of analysis to enable not only the concepts (village, stable, disperse, concentration, *incastellamento*, etc.) to be specified and described precisely, but also to determine the existence, or lack of, of a physical and social space for the development of these elites with a capacity for controlling peasant communities through the rent collection⁴⁸. In most studies, little attention is paid to this question and is limited to the remains of storage structures (granaries, silos) found on the sites excavated and the identification, where possible, of their contents, with the recent exceptions mentioned above.

Although house hold areas constitute a fundamental register for research into these questions, it is worth indicating that archaeologists hardly ever ask about the agrarian areas and their size, the fields and their morphology, and the procedures of growing and processing crops. It is in these fields where the products, whose remains we find in the household and storage structures, were grown. These are simply the areas on which the survival of the peasants was based, and where we should look for the gap that allowed rent collection (or not). Both dimensions, the survival of the peasants and the capture of rent, require a spatial reference of explicit magnitude to be assessed adequately. Other fundamental aspects to be considered are those concerning livestock, and how the herds were managed. These are not parallel activities but rather closely interrelated in both choices of peasant strategies and the use of space.

The finding of plots inside, or on the immediate edges, of household areas, their excavation, the development of archaeological techniques for excavating these fields, through trenches and by removing layers of soil, constitute a line of research with great potential, but one which is still an *addenda* to the main focus of research, namely archeological sites. Moreover, agrarian areas that are not necessarily inside the residential layout, or very close to it, continue to be excluded from the aims of research. Irrigated areas, for example, were where it was possible to transport water by gravity from a source to the fields. This source may even have been far from the residence area.

The study of wood and seeds, which has recently been introduced into Spanish medieval archaeology, is habitually done from samples obtained in site excavations, while the palinologists look principally to sedimentary deposits with very specific characteristics. However, it is necessary to develop research strategies that mobilise all these resources together, as each of them separately has limitations that are difficult to overcome. It is also necessary to establish procedures to obtain samples from the sediments of farmed plots. In this case, it is essential to combine archaeology with micro-geomorphology.⁴⁹

48. Kirchner, Helena. "Sobre la arqueología de las aldeas altomedievales"...

49. The project *Aclimatación y difusión de plantas y técnicas de cultivo en al-Andalus* is partly directed in this sense (HUM 2007-62899/HIST, HAR2010-21932-C02-01).



5. The case of the early medieval and feudal hydraulic systems in Catalonia

In Catalonia, “hydraulic archaeology” has begun to be applied to the study of early medieval and feudal irrigated areas.⁵⁰ This new application of the method has allowed early forms of peasant irrigation systems (9th and 10th centuries) to be identified, which were taken over by the lay and, especially, ecclesiastical feudal patrimonies during the 10th and 11th centuries. A chronology of the modifications and extensions that were produced in these irrigated areas has also been proposed, especially from the 12th century; and the limited capacity of the seigniorial class to promote the construction of irrigated areas prior to this date has been demonstrated.⁵¹ These areas are very well documented in the legal texts that deal with the process of absorption. The texts allow us to identify the properties that were the subject of feudal interest, and that move into estates the dispossessed social sector (peasant communities organised around consolidated agrarian infrastructures), and the chronology of the process. Locating in the landscape the agrarian structures that appear in the written documents gives the process a precise, material sense: and thus it is possible to determine the precise dimensions of the properties transferred: the size of the plots, the number of mills, the spatial distribution of these in relation to peasant and feudal residences. In the areas studied in Catalonia, it has been shown that the cultivated areas were mainly irrigated and that there were no feudal initiatives to build new irrigation systems before the 12th century, and even later.⁵² On the other hand, the establishment of procedures for requiring regular and periodic payments, normally in kind, went hand in hand with this process of dispossession. The peasants continued working the same lands, but now faced new demands for the rent payment. Rent generated the need for documentation and at the same time, became an instrument for seizing their lands.

In Catalonia, studies have also been carried out applying the techniques of analysing the morphology of plots, which can provide a useful base for research.⁵³ From another perspective, that of Roman rural settlement, research has been carried out with the aim of identifying the traces of the Roman cadastral organisation and plots associated with this, which has in turn led to observing the changes that occurred in the *Pla* of Barcelona (Barcelona’s plain) during the high Middle Ages. The method, the morphological analysis of plots, has also been combined with the development of pollen diagrams.⁵⁴

50. Kirchner, Helena; Oliver, Jaume; Vela Susana. *Aigua prohibida...*; Kirchner, Helena. “Espais agraris...”: 22-35; Kirchner, Helena. “Hidráulica campesina...”: forthcoming.

51. Kirchner, Helena. “Hidráulica campesina...”: forthcoming.

52. Kirchner, Helena. “Hidráulica campesina...”: forthcoming.

53. Bolòs, Jordi. *Els orígens medievals del paisatge català. L’arqueologia del paisatge com a font per a conèixer la història de Catalunya*. Barcelona: Publicacions de l’Abadia de Montserrat, 2004.

54. Palet, Josep Maria. *Estudi territorial del Pla de Barcelona...*; Palet, Josep Maria. “Dinàmica territorial de l’antiguitat a l’edat mitjana...”: 75-110; Riera, Santiago; Palet, Josep Maria. “Una aproximació multidisciplinària...”: 47-90.



6. The archaeology of Andalusian irrigated areas: the most recent research

The work done on al-Andalus in the 1980s and 1990s has meant the creation of a very solid empirical *corpus* —around 200 hydraulic systems studied to date— which exhaustively covers whole regions —especially in the Balearic Islands— and on which it is now possible to base far-reaching and detailed knowledge about forms of peasant settlement, their strategies and social context.⁵⁵ Statistically significant ranges of size have been established⁵⁶ and, in consequence, the small areas (averages of around 1ha in the al-Andalus peninsular *sarq* and the Balearic Islands) have been associated with peasant strategies of minimising risks⁵⁷ and processes of segmentation and population growth.⁵⁸ Forms of cooperation in building and managing agrarian areas and clan territories have also been identified.⁵⁹ It is also possible to describe the peasant strategies for organising milling with water mills placed on the main channel of on hydraulic system, aimed at ensuring compatibility with the irrigation operations while diversifying the occasions for milling.⁶⁰ Finally, this research has allowed us to describe and understand how the migration of groups of Andalusian peasants to the Balearic Islands was carried out from the early 10th century onwards, at what rate, involving which proportion of the population, by which means of transport and with which technical baggage. Their selection of the areas to settle, the creation of networks of peasant settlements, with clan territories and diversified productive exploitation, and the construction of cultivated areas, mainly irrigated, are the result of the migration and colonization that began in 902 AD.⁶¹ This selection required technical knowledge that formed part of a set of peasant wisdom with elements of oriental origin (some water catchment techniques, like the *qanât* and

55. In the article published by E. Sitjes in 2006 (Sitjes, Eugènia. “Inventario y tipología de sistemas hidráulicos de Al-Andalus.” *Arqueología Espacial*, 26 (2006): 263-291), there was a statistical analysis of some 160 cases. There are currently over 200.

56. Sitjes, Eugènia. “Inventario y tipología de sistemas hidráulicos de Al-Andalus”. *Arqueología Espacial*, 26 (2006): 263-291.

57. Retamero. Fèlix. “Lo que el tamaño importa. Cuándo y por qué se modificaron los antiguos sistemas hidráulicos andalusíes”. *Arqueología Espacial*, 26 (2006): 293-310.

58. Kirchner, Helena. “Original design, tribal management and modifications in Medieval hydraulic systems in the Balearic Islands (Spain).” *The archaeology of water. World Archaeology*, 41/1 (2009): 148-165.

59. Kirchner, Helena. *La construcció de l'espai pagès a Mayúrqa...*; Barceló, Miquel; González, Ricardo; Kirchner, Helena. “La construction d'un espace agraire drainé au hawz de la madina de Yabisa (Ibiza, Baléares)”, *La dynamique des paysages protohistoriques, antiques, médiévaux et modernes ou les paysages au carrefour de l'interdisciplinarité et de la diachronie. XVIIe Rencontres Internationales d'Archéologie et d'Histoire d'Antibes*, Joëlle Burnouf, Jean-Paul Bravard, Gérard Chouquer, eds. Sophia Antipolis: APDCA, 1997: 113-125; Barceló, Miquel; Retamero, Fèlix, eds. *Els barrancs tancats. L'ordre pagès al sud de Menorca en època andalusina. Maó (Minorca)*. Mahón: Institut d'Estudis Menorquins, 2005; Kirchner, Helena. “Redes de asentamientos andalusíes...”: 79-94; Sitjes, Eugènia. “Espacios Agrarios...”: 61-78.

60. Kirchner, Helena. “Watermills in the Balearic Islands during the Muslim period”, *VIII Rurality International Conference: Processing, storage, distribution of food. Food in the Medieval Rural Environment*, Jan Klápště, Petr Sommer, ed. *Lorca (Murcia)*, 2009. Turhnout: Brepols, 2011: 45-55.

61. Barceló, Miquel. “Immigration berbère...”: 291-321.



the animal driven waterwheel, some forms of distributing the water, the horizontal wheeled watermills with vertical penstock (*arubah*, in Arab), a range of new plants, etc.) that have produced one or various local syntheses, determined partly by the orographic and hydrological conditions found by the settlers.⁶²

It has therefore been necessary to the process followed by the Andalusian peasant communities, which started with choosing a place to settle and the criteria that guided this choice, followed by an observation of the relief and hydrographical conditions, the design of the agrarian area essential to establish properly the articulation between the source of water, the channels, the distribution and form of the plots and, if there are any, the mills and reservoirs, to the effective construction of the irrigated area and the constitution of its management. In this process, the determination of the place, size and distribution of the residential areas comes last. It is secondary because it is not vital for organising survival. The size and number of household places, is congruent with the surface prepared for cultivation and the type of agricultural practices developed, and this relation is currently one of the most of rigorous and contrasted resources for estimating population magnitudes.⁶³

7. The spatial impact of the feudal conquest of al-Andalus: archaeology and documentation

Finally, the application of “hydraulic archaeology” methods and the morphological analysis to the study of agrarian spaces in areas of feudal conquest in the 12th (Catalonia and Aragon) and 13th centuries (the Valencian Country and the Balearic Islands), has meant establishing with ever greater precision the extent of the modifications undertaken on Andalusian fieldsystems, and identifying and describing the new tillage carried out after the feudal conquest on dry-land and drained areas, or the creation of new irrigated areas.

The conquest of al-Andalus meant the displacement and substitution of populations⁶⁴ and new forms of agrarian colonisation whose ecological and social

62. Barceló, Miquel. “Immigration berbère...”: 291-321; Barceló, Miquel. “The missing water-mill...”: 255-314.

63. Since 1989, when M. Barceló established the relation between the dimensions of the cultivated space and the peasant building group, this has been tested repeatedly in our research: Retamero, Fèlix. “Lo que el tamaño importa...”: 293-310; Sitjes, Eugènia. “Inventario y tipología de sistemas hidráulicos...”: 263-291; Kirchner, Helena. “Original design, tribal Management...”: 148-165.

64. Barceló, Miquel. “Enganya-l’ull. El guerrer, el comerciant i la noble causa en la història medieval de Catalunya”, *Notícia nova de Catalunya: consideracions crítiques sobre la historiografia catalana als cinquanta anys de Notícia de Catalunya de Jaume Vicens i Vives*, Josep M. Fradera, Enric Ucelay-Da Cal, eds. Barcelona: Centre de Cultura Contemporània de Barcelona, 2005: 13-37; Torró, Josep. “Pour en finir avec la ‘Reconquête’. L’occupation chrétienne d’al-Andalus, la soumission et la disparition des populations musulmanes (XIIe-XIIIe siècle)”. *Cahiers d’Histoire*, 78 (2000): 79-97; Torró, Josep. “Colonizaciones y colonialismo medievales. La experiencia catalano-aragonesa y su contexto”, *De Tartessos a Manila. Siete estudios coloniales y post-coloniales*, Gloria Cano, Ana Delgado, eds. Valencia: Publicacions de la Universitat de València, 2008: 91-118.



impact should also be studied through its spatial effect on the fields. On one hand, feudal colonization meant the occupation of the Andalusian agrarian spaces that had been created by peasant communities, whose criteria of selection and management were not only different from those that were imposed after the conquests, but also left indelible marks on the built space, sometimes very rigidly conditioning the establishment of the new feudal settlers and forms of seigniorial management. In Catalonia and the Balearic Islands, the studies show that the conquerors subverted the management forms of Andalusian hydraulic systems, principally irrigated, and substituted the varied Andalusian crops for vines and cereals, without immediately introducing great morphological changes or carrying out extension works.⁶⁵

In contrast, in the region of Valencia, the colonising operations took place both within the old Andalusian agrarian areas and outside them.⁶⁶ Although less intensively studied, the processes of modification or extension of Andalusian farmlands have also been detected in Aragon.⁶⁷

65. Kirchner, Helena. "Colonització de lo regne de Mallorca qui és dins la mar. La subversió feudal dels espais agraris andalusins a Mallorca", *Histoire et archéologie des terres catalanes au Moyen Âge*, Philippe Sénac, ed. Perpignan: Presses Universitaires de Perpignan, 1995: 279-316; Kirchner, Helena. *La construcció de l'espai pagès a Mayúraqa...*; Batet, Carolina. *L'aigua conquerida. Hidraulisme feudal en terres de conquesta*. València-Bellaterra: Publicacions de la Universitat de València-Publicacions de la Universitat Autònoma de Barcelona, 2006; Virgili, Antoni. "La infraestructura hidràulica de la Conca del Gaià a mitjan segle XII segons el 'Llibre Blanch' de Santes Creus". *Universitas Tarraconensis*, 8 (1985-1986): 215-226; Virgili, Antonio. "Espacios drenados andalusíes y la imposición de las pautas agrarias feudales en el prado de Tortosa (segunda mitad del siglo XII)", *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 147-156.

66. Furió, Antoni; Martínez, Luis Pablo "De la hidràulica andalusí a la hidràulica feudal: continuïtat i ruptura. L'Horta del Cent a l'Alzira medieval", *L'espai de l'aigua. Xarxes i sistemes d'irrigació a la Ribera del Xúquer en la perspectiva històrica*, Antoni Furió, Aureliano Lairón, eds. Alzira-València: Ajuntament d'Alzira-Universitat de València, 2000: 19-74; Torró, Josep. "Terrasses irrigades a les muntanyes valencianes. Les transformacions de la colonització cristiana". *Afers*, 51 (2005): 301-356; Torró, Josep. "Terrasses irrigades a les muntanyes valencianes. Les transformacions de la colonització cristiana", *Estudiar i gestionar el paisatge històric medieval*, Jordi Bolòs, ed. Lleida: Universitat de Lleida, 2007: 81-143; Torró, Josep. "Field and canal-building after the Conquest: modifications to the cultivated ecosystem in the kingdom of Valencia, ca. 1250-ca. 1350", *A World of Economics and History: Essays in Honor of Prof. Andrew M. Watson*, Brian A. Catlos, ed. València: Publicacions de la Universitat de València, 2009: 77-108; Torró, Josep. "Tierras ganadas. Aterrazamiento de pendientes y desecación de marjales en la colonización cristiana del territorio valenciano", *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 157-172; Guinot, Enric. "L'horta de València a la baixa Edat Mitjana. De sistema hidràulic andalusí a feudal". *Afers*, 51 (2005): 271-300; Guinot, Enric. "La construcció d'un paisatge medieval irrigat: l'horta de la ciutat de València", *Natura i desenvolupament. El medi ambient a l'Edat Mitjana*, Flocel Sabaté, ed. Lleida: Pagès Editors, 2007: 191-220; Esquilache, Ferran. *Història de l'horta d'Aldaia. Construcció i evolució d'un paisatge social*. Aldaya: Ajuntament d'Aldaia, 2007; Guinot, Enric; Esquilache, Ferran. *Montcada i l'Ordre del Temple en el segle XIII. Una comunitat rural de l'Horta de València en temps de Jaume I*. València: Institució Alfons el Magnànim, 2010; González Villaescusa, Ricardo. *Las formas de los paisajes mediterráneos: ensayos sobre las formas, funciones y epistemología parcelarias. Estudios comparativos en medios mediterráneos entre la antigüedad y época moderna*. Jaén: Universidad de Jaén, 2002.

67. Teixeira, Simonne. "A transformação do espaço agrário irrigado andalusí, a partir da conquista feudal: o domínio do mosteiro de Veruela", *II Jornadas de Trabalho do Laboratório de Análise do Processo Civilizatório 1998*. Campos des Goytocazos: Universidade Estadual do Norte Fluminense. Centro de Ciências do Homen, 1998: 97-105; Laliena, Carlos. "Agua y progreso social en Aragón, siglos XII-XVIII", *¿Agua*



The research that is being carried out in the irrigated urban area of Valencia by various scholars is extremely important. It is allowing to identify with precision not only the transformations that took place after the feudal conquest and in the modern period, but also the dimensions and characteristics of Andalusian hydraulics associated with the rural settlements that bordered the *madīna* Balansiya at the beginning of the 13th century.⁶⁸ The conquerors occupied the irrigated areas of the *sarq* al-Andalus (Eastern part of al-Andalus) through adopted various procedures. In the first place, the conservation, or more or less radical modification of plots accompanied by changes in crops, and the replacement of forms of distributing water coincided, to a great extent, with what had happened in the Balearic Islands and Catalonia. The second type of colonising operation involved the creation of new cultivated areas that had not previously been tilled by the Andalusian peasants. These operations, which involved breaking up new lands, can be identified relatively easily, given that there is a high degree of morphological coherence in the shapes of the plots, regularity in their dimensions, precise textual references, and even correspondence with documented metric systems. The research carried out in these areas of conquest, especially the region of Valencia and, specifically the work of J. Torró, is, in my opinion, exemplary. For the first time in the research at European level into the processes of expansion and conquest of feudal society, this author has used a wide-ranging and coherent approach to measure, not merely describe, the process of replacing the population during the feudal conquest and colonisation of the *sarq* al-Andalus: from the military action, to the legal mechanisms of sharing out land and property, the forms of attracting and establishing settlers, the procedures for displacement, the exploitation and, finally, the expulsion of the indigenous populations, and the specific spaces and resources used to carry out the colonization⁶⁹.

pasada? Regadíos en el Archivo Histórico Provincial de Zaragoza, Julián M. Ortega, María Teresa Iranzo Muñío, eds. Saragossa: Gobierno de Aragón, 2008: 53-83; Ortega, Julián M. "La agricultura de los vencedores y la agricultura de los vencidos: la investigación de las transformaciones feudales de los paisajes agrarios en el valle del Ebro (siglos XII-XIII)", *Por una arqueología agraria: perspectivas de investigación sobre espacios de cultivo en las sociedades medievales hispánicas*, Helena Kirchner, ed. Oxford: Archeopress, 2010: 123-146.

68. Guinot, Enric. "L'horta de València a la baixa Edat Mitjana...": 271-300; Guinot, Enric. "La construcció d'un paisatge medieval irrigat...": 191-220; Esquilache, Ferran. *Història de l'horta d'Aldaia...*; Guinot, Enric; Esquilache, Ferran. *Montcada i l'Ordre del Temple en el segle XIII...* This organisation also occurred in the "huerta" of the *madīna* of Yâbisa (Ibiza) (Barceló, Miquel; González, Ricardo; Kirchner, Helena. "La construcción d'un espace agraire drainé...": 113-125), where various Andalusian clans built and shared a drained farming area and wetland pasture.

69. Torró, Josep. "Pour en finir avec la 'Reconquête'...": 79-97; Torró, Josep. "Guerra, repartiment i colonització al regne de València (1248-1249)", *Repartiments a la Corona d'Aragó (segles XII-XIII)*, Enric Guinot, Josep Torró, eds. Valencia: Publicacions de la Universitat de València, 2007: 201-276; Torró, Josep. "Colonizaciones y colonialismo medievales...": 91-118.



8. Conclusion

The constant effort of measuring, of determining size, has been one of the key aspects of this research. It was in the 1980s that M. Barceló insisted on the need to measure the irrigated areas and, consequently, to establish a method that would allow the original design of the hydraulic systems to be mapped and described. I must emphasise that this idea has been decisive in the results of this research that we, some of his disciples, have continued. And I would like to note that this effort to establish farmland sizes is totally without par in the panorama of the European landscape archaeology. The size will be crucial because it should include at least the survival of peasant communities and the surpluses produced for facing risks and rent or taxdemand⁷⁰.

The scale of analysis is also extremely important. It is necessary to carry out studies at a regional level that cover geographically and historically coherent areas, where all the networks of settlement and farmed areas are analysed in depth. The research focussed only on an isolated settlement is hardly significant, and does not allow the process of selection carried out by peasant communities of a specific society to be understood with all its implications. In the mentioned bibliography of Andalusian field systems, for example, it can be seen that most titles deal with coherent regions where all the irrigated areas from all periods have been studied.⁷¹ This has been fundamental for establishing the typologies of hydraulic systems, the relations between their morphology and the relief or the different techniques of water tapping, and the technical and morphological solutions characteristic of the medieval period and more recent times. And it has also been essential to understand historical processes of greater scope, such as the Andalusian peasant migration and colonisation in the Balearic Islands;⁷² the process of selecting places to settle and the building of networks of peasant settlement in relation to the size of the farmed area and its evolution;⁷³ the scale of the sizes of the farmed areas;⁷⁴ the relation between these sizes and peasants' options for minimising risks (Retamero 2006);⁷⁵ the modifications introduced by the feudal conquests and colonisations;⁷⁶ the process

70. Barceló, Miquel. "Arqueologías e historia medievales como historia", *La materialidad de la Historia*, Juan Antonio Quirós Castillo, dir. Madrid: Siglo XXI, forthcoming.

71. The Geographic Information Systems (GIS) are very useful instruments for analysing and comparing systematic regional studies, Sitjes, Eugènia. "Los espacios agrarios y la red de asentamientos andalusíes de Manacor (Mallorca). Aplicaciones informáticas (BD y GIS) utilizadas para un estudio de ámbito regional en el este de Mallorca", *Recerca avançada en arqueologia medieval. V curs internacional d'arqueologia medieval*. Lleida: Pagès, forthcoming.

72. Barceló, Miquel. "Immigration berbère...": 291-321.

73. Kirchner, Helena. "Original design, tribal management...": 148-165; Kirchner, Helena. "Redes de asentamientos andalusíes...": 79-94; Barceló, Miquel; Retamero, Félix, eds. *Els barrancs tancats...*

74. Sitjes, Eugènia. "Inventario y tipología...": 263-291.

75. Retamero. Fèlix. "Lo que el tamaño importa...": 293-310.

76. Torró, Josep. "Terrasses irrigades a les muntanyes valencianes...": 301-356; Torró, Josep. "Field and canal-building after the Conquest...": 77-108; Torró, Josep. "Tierras ganadas. Aterrazamiento de pendientes...": 157-172; Kirchner, Helena. "Colonització de lo regne de Mallorca...": 279-316;



of formation of the great Valencian irrigated areas or *huertas*,⁷⁷ the seizure of lands worked by peasant by monastic institutions;⁷⁸ or the configuration of networks of villages in the north of the Peninsula⁷⁹.

Finally, the information supplied by the written documentation, and not only the medieval documentation, cannot be ignored. As mentioned above, an agrarian landscape does not have one single chronology, but rather various ones. It is an artefact that has been continuously exploited, maintained or transformed since its creation over very extensive chronological gaps, that often continue down to the present, and through successive and varied social and historical contexts. The written documentation contributes very efficiently to analysing these processes when it is compared adequately with the archaeological record, from the initial creation down to the present. Again, this has been one of the basic assets of research into Andalusian irrigation and the colonizing processes after the feudal conquests. It is not a question exclusively of “documenting” the constructive episodes that affected a specific farmed area or landscape, and scrutinising the texts for a chronology or to identify an author. It is a question of using them to generate sequences of data comparable to those produced by the archaeological techniques, and submit them to a process of joint comparison. To do so is not new. For some time now, some researchers have been establishing this close connection between documentation and landscape, between documentary analysis and archaeological methods and, consequently, it is no longer necessary to insist on the potential that archaeology can have in the research into agrarian history. We know how to do it, we only need to encourage those who do not practice archaeological methods to include them, as A. Furió and T. F. Glick have done⁸⁰.

Equally, archaeologists should not discard the written register. As Moreland notes, texts, like other artefacts, are the result of human creation; they were active in the production, negotiation and transformation of social relations at their time of writing and, often, I would add, with a power for chronological setting and projection.⁸¹ Thus, allocation documents rent books or a collection of notarial documents, duly analysed, allow us to establish a formative phase of the landscape, such as the state of the irrigated areas in the rural Andalusian landscapes at the time

Kirchner, Helena. “Arqueologia colonial: espais andalusins i pobladors catalans, 1229-1300”, *El feudalisme comptat i debatut. Formació i expansió del feudalisme català*, Miquel Barceló, Gaspar Feliu, Antoni Furió, Joan Sobrequés, eds. València-Barcelona: Universitat de València, 2003: 201-236.

Laliena, Carlos. “Agua y progreso social en Aragón, siglos XII-XVIII”...: 53-83; Ortega, Julián M. “La agricultura de los vencedores...”: 123-146.

77. Guinot, Enric. “L’horta de València a la baixa Edat Mitjana...”: 271-300; Guinot, Enric. “La construcció d’un paisatge medieval irrigat...”: 191-220; Esquilache, Ferran. *Història de l’horta d’Aldaia...*; Guinot, Enric; Esquilache, Ferran. *Montcada i l’Ordre del Temple en el segle XIII...*

78. Batet, Carolina. *L’aigua conquerida...*; Kirchner, Helena. “Espais agraris en el terme del monestir...”: 22-35.

79. Fernández Mier, Margarita. *Génesis del territorio en la Edad Media...*

80. Furió, Antoni. “L’organització del territori...”: 247-300; Glick, Thomas F. “Sistemes agrícoles islàmics...”: 45-89.

81. Moreland, John. *Archaeology and text*. London: Duckworth, 2001: 31.



of the feudal conquests. On the other hand, and at the same time, the same texts inaugurate the process of feudal colonization and provide information about the mechanisms for handling populations, those expelled and those newly brought in, and the morphological and management changes introduced into the agrarian areas occupied, or the *ex novo* creations necessary to carry out these actions. However, the texts do not offer the information simply by reading at them. Their descriptive capacity is not immediate. They must be submitted to a detailed analysis and compared with the landscape they describe.

J. Moreland's warning about the false liberating effect of medieval archaeology over written documentation, because of the influence of New Archaeology theory, remains relevant⁸².

The recent archaeology rural settlement patterns before and after the *incastellamento* cannot continue to ignore that the massive appearance of notarial documentation in the 10th century, and even more so the 11th, is another instrument in this process. Thus, the 8th and 9th-century villages were still not conditioned by this type of documents and, at the same time, cannot be studied as if the Visigoth council law, the Frankish polyptychs or the numismatic record did not exist. In 1996, M. Barceló argued for the need for a "reorganised archaeology", whose main focus of interest were the fields worked by peasants, to enable the sense and speed of the erosion of their autonomy through the capture of rent to be established⁸³. He stressed the fact that the medieval archaeology of the *incastellamento* had concentrated on the household areas, while the part of P. Toubert's thesis (1973) referring to the reorganization of peasant production detected through the documentation has never been an objective for archaeologists.⁸⁴ Nor is it even today. The colloquium about farmland areas, held in 2008 and published in 2010, was aimed at reintroducing this question into the centre of the historiographical debate about medieval Hispanic societies⁸⁵.

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83. Barceló, Miquel. "Créer, discipliner et diriger le désordre. Le contrôle du processus de travail paysan: une proposition sur son articulation (Xe-XIe siècle)". *Histoire et Sociétés Rurales*, 6/2 (1996): 95-116.

84. P. Toubert quoted extensively the article by M. Barceló "créer, disciplinar..." to insist on the need for archaeology to move out of the household area and orientate itself towards the farmed area and, the networks of circulation to analyse not only the "dynamics of settlement" but also the "dynamics peasant work" (Toubert, Pierre. "L'incastellamento aujourd'hui: quelques réflexions en marge de deux colloques", *L'incastellamento. Actas de las reuniones de Girona (26-27 de noviembre de 1992) y de Roma (5-7 de mayo de 1994)*, Miquel Barceló, Pierre Toubert, coords. Roma: École Française de Rome/Escuela Española de Historia y Arqueología en Roma, 1998: XVI-XVII.

85. Kirchner, Helena, ed. *Por una arqueología agraria...*



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