Spanish Wood Pasture: Origin and Durability of an Historical Wooded Landscape in Mediterranean Europe

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ABSTRACT

Spanish *dehesas*, the most extensive wood pastures in Mediterranean Europe, are a vivid example for demonstrating that the impact of rural communities on forests has not always been a bad thing. Environmental history is vital for understanding this cultural landscape. This article first analyses the origin of the dehesa. The border logic and the medieval Reconquest are elements that undoubtedly played a decisive part in its genesis; but, for the significance of Roman influence in Spain, it is necessary to consider the question of the possible existence of dehesas in Antiquity. The second aspect concerns the spreading of this landscape from the Middle Ages onwards. Dehesas are usually linked to the large properties owned by military orders, but most of all the spreading of the dehesa was favoured by the rise of transhumance from the thirteenth century onwards. Finally, the article emphasises that the durability of the Spanish wood pasture can be explained by a combination of several factors: insecurity along the border, the fact that transhumance was the most important industry in Spain for many centuries, and the protective laws adopted by the rural communities in order to protect their dehesas.

KEYWORDS

Dehesa, transhumance, woodland landscape, Mesta, Spanish Reconquest

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INTRODUCTION

In Mediterranean Europe, human action on forests is generally perceived in a negative way. Rural communities are thought to have dramatically depleted the forests. Because of this well-established dogma, analysis of the interaction between humans and the forest frequently amounts to a vague chronicle of forest degradation. However, this assumption is sometimes contradicted in reality. Without denying the existence of important deforested expanses in the Mediterranean area, the impact of rural communities on forest evolution has not always been a bad thing.

In fact, in many cases rural communities have contributed to the shaping of valuable forest landscapes. Spanish wood pastures, called *dehesas* (*montados* in Portugal), are a vivid example of this. Dehesas are among the most original forest landscapes in Mediterranean Europe. They are composed of two strata: a more or less sparse blanket of trees (mostly evergreen oaks) and, under the trees, a herbaceous stratum often used for grazing. This cultural landscape occurs in the western Mediterranean area (Sardinia, Morocco, Spain, Portugal) as well as in the east (Crete, Cyprus, Greece). Dehesa landscapes are not restricted to the Mediterranean countries of the Ancient World: extended wood pastures cover large surfaces in central Chile and also in North America, especially in Michigan and Texas. But they are not as well represented as in the Iberian Peninsula, where dehesas stretch out over 3,000,000 hectares, of which more than 90 per cent are located in South-west Spain (Figure 1). They represent the biggest wood pasture cover in Europe.[1]

Environmental history is vital to our understanding of this cultural landscape. The first aspect of this article is to look for the origins of the dehesa landscape. In the particular context of South-west Spain, the border logic and the medieval *Reconquista* process are elements that undoubtedly played a decisive part in its genesis. But in this area of ancient agrarian civilisation, it seems necessary to raise the question of the possible existence of dehesa landscapes before medieval times, as well as the question of the place of the dehesa in the well-known triptych *ager*, *saltus* and *silva*. The second aspect concerns the spreading of this landscape from the Middle Ages onwards. Dehesas are usually associated with the large properties owned by military orders who took an active part in the Christian Reconquest. Is the spreading of the dehesa landscape really connected with the large properties which belonged to military orders, or is it the outcome of the rise of the transhumance from the thirteenth century onwards? The third question is how can the surprising durability of the dehesa landscape be accounted for? What are the historical factors that explain why the dehesa landscape has been preserved over the centuries and is still widespread today in South-west Spain?

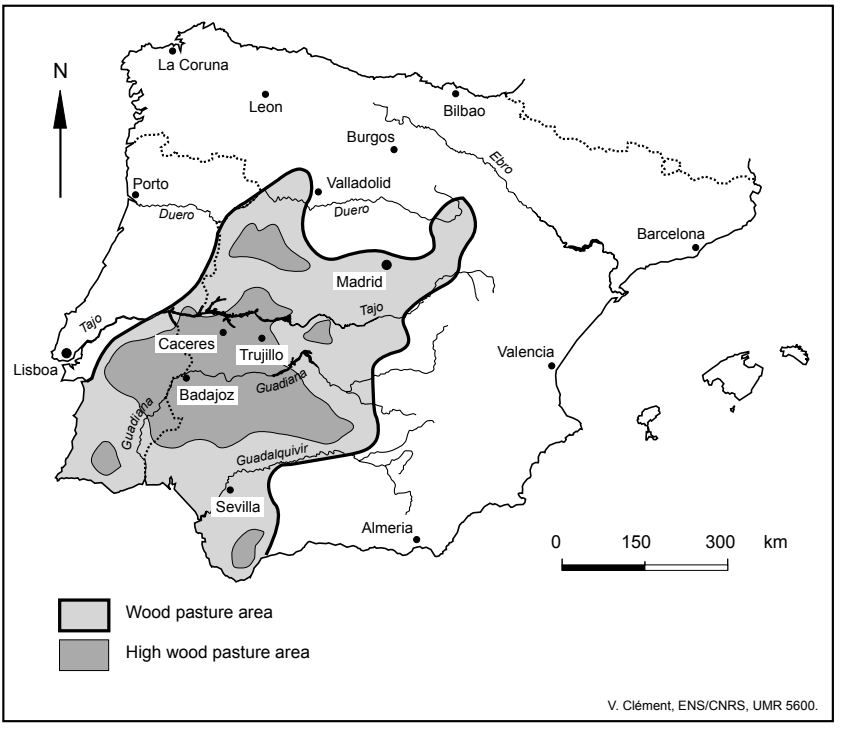

FIGURE 1. Distribution of wood pastures in the Iberian peninsula

I. DEHESAS AS AN ANTIQUE LANDSCAPE

Our contemporary reading of rural landscapes in the Mediterranean area is largely dependent on the famous Roman triptych *ager*, *saltus* and *silva*. What is the place of the dehesa in this apparently simple rural picture, in which every form of land use seems to fit neatly into one of those three types of landscapes? Do we have to consider the dehesa as a completely atypical landscape? Or should we challenge the landscape triptych, which seems suspiciously simple?

In the classic conception, *ager* corresponds to cultivated areas, *saltus* to grazing lands and *silva* to forest stretches.[2] Nevertheless, these three categories, which are used for describing the Mediterranean rural landscape, are in fact legal concepts inherited from Roman legislation. They were used for distinguishing different kinds of properties. In the Roman Empire, *ager* and *saltus* were provincial properties, while *silva* belonged to the public domain of Rome. *Ager* was a kind of individual property corresponding to the cultivation plots which

were assigned to the Roman settlers after a centuriation process.[3] The individual plots as a whole composed what the Romans called *ager cultus*. The plots that were not allotted to any particular settler were broadly named *saltus*. The *saltus* areas were intended for common use.[4]

Ager, *saltus* and *silva* did not imply that the land was intended only for either agricultural, pastoral or forest use, or that they were well-determined landscapes. *Ager cultus* was certainly intended first and foremost for agriculture, but herds were not excluded from it.[5] The Romans set up the two-field system in which lands were cultivated only every two years. Every year, half of the cultivated lands were left fallow and herds were led onto them to graze. The fallow lands became temporarily a *saltus* appendix.[6] Herds' intrusions into *ager cultus* were not merely anecdotal. According to the *Lex de modo agrorum*, mentioned by Cato in 167 B.C., the Roman legislators wanted to regulate such a practice in order to protect the cultivated plots better because herds invaded them too often.[7] *Saltus* was not a scrub landscape without trees as is often claimed; on the contrary, the *saltus* concept was applied to all the wooded areas.[8] As opposed to *silva*, *saltus* was a forest close to the cities and villages and used as wood pasture. It could include some temporary cultivation plots.[9] *Silva*, on the other hand, was a deep forest, remote from cities and villages, where tall trees were occasionally cut down to supply the Empire's needs for building or navy timber. But even then, the difference between *saltus* and *silva* was not very strict. Sometimes, *silva* took the name of '*silvae et pascua publica*', which leads to suppose a use of these forested areas for breeding.[10] Some *silva* parts, called '*pratum*', were reserved as pasture for animals belonging to the Roman army (horses, mules, donkeys). Finally, extended *silva* blankets that were less accessible were out of the control of the Roman legions. The rebel Iberians found shelter there and moved around in the forest with their livestock.

So the idea of an antique rural landscape, which was rigorously divided into *ager*, *saltus* and *silva* is largely a myth.[11] The different types of rural space in Roman times more or less included agricultural, pastoral and forest activities. The borders between fields, pastures and forests were often vague.[12] Latin agronomists recommended this agrarian pattern. Columella, born in Cadiz (*Gadès*, Spain), defended the *coltura promiscua* system in which the farmer could associate on the same plot crops, fodder trees for the feeding of herds (in particular oaks, elms and ash trees) and a vineyard.[13] Cato insisted on the necessity of preserving forests for firewood (*silva caedua*) and forests with acorns (*silva glandaria*) for pig feeding. He established a hierarchy between nine productions: vineyard, irrigated plots, willow trees, olive trees, meadows, cereal crops, coppice, orchards and forests with acorns.[14] Such a classification implicitly proves the considerable contribution of trees and woods to the rural economy. It also underlines that in Roman times many forests were integrated into the rural space, in particular for stock breeding. At times, they were even-

tually transformed into wood pastures.[15] For example, Roman Umbria (Italy) was famous for its good acorns and for its pig breeding. Oaks played a major role in pig feeding, so the farmers absolutely had to maintain trees on their lands, especially oaks called *quercie camporili*. Desplanques' point of view is that the oaks preserved in Umbria formed a particular landscape similar to the Iberian wood pastures.[16] Barker considers that most of the Italian forests were affected, more or less, by this landscape dynamic, because of the development of livestock breeding.[17]

In Roman South-west Spain, the rise of the transhumance system had contributed to the shaping of dehesas.[18] But it is difficult to assess the real incidence of such a process. Surprisingly, the landscape dynamic of the forest produced by the increase in pastoral activity is little understood. Traditional historiography laid more emphasis on Roman agriculture, showing little interest in the relationships between the breeding system and forest evolution. This is because agricultural activity left a lot of built structures (for example, Roman villas and small hydraulic dams), whereas remains of pastoral activity are obviously less numerous and more difficult to find.[19] But it is quite clear that the Romans were not the inventors of the dehesa. The analysis of pollen and wood charcoal carried out by Stevenson and Harrison set the origin of the dehesa landscape at about 4,000 years B.C. in the Huelva province.[20] Other researchers have confirmed those results. In the Medellín region, pollen studies realised by Almagro Gorbea highlight the fact that the dehesa landscape dates back to 2,500 years B.C., long before the Roman occupation.[21] Davidson and Chapman, both archaeologists, have also demonstrated that the transhumance system and the formation of dehesas were perfectly integrated into Palaeolithic and Mesolithic cultures of South-west Spain.[22] For Edmonson, the dehesa landscape's appearance in prehistoric times is connected with developments in livestock breeding.[23]

In conclusion, the landscape of wood pastures has its roots set in prehistoric times, before the Roman occupation. In Roman times, such a kind of landscape was also present in the countryside. But, because of insufficient research concerning its spread in antiquity, it is difficult to have a definitive idea of its relative importance in Spain. Nevertheless, the dehesas were certainly not as extensive as the croplands, vineyards and orchards along the Guadiana and the Guadalquivir valleys (called *Anas* and *Betis* in Roman times) where the Roman settlers were chiefly concentrated. After the fall of the Roman Empire, invasions of the Early Middle Ages (Barbaric invasions, Arabic conquest) widely contributed to depopulation of this area, in particular in what is today the Extremadura region, where dehesas are currently so widespread. The dehesas of Antiquity mostly disappeared under the combined effect of human depopulation and forest recovery. In the twelfth century, Extremadura was still a thinly populated marsh.[24] So the spreading process of the current dehesa in South-west Spain is certainly a genuine product of the Reconquest.

II. DEHESAS AS AN INHERITANCE OF RECONQUEST

Dehesas are undoubtedly one of the most visible consequences of the Christian Reconquest in the rural landscape.[25] But we must never forget that during the Medieval period the dehesa was above all a legal concept before being a kind of landscape. The term was used to refer to an enclosed forest.[26] In the Fuero Juzgo, the Visigoths' Code of Law enacted in 654, the dehesa appears in its ancient form of *pratum defensum*, which stemmed from Roman legislation.[27] According to the Corominas dictionary, the word *defesa* was only mentioned for the first time in 924. The dehesa concept occurs in this form in the Fuero of Sepúlveda of 1076.[28] This particular status of forest can also be found in other countries of Mediterranean Europe. In Lombardy (Italy), a *gazium* (plural, *gazzio*) was an enclosed forest, which was reserved for hunting and grazing.[29] In Languedoc (France), the words *devesa*, *devès* or *devèze* also indicated enclosed forests.[30] Nevertheless, the spreading of the enclosed forests in Spain has no equivalent in Mediterranean Europe. After the Christian Reconquest the greater part of Extremadura was progressively covered by dehesas. The dynamic began in the late thirteenth century. But as demonstrated by Martín and Oliva the process accelerated considerably during the course of the fourteenth and the fifteenth centuries.[31] Why was there such an expansion in enclosed forests after the Reconquest? Did the dehesas grow either with the development of the large properties of the military orders as is usually accepted, or rather because of the rise of transhumance?

Before analysing this point, it is necessary to have a clear idea of what the concept of large property was in the Medieval period. The large properties of South-west Spain had their origin in the process of territorial appropriation after the Christian Reconquest. In the south Tagus River, the Reconquest progressed in a significant way only after the storming of Alcántara in 1213. Southern towns of Extremadura were conquered some decades later: Cáceres in 1229, Badajoz in 1230, Trujillo in 1232 and Medellín in 1234. The repopulation of the conquered territories had a strategic aim.[32] In order to strengthen the Christian Reconquest, it was necessary to attract new settlers into this forested and weakly populated marsh. The appropriation of the territory took place according to two modalities. The military orders (orders of Alcántara, Calatrava and Santiago) played a very active role in the advance of the Christians. They were composed of monk-soldiers. To reward them, the king gave them large properties. Around 1350, the orders of Alcántara and Santiago owned almost two million hectares between them.[33] As in the north Tagus River,[34] the king also granted large territories called '*comunidades de villa y tierra*' to the communities of colonists. They were usually situated around fortified towns like Cáceres, Trujillo and Badajoz, though this was not systematic. In the case of Mérida, the king gave the land to the military order of Santiago.[35] These modalities of territorial appropriation thus created a dual situation: on the one hand, there were the large

properties of the military orders and, on the other, what we can qualify as the large properties of communities, for the territories of the *comunidades de villa y tierra* had often tens thousands of hectares.

The idea of large property was rather different from our current conceptions. The owners, whether from the military order or from the community, did not have an exclusive use of their territories. They had to organise the military defence of their territory, and they were also allowed to levy taxes and to exercise justice. But there was no rigorous separation between seigniorial, community or individual ownership. In the territory of Mérida, which stretched over 35,000 hectares, the Order of Santiago could only keep a third of this estate for its own use. The remaining two-thirds had to be given up to the colonists. So the new settlers used the greater part of the territory of Mérida, mostly in a collective way. But they could also possess individual plots or small dehesas in full property.[36] In the territories of the communities, as in the case of Cáceres, the king or the council of the community also allowed some settlers to possess private plots or dehesas.

In the large properties of the military orders, breeding of livestock was an effective way to exploit the territories conquered against the Moors. Moreover in Extremadura the omnipresence of the forest was an ideal condition for the development of the transhumance.[37] In the eleventh century, most of the convents in the northern Duero area (Cardeña, Oña and Sahagún) possessed large flocks of sheep, and they already practised transhumance over short distances.[38] But transhumance increased thanks to the progress of the Reconquest towards the south, because the military orders could develop a system of transhumance over long distances. The lands conquered in the territory of *al-Andalus* favoured the herds' moving over more than a thousand kilometres. Thus, functional links were established between the summer pastures in the north (*agostaderos*) and the winter pastures (*invernaderos*) in the south of the country.[39]

From the late thirteenth century onwards, the transhumance system increased in an unprecedented manner because of two historic events: in 1230, the union of the realms of León and Castile, and in 1273, the creation of the *Honrado Consejo de la Mesta*, a powerful association of transhumant breeders. King Alfonso X (1252–1284) granted vast privileges to the members of the association.[40] The breeders of the Mesta were allowed to take their herds in all the forests of the kingdom.[41] They had a monopoly on the use of every highway and byway (*cañadas*, *cordeles* and *veredas*) of the transhumance routes. The *Comendadores* of the military orders were among the Mesta's biggest breeders. So, at the end of the Middle Ages, the territories under the authority of the military orders, all of the Mesta's members, had become a succession of enclosed forests. In the fifteenth century the Order of Santiago already possessed at least 11 dehesas in the territory of Mérida alone.[42] In all of the territories of Calatrava, there were at least 114 dehesas belonging to this military order. [43] Transhumance routes connected all of the dehesas of the military orders. The breeders of the

Mesta led up to the enclosed forests their numerous sheep, which were around 2,700,000 in 1467.[44]

What was the situation in the large estates of the communities? The enclosed forests also increased in those territories between the fourteenth and the fifteenth centuries.[45] For instance, at the beginning of the fifteenth century the territory of Badajoz already had at least 25 dehesas.[46] The reasons for such an increase were the opposite of those applicable to the military orders. In fact, the dehesas of the communities grew in reaction to the development of the transhumance herds.[47] The settlers wanted protection against the sheep of the Mesta, which too often invaded the forests of the peasant communities. The uses of the communities' dehesas were quite different from those of the military orders, as shown in the old Ordinances of Badajoz (1500).[48] The magistrates of the community compiled the document in order to regulate all the common practices in the territory of Badajoz. The document is composed of 52 articles, of which the first 15 concern the dehesas of Badajoz, and underline their importance for the community. The enclosed forests were named *dehesa boyal*, as in other communities.[49] They were reserved for the oxen, which were the most valuable animals for the farmers (article 3).[50] Sheep, goats and pigs were excluded from the dehesas (article 1). Guards, called *boyeros*, had to watch over the dehesas (article 5); they had to stay and live all the time in the dehesa (article 13).[51] The agreement of the ploughmen of Badajoz was necessary for designating the boyeros (article 15).[52] In return, the community undertook to respect the cañada which crossed their territory (article 25).[53]

Nevertheless, these Ordinances did not put an end to the conflicts between the breeders of the Mesta and the community. The clauses of the new Ordinances of Badajoz (1767) were almost the same clauses which had been used to resolve the conflicts inherited from the Late Middle Ages.[54] The memory of the conflicts between Mesta breeders and peasant communities persisted from age to age, because they were often violent. One of the most famous examples concerns the village of Fuente Ovejuna. In 1792, the geographer of the king, Tomas López, recalled the incident: in 1476, the villagers put to death the *Comendador mayor* of Calatrava, Fernándo Gómez de Guzmán, because of his abuses concerning the dehesa boyal.[55] The event inspired Lope de Vega (*Fuente Ovejuna*, 1612).

So the growth of the dehesas was chiefly due to the development of transhumance, rather than to the existence of the large properties belonging to the military orders. In the territories of the military orders, the forest had to be enclosed to ensure that the breeders had enough pasture to feed their sheep. The turning point came in the second half of the thirteenth century, when transhumance breeding experienced an unprecedented rise. The enclosed forests continued to spread afterwards, mostly over the fourteenth and the fifteenth centuries. At the same time, surprisingly, transhumance also caused the development of dehesas in the territories of the communities, so that they might protect their own forests

against the sheep of the Mesta. But did the dynamic of enclosure necessarily imply the development of the wood pasture landscape?

III. DEHESAS AS WOOD PASTURE LANDSCAPES

Researchers have neglected the question of the origin of wood pasture landscapes in the dehesas. Llorente Pinto recently underlined the lack of detailed research on the subject,[56] as did Grove and Rackham: both scientists blamed Julius Klein, author of a masterly thesis on the Mesta, for failing to back up his statements on the landscape of the dehesa with historical sources.[57] That is why two contradictory dogmas have resulted from this vacuum. For some academics, the appearance of the wood pastures goes back up to the Reconquest, while others assert that the landscape of wood pasture dates no farther back than the eighteenth century.

The origin of the dehesa as a wood pasture landscape is indeed a difficult matter. Written medieval sources often mention the existence of dehesas but without giving any description of the landscape. Nevertheless, there are some sources which have been barely exploited and which supply invaluable information: the boundary surveys. Such demarcations were numerous in the fourteenth and fifteenth centuries. They were drawn up for the lawsuits establishing the owners' rights on particular dehesas. Boundary surveys are legal documents

FIGURE 2. Dehesa landscape in Cáceres, South-west Spain

with great reliability.[58] They were made under the authority of magistrates who represented the different parties involved. The magistrates followed the limits of the dehesas on the ground and confirmed or added boundary marks, in order to fix the borders of the controversial rustic goods. Later the magistrates drew up a report describing exactly the place and nature of every boundary mark. Trees were often used as boundary markers.

The example of the territory of Cáceres is quite interesting because it is situated in the heart of the large dehesa expanses of South-west Spain (Figure 2). Several boundary surveys were made in this territory in the fourteenth and fifteenth centuries. The three demarcations described here are respectively situated at the east, south and west parts of the territory of Cáceres. They concern different kinds of owners, either collective or private ones.

In the first document, dated 20 February 1300, the magistrates of Cáceres, responding to a royal demand, carried out a boundary survey of the dehesa of Guadiloba belonging to a woman named María García. This dehesa was situated east of Cáceres, close to the road going towards Trujillo. The following extract leaves no doubt as to the existence of a wood pasture landscape at that time:

> […] on the road going towards the atalaya towers, [the limit] gives on to a forked holm oak, and farther on the right, big slate rocks situated over a spring, and farther on the right, a round shaped holm oak near a brook valley at the bottom of which there are two forked trees by a stump. And farther upwards in this valley, a big forked holm oak, and on the right, another tall holm oak which is between slate rocks near the brook valley, and farther up the brook valley, a holm oak which is at the summit where there is a boundary mark by a tall oak which is on the crest covered with brooms and oak coppices […]. [59] (Translated from Spanish)

The document highlights the presence of a landscape which is mainly composed of holm oaks. Most of the trees were ancient, large-sized and pollarded, hence their forked shape. Between those trees, there were spaces without shrub vegetation. This landscape clearly corresponds to a wood pasture. In the treeless spaces, the magistrates of Cáceres used topographic or rocky elements to limit the dehesa. The presence of stumps on the boundary proves that there were some former trees that had been cut down. The holm oak's capacity to bud again from its stumps after having been chopped down explains the existence of isolated clumps of oak coppice on the boundary line.

In the south of Caceres, a second boundary survey, dated 15 March 1406, was made for clarifying the limits between the territories of Cáceres and Mérida:

> […] another boundary mark has been renewed by putting stones on a rock which is up a hillock, and there is another boundary mark by two cork oaks near an old majada […] on the right of the majada, farther up towards the summit where there are rocks and a grove of cork oaks, and farther on the right, there is a large boundary mark by the cañada of Valdecintados, and from there, towards the veredas which is coming from the Rincón […] and farther, on the left, there

> is another boundary mark by a holm oak with a cross against it, and farther a cork oak near slate rocks and with two crosses against this cork oak […]. [60] (Translated from Spanish)

Here, the boundary marks are mostly associated with cork oaks and secondarily with holm oaks. It is also a wood pasture, composed of sparse trees and areas without shrub stratum. As in the previous case the magistrates defined the limit of the dehesa by using topographic elements (hillocks, slate rocks) in the treeless areas. In the places with neither trees nor rocks they set the borders with stone heaps. Breeding activity in this dehesa is attested by several words associated with the transhumance routes (*cañadas*, *veredas*) or suggesting the presence of a small fenced park used for keeping animals (*majada*).

In the third document, dated 21 November 1457, another boundary survey was made on the territory of Cáceres between the dehesa of Puerto de Carmonita, belonging to Cáceres council, and the dehesas of Mayoralgo and Mayoralguillo, ownership of Diego de Mayoralgo. Those dehesas were on the western part of the territory of Cáceres, more exactly on the eastern hillside of the Sierra of San Pedro:

> […] and off from the cistus heath, on the right another boundary mark at the foot of a pollarded holm oak and with a cross against this holm oak, and farther, on the right another boundary mark up a small hillock near a holm oak coppice, and from there, farther on the right another boundary mark at the foot of a cork oak close to a few little houses and a cross against this cork oak, and nearby in a brook valley another boundary mark, and farther on the right another boundary mark on the top of a mound near some holm oaks, and on the right another boundary mark made with three pebbles at the foot of a cork oak and a cross against this cork oak […]. [61] (Translated from Spanish)

The document also gives us the clearest evidence of a dehesa landscape. It is composed of holm oaks and cork oaks. Sometimes, the magistrates mentioned the presence of gum cistus. This plant colonises the burnt areas. On the border, the particular shape of the trees was sometimes specified (pollarded holm oak). Thus, the trees used as border markers were easily spotted. The magistrates also put crosses on the trees. Transhumance routes going through those wood pastures indicated the importance of breeding activity on them.

These three examples, taken from the territory of Cáceres, demonstrate that the dehesa landscapes were already widespread in the fourteenth century and were always associated with pastoral activity. Indirectly, the documents inform us about the two ways used for thinning the tree coverage and eliminating the shrub stratum: by cutting some trees down (presence of stumps) or by burning the shrubs (presence of gum cistus). The introduction of herds into the forests, however, had certainly accelerated the clearance of the shrub stratum. In this way, the breeders managed to obtain large grazing spaces for their droves. They protected the tall trees because of their usefulness for breeding activity. The trees

preserved the moisture of the soil, and so ensured the preservation of grazing spaces. They were also fodder trees. Foliage, young branches and acorns were used to feed the herds. Finally, they supplied shade for the animals.

We can conclude that dehesa landscapes did not appear in the eighteenth century. Wood pastures were still widespread in the Late Middle Ages, at least in Extremadura. In the territory of Plasencia (northern Extremadura), Clemente Ramos has arrived at the same conclusions.[62] From the Middle Ages onwards wood pasture became an extensive landscape pattern in South-west Spain. The spreading of the wood pastures indicates that this landscape form was well adapted for developing livestock breeding activities. Moreover, the soils of Extremadura were poorly adapted for cultivation. The stock breeding industry, and especially transhumance, was the best way to exploit an area which in the Late Middle Ages was still mostly forested and thinly populated. But is that enough to understand the durability of the dehesa landscape over time? Are there any other historical factors to explain the amazing longevity of this landscape to this day?

IV. DEHESAS AS AN ENIGMATIC DURABLE LANDSCAPE

The durability of the dehesa landscape is a real historical enigma. How can one explain the fact that the wood pastures, which were largely diffused thanks to the particular conditions of the Reconquest, are still today an essential component of the landscape in South-west Spain? The situation is all the more surprising given that in the other Mediterranean countries wood pastures have almost disappeared, as in the south of France or in the Italian Peninsula.

The durability of dehesa landscapes can be explained by a combination of several factors. The first factor is the permanence of the border logic over time.[63] After the Moorish conquest in 711, the current Extremadura was included in a border marsh which extended from West to East between the territories of the Moors and the Christians.[64] At the beginning of the thirteenth century, the Christian Reconquest of Extremadura did not put an end to the border logic. There was only a change in its direction: it became a north to south border between the Portuguese and Spanish. The permanency of the border has influenced the perception of Extremadura a great deal. Indeed, today it is still considered as a marginal territory and as a less populated area of Spain.[65] Insecurity along the frontier with Portugal for a long time ensured only a very small population. In the fifteenth century, the Cáceres council regretted the depopulation of the frequently attacked villages of the border. The village of Aliseda, situated close to the boundary with Portugal, provides a telling example. Armed gangs regularly destroyed, plundered and set the village on fire. In a document of 1426, about two centuries after the reconquest of Cáceres, the council granted tax exemption to the present and future inhabitants of Aliseda in order to attract new settlers.[66] The council also allowed the inhabitants of Aliseda to take shelter in

the fortified town of Cáceres in case of Portuguese attacks. Twenty years later, the problem was not yet solved, as another document of 1446 shows.[67] The village of Aliseda was always almost deserted and the rare inhabitants were often threatened. Insecurity affected all the territories near the Portuguese border. In the bylaws of Badajoz (1500), men were allowed to wear a lance and a sword for self-defence. [68] Danger was, for many centuries, a real threat in the border region. It not only limited the populating process, but favoured the development of a rural economy based on stock breeding, which was less vulnerable than cultivation in case of attack or conflict.

However, the border logic alone is not enough to explain the durability of the dehesa landscape. A second factor also needs to be considered: the surprising longevity of the Mesta. Created in 1273, the powerful breeders' organisation survived for almost six centuries. It widely contributed to the conservation of the dehesa landscapes, for three major reasons. First, because the Mesta breeders had a right to go through all the dehesas: through those belonging to military orders of course, but even through the dehesas of the communities. The right of way was a privilege of the Mesta breeders granted by the king. The local ordinances had to recognise it as shown in the fourth article of the bylaws of Badajoz (1500): '[…] *the droves can cross our dehesas, but without stopping, eating or sleeping in them* […]' (translated from Spanish).[69] The right of way strongly limited the change of dehesas into cultivation lands or towards others kinds of use. The second reason is that the Mesta breeders, through renewable rental agreements, sometimes hired the dehesas of communities or private owners. This was the case in Trujillo.[70] So the evolution of dehesas towards another form of exploitation was quite limited. The third reason is due to the importance of the Mesta in the Spanish economy. Between the sixteenth and the eighteenth centuries, the wool of merinos was one of the main sources of Spain's wealth. Wool was exported towards Flanders and England. For that reason, all endeavours on behalf of the political powers to call into question the powerful organisation of breeders was rather a risky venture. The conservation of the dehesas was vital to feed the herds of the Mesta, which did not stop increasing over the centuries: from 2,700,000 sheep in the late fifteenth century,[71] the number increased to 3,500,000 in the early sixteenth century [72] and to 5,000,000 in the late eighteenth century.[73] Nevertheless, progressively the Mesta was a victim of its own success. In the particular context of a growing population and the need for cultivable lands in Spain, the pressure caused by the Mesta's herds had become intolerable in the eighteenth century. This explained the criticisms formulated in enlightened circles, in particular by the Minister Jovellanos who recommended, around 1750, the abolition of the Mesta.[74] But the powerful breeders' association that was inherited from the Reconquest was abolished only in 1836. The decision on behalf of the political powers took place in a particular context: after the war for independence against France and the advent of the bourgeoisie after the Cortes of Cadiz in 1812, the Spanish State wanted to abolish the structures of

the Ancien Régime of which the Mesta was one of the strongest symbols. The end of the large privileges of the Mesta made the wool economy less and less profitable. In 1892, only 1,355,000 transhumant sheep remained in Spain,[75] less than a quarter of the herds of the late eighteenth century. But for many centuries transhumance had contributed to the preservation of wood pastures for they were a kind of landscape well adapted to this activity.

The third factor concerns the protective law adopted by the communities of Extremadura to preserve their own dehesas. All of the local ordinances contained number of measures intended to protect the wood pastures. It was absolutely forbidden to cut down trees in the dehesas. In the bylaw of Mengabril (1548, in the territory of Medellín), several fines were imposed as punishment according with the size of the trees or branches illegally chopping down in the dehesa:

> […] any person caught chopping down, conveying or loading a holm oak tree or coppice in our dehesa will be fined five hundred maravedis in benefit of the council; and for a branch as large as a man's body, the person will pay a fine of three hundred maravedis; and for a branch as large as a man's thigh, two hundred maravedis; and for a branch as large as a man's calf one hundred maravedis; and for a branch as large as a man's wrist twenty-five maravedis; and for smaller branches ten maravedis […]. [76] (Translated from Spanish)

To make it more understandable to everyone, the different size of trees and branches were compared to various parts of the body. The detailed fines demonstrate the great determination of the community to protect the tree coverage (called *vuelo*) of the dehesa. The pasture of the dehesa (called *suelo*) was also protected. It was forbidden to cut grass and take it away from the dehesa. Any person who did so had to pay a fine, and the council confiscated his tool as punishment.[77] The exploitation of by-products, like gathering acorns, was subject to a previous permit given by the council of Mengabril.[78] As in Mengabril, other communities of Extremadura took the same measures; there were only slight differences in the size of the fines. So the use of the wood pasture was strictly regulated by the local ordinances of the sixteenth century, which remained in effect until the nineteenth century. Then, the *desamortización* created a new situation. The desamortización was a process of compulsory sale of goods belonging to the Church and to the military orders (Law Mendizábal of 1836), as well as those of the communities (Law Madoz of 1855). Some dehesas disappeared after having been bought, because the new owner wanted either to pay them off by selling the trees, or to convert them into cultivation lands. But in most cases, the constitution of large private properties of dehesas in Extremadura mainly turned towards two new extensive breeding activities: on the one hand, the breeding of brave bulls for corridas and, on the other, the breeding of black pigs (a local breed) to produce a fine ham called *Jamón de Pata Negra* (Figure 3). These new breeding activities resulted in quite a profitable business, and have enabled the conservation of the dehesas in South-west Spain to this day. [79]

FIGURE 3. Dehesa with black pig in the territory of Cáceres.

CONCLUSION

The origin of the Spanish wood pastures extends back as far as Antiquity. They were present in South-west Spain before the Roman occupation. The wood pastures of Roman times can be considered as a particular form of the *coltura promiscua* system, which was defended by Latin agronomists. Nevertheless, as demonstrated in this article, the current dehesa landscapes are more directly linked with the particular modalities of the Christian Reconquest. After the advance of the Christians, the monk-soldiers of the military orders and the new settlers appropriated the territory. Far from destroying the forest, they shaped an original wooded landscape by clearing the shrub stratum while preserving the tall trees and developing transhumance over long distances. In that way, they managed to exploit the large forest blankets of the border marsh of Extremadura. The development of stock breeding activity enabled them to turn to good account this thinly populated area, which was unsuited for agriculture. The spreading of the dehesa landscape in South-west Spain began in the thirteenth century, and the dynamic accelerated during the fourteenth and the fifteenth centuries. At the end of the Middle Ages wood pastures extended over the greater part of Extremadura.

The durability of the dehesa is a result of a combination of several factors. The permanency of the insecurity along the border with Portugal and, most

of all, the importance of transhumance in the Spanish economy from the Late Middle Ages to the nineteenth century played a decisive part in the conservation of the dehesas in the territories of the military orders. Moreover, the protective measures adopted by the rural communities against the numerous sheep of the Mesta breeders helped to preserve their own dehesas. In the nineteenth century, the abolition of the Mesta in 1836 and the selling of the dehesas to private owners did not lead to the disappearance of the dehesas in Extremadura. New breeding activities (brave bulls and black pigs) have enabled the preservation of the dehesas to the present day.

Two lessons of a more general scope can be draw from the example of the Spanish dehesas. Firstly the Middle Ages are usually known in Europe as a period of intense deforestation favoured by monks and colonists. The shape of the dehesas of the Medieval period clearly challenges this thesis. Secondly the preservation of the dehesa landscapes also proves that the study of the relationship between humankind and the forest cannot be reduced to a systematically negative discourse. If the rural communities in Mediterranean Europe sometimes eliminated the forest to extend croplands because of demographic growth, in other cases, as in Extremadura, they were able to preserve the forest by shaping valuable landscapes. Today, forest engineers, agronomists, geographers, rural historians and politicians recognise the importance of the conservation of the dehesa, which is a cultural landscape that has been shaped over the centuries by rural communities.

NOTES

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[1] Harriet D. Allen, *Mediterranean Ecogeography* (London: Pearson Education Press, 2001), p. 191; André Humbert, *Le monte dans les chaînes subbétiques centrales* (Paris: Publications de la Sorbonne, 1980), pp. 5–8.

[2] David E. Vassberg, *Land and Society in Golden Castile* (Cambridge: Cambridge University Press, 1984), p. 151; Roger Dion, *Essai sur la formation du paysage rural français* (Tours: Arrault, 1934), pp. 80–84.

[3] The process, known as centuriation, was intended for land distribution to Roman settlers. It consisted of dividing the land along two main streets, which crossed each other at right angles: the '*Cardo Maximus*' (oriented North to South) and the '*Decumanus Maximus*' (oriented East to West). A network of secondary cardines and decumanus created a grid of square plots. Every square plot measured twenty *actus* (around 2,52 hectares). The result of such a division was named '*centuriacio*' (centuriation).

[4] Gérard Chouquer, François Favory, *Les paysages de l'Antiquité. Terres et cadastres de l'Occident romain* (Paris: Errance, 1991), p. 227; Philippe Leveau, Pierre Sillières,

Jean-Pierre Vallat, *Campagnes de la Méditerranée romaine* (Paris: Hachette, 1993), p. 69; Gérard Chouquer, François Favory, *L'arpentage romain* (Paris: Errance, 2001), p. 457.

[5] Columelle, *De l'Agriculture* (Paris: Errance, 2002), book VII, 171.

[6] Gérard Chouquer, *L'étude des paysages. Essai sur leurs formes et leur histoire* (Paris: Errance, 2000), p. 76.

[7] Pedro Saez Fernández, 'Los agrónomos latinos y la ganadería', in J. Gómez Pantoja (ed.), *Los rebaños de Gerión. Pastores y transhumancia en Iberia Antigua y Medieval* (Madrid: Casa de Velázquez, 2001), pp. 162–3.

[8] Christopher Wickham, 'European Forests in the Early Middle Ages: landscape and land clearance', in *L'ambiente vegetale nell'alto medioevo* (Spoleto: Centro Italiano sull'alto medioevo, 1990), 2, p. 486.

[9] Wickham, 'European Forests in the Early Middle Ages', p. 488.

[10] Pedro Saez Fernández, 'La ganadería extremeña en la antiguëdad', in S. Rodríguez Becerra (ed.), *Trashumancia y cultura pastoril en Extremadura* (Mérida: Asamblea de Extremadura, 1993), pp. 44–5.

[11] Vincent Clément, 'Une mer des hommes: les limites du monde méditerranéen', in D. Borne, and J. Scheibling (eds.), *La Méditerranée* (Paris: Hachette, 2002), p. 43.

[12] Robert Delort, François Walter, *Histoire de l'environnement européen* (Paris: PUF, 2001), pp. 228–9.

[13] Columelle, *De l'Agriculture*, book V, 125. See also Maria Gemma Grillotti Di Giacomo, *Atlante Tematico dell'Agricoltura Italiana* (Roma: Societa Geografica Italiana, 2000). There are a number of historical documents showing the consistency, over the centuries, of the *coltura promiscua* system in Italy. For Umbria, see pp. 310–11.

[14] Caton, *De l'Agriculture* (Paris: Les Belles Lettres, 1975), p. 10.

[15] Columelle, *De l'Agriculture*, book VII, p. 180.

[16] Henri Desplanques, *Campagnes ombriennes. Contribution à l'étude des paysages ruraux en Italie centrale* (Paris: Armand Colin, 1969), pp. 236 and 245.

[17] Graeme Barker, 'The archeology of the Italian shepherd', *Cambridge Philosophical Society* 35 (1989): 1–19.

[18] Joaquín Gómez Pantoja, 'Pastores y trashumantes de Hispania', in Fr. Burillo Mozota (ed.), *Poblamientos celtibéricos, III simposio sobre los Celtíberos* (Zaragoza: Institución Fernando el Católico, 1996), pp. 495–505.

[19] Vincent Clément, 'Le territoire du sud-ouest de la péninsule Ibérique à l'époque romaine: du concept au modèle d'organisation de l'espace', in J.G. Gorges and F.G. Rodríguez Martín (eds.), *Économie et territoire en Lusitanie romaine* (Madrid: Casa de Velázquez, 1999), p. 119.

[20] Anthony C. Stevenson, Robert J. Harrison, 'Ancient forests in Spain: a model for land-use and dry forest management in Southwest Spain from 4000 BC to 1900 AD', *Prehistoric Society* 58 (1992): 227–47. See also Anthony C. Stevenson, P.D. Moore, 'Studies in the vegetational history of SW Spain. Palynological Investigations at El Acebrón Huelva', *Journal of Biogeography* 15 (1988): 339–61, doi: 10.2307/2845417; and Richard Joffre, Serge Rambal, Jean-Pierre Ratte, 'The dehesa system of southern Spain and Portugal as a natural ecosystem mimic', *Agroforestry Systems* 45 (1999): 57–79, doi: 10.1023/A:1006259402496.

[21] Martín Almagro Gorbea, 'El territorio de Medellín en época protohistórica', in Gorges and Rodríguez Martín (eds.), *Économie et territoire en Lusitanie romaine*, pp. 27–8.

[22] Iain Davidson, 'Transhumance, Spain and Ethnoarcheology', *Antiquity* 54 (1980): 144–7; Robert W. Chapman, 'Transhumance and Megalithic Tombs in Iberia', *Antiquity* 53 (1979): 150–52.

[23] Jonathan C. Edmonson, 'Creating a provincial landscape: roman imperialism and rural change in Lusitania', in. J.G. Gorges and M. Salinas de Frías (eds.), *Les campagnes de Lusitanie romaine*, (Madrid/Salamanca: Casa de Velázquez/Universidad de Salamanca, 1994), p. 22.

[24] José María Monsalvo Antón, 'Frontera pionera, monarquía en expansión y formación de los concejos de villa y tierra. Relaciones de poder en el realengo concejil entre Duero y Tajo (1072-1222)', *Arqueología y territorio medieval* 102 (2003): 56.

[25] Julián Clemente Ramos, 'La organización del terrazgo agropecuario en Extremadura (Siglos XV-XVI)', *En la España Medieval* 28 (2005): 53–4.

[26] Vincent Clément, 'La forêt et les hommes en Castille au XIII^{e} siècle. L'exemple du territoire de Sepúlveda', *Mélanges de la Casa de Velázquez*, XXX-1 (1994): 271–2.

[27] Saez Fernández, 'La ganadería extremeña en la antiguëdad', p. 45.

[28] Emilio Saez, *Los fueros de Sepúlveda*, (Segovia: Diputación provincial, 1953). See Fuero romanceado, title 169, pp. 119–120. The Fuero of Sepulveda was a code of law specific to the border regions. It served as a legal model in all the Castile Kingdom.

[29] François Menant, *Campagnes lombardes au Moyen Âge* (Rome: École Française de Rome, 1993), pp. 206–7.

[30] Aline Durand, *Les paysages médiévaux du Languedoc (X^{e}-XII^{e} siècles)* (Toulouse: Presses Universitaires du Mirail, 1998), pp. 397–8.

[31] José Luis Martín Martín, 'Sur les origines et les modalités de la grande propriété du Bas Moyen Âge en Estrémadure et dans la Transierra de Léon', in D. Menjot (ed.), *Les Espagnes médiévales. Aspects économiques et sociaux, Mélanges offert à Jean Gautier-Dalché* (Nice: Annales de la Faculté des Lettres de Nice, 1983), pp. 81–91; María Dolores Oliva, 'Orígenes y expansión de la dehesa en el término de Cáceres', *Studia Historica. Historia Medieval* 2 (1986): 77–100.

[32] Juan Luis de la Montaña Conchiña, 'Poblamiento y ocupación del espacio: el caso extremeño (siglos XII-XIV)', *Revista de Estudios Extremeños* 2 (2004): 574.

[33] Montaña Conchiña, 'Poblamiento y ocupación del espacio', p. 594.

[34] Vincent Clément, 'Frontière, reconquête et mutation des paysages végétaux entre Duero et Système Central du XI^{e} au milieu du XV^{e} siècle', *Mélanges de la Casa de Velázquez*, XXIX-1 (1993): 117.

[35] José Luis Martín Martín, 'Mérida medieval, señorío santiaguista', *Revista de Estudios Extremeños* 2 (1996): 487.

[36] Martín Martín, 'Sur les origines et les modalités de la grande propriété', p. 85.

[37] Julián Clemente Ramos, 'La evolución del medio natural en Extremadura (1142-1525)', in J. Clemente Ramos (ed.), *El medio natural en la España medieval, Actas del I Congreso sobre ecohistoria en historia medieval* (Cáceres: Universidad de Extremadura, 2001), p. 16.

[38] Marie-Claude Gerbet, *Un élevage original au Moyen Âge. La péninsule Ibérique* (Biarritz: Atlantica, 2000), p. 101.

[39] Charles J. Bishko, 'The Castilian as plainsman: The medieval ranching frontier in La Mancha and Extremadura', in A.R. Lewis and T.F. McGann (eds.), *The New World Looks at its History* (Austin: University of Texas Press, 1963), pp. 56–7.

[40] Pedro Madrigal, *Libro de las leyes, privilegios y provisiones reales del Honrado Consejo General de la Mesta* (Madrid: En casa de Pedro Madrigal, 1586).

[41] For example, in 1284, King Sancho VI granted the Order of Alcántara the liberty of taking their herds anywhere in the kingdom. Bonifacio Palacios Martín, *Colección diplomática medieval de la Orden de Alcántara (1157-1494)* (Madrid: Editorial Complutense, Fundación San Benito de Alcántara, 2000), document 361.

[42] Daniel Rodriguez Blanco, *La Orden de Santiago en Extremadura (siglos XIV y XV)* (Badajoz: Diputación Provincial, 1985), p. 173.

[43] Geronimo López-Salazar Perez, *Mesta, pastos y conflictos durante el siglo XVI* (Madrid: Consejo Superior de Investigaciones científicas, Centro de Estudios Históricos, 1987), pp. 9–10.

[44] Gerbet, *Un élevage original au Moyen Âge*, p. 268.

[45] Clemente Ramos, 'La evolución del medio natural en Extremadura', pp. 16–20.

[46] Martín Martín, 'Sur les origines et les modalités de la grande propriété', p. 87.

[47] Thomas F. Glick, *Islamic and Christian Spain in the Early Middle Ages* (Leiden: Brill Academic Publishers, 2005), pp. 106–7.

[48] See the transcription of the full text of the Ordinances in José Luis Martín Martín, 'Las ordenanzas viejas de Badajoz (1500)', *Revista de Estudios Extremeños* 1 (2001): 233–60.

[49] Vassberg, *Land and Society in Golden Castile*, pp. 28–9. The adjective *boyal* refers to the *buey* (ox).

[50] 'Otrosi, que los labradores puedan tener bueyes para arrendar teniendo pues demasiados de su valor y traellos en las dichas dehesas sin pena, y no otra persona […]', Martín, 'Las Ordenanzas viejas de Badajoz', article 3, p. 247.

[51] 'Otrosi, quel boyero sea obligado a estar e residir en la boyada […]', Martín, 'Las Ordenanzas viejas de Badajoz', article 13, p. 249.

[52] 'Otrosi, ordenamos e mandamos que los dichos boyeros al tiempo que se oviere de recabar sea a contento de los labradores, tomando la justiçia e regidores ynformaçión de personas sin sospecha quál es el que más conviene ser boyero y conforme aquello y al contentamiento de los labradores se tome tal boyero por que mejor haga lo que conviene […]', Martín, 'Las Ordenanzas viejas de Badajoz', article 15, p. 250.

[53] As seen in article 25, the peasants used to build small buildings such as cheese dairies (*quesera*) or pigsties (*zahúrda*) at the side of the cañada for the few animals they had. But the cañada, which was usually 75 metres wide, was reserved for the Mesta's breeders. Despite the ban, the farmers frequently colonised the sides of the cañada. That, of course, was another motive of conflicts between the Mesta's breeders and the community. 'Hordenamos y mandamos que ninguna persona vecino destaçibdad y su término no tenga quesera ni çahurdas ni corrales ni redes de ovejas ni de carneros en cañada, y si la tuviere que se la derriben y deshagan a su costa […]', Martín, 'Las Ordenanzas viejas de Badajoz', article 25, p. 253.

[54] Supremo Consejo de Castilla, *Ordenanzas de la muy noble y muy leal ciudad de Badajoz* (Madrid: Sanz, 1767).

[55] 'Puso despues la Orden de Calatrava por gobernador en esta villa a Don Fernándo Gómez de Guzmán, comendador mayor en ella a quien por sus tiranías y desafueros le dieron sus vecinos sangrienta muerte en el año 1476 […] bolvieron después a avecimarse algunos cavalleros hijosdalgo, pero la dicha villa les negó el aprovechamiento de pastar con sus ganados en la dehesa boyal del concejo […]', *Diccionario de Tómas López (1792)*, Biblioteca Nacional de Madrid, sección Manuscritos, Mss. 7294, folios 441–2.

[56] José Manuel Llorente Pinto, 'El problema de la sostenibilidad de las dehesas a la luz de la evolución histórica de los terrenos adehesados', *Actas de la II Reunión sobre Historia Forestal, Cuaderno de la Sociedad Española de Ciencias Forestales* 16 (2003): 136.

[57] A.T. Grove and Oliver Rackham, *The Nature of Mediterranean Europe: An Ecological History*, (London: Yale University Press, 2001), pp. 201–2; Julius Klein, *The Mesta: A Study in Spanish Economic History (1273–1836)* (Harvard: Harvard University Press, 1920).

[58] Vincent Clément, *De la marche-frontière au pays-des-bois. Forêts, sociétés paysannes et territoires en Vieille-Castille (XI^e^-XX^e^ siècle)* (Madrid: Casa de Velázquez, 2002), pp. 144–50. See also Vincent Clément, 'Les grandes pinèdes au sud du Duero: l'archéologie des paysages au secours d'une origine controversée', in E. Fouache (ed.), *The Mediterranean World Environment and History*, Working Group on Geo-archeology Symposium Proceeding (Paris: Elsevier, 2003), p. 211.

[59] Antonio Floriano Cumbreño, *Documentación histórica del Archivo Municipal de Cáceres (1229–1471)* (Cáceres: Institución cultural El Brocense, 1987), document 9.

[60] Cumbreño, *Documentación histórica del Archivo Municipal de Cáceres*, document 71.

[61] Cumbreño, *Documentación histórica del Archivo Municipal de Cáceres*, document 103.

[62] Julián Clemente Ramos, 'Explotación del bosque y paisaje natural en la Tierra de Plasencia (1350–1550)', in R. Uriarte (ed.), *IX Congreso de Historia Agraria*, (Bilbao: Universidad del País Vaco, Departamento de Historia e Instituciones Económicas, 1999), p. 449; Julián Clemente Ramos, 'La organización del terrazgo agropecuario en Extremadura (siglos XV–XVI)', *En la España medieval*, 28 (2005): 66–70.

[63] Marcelino Cardalliaguet Quirant, *Sociedad y territorio en la historia de Extremadura* (Cáceres: Diputación Provincial, Intitución cultural El Brocense, 1999), p. 26.

[64] These borders were broadly named *thugûr* (singular, *Tâgr*). Extremadura was named *Al-tâgr-al-Djawfî*, which was part of the Lower Marsh. About the relationship between forest and border in the Middle Ages, see: Vincent Clément, 'La frontera y el bosque en el medievo. Nuevos planteamientos para una problemática antigua',in P. Segura Artero (ed.), *La frontera oriental nazarí como sujeto histórico (siglos XIII–XVI)* (Almería: Instituto de Estudios Almerienses, 1997), pp. 329–37.

[65] Bishko, 'The Castilian as Plainsman', p. 48.

[66] Cumbreño, *Documentación histórica del Archivo Municipal de Cáceres*, document 81.

[67] Cumbreño, *Documentación histórica del Archivo Municipal de Cáceres*, document 93.

[68] Martín, 'Las ordenanzas viejas de Badajoz', article 6, p. 248.

[69] Martín, 'Las ordenanzas viejas de Badajoz', article 4, p. 247.

[70] Vassberg, *Land and Society in Golden Castile*, p. 81.

[71] Jules Goury du Roslan, *Essai sur l'histoire économique de l'Espagne* (Paris: Guillaumin, 1888), p. 232.

[72] Jean-Paul Le Flem, 'Las cuentas de la Mesta (1510-1709)', *Moneda y Crédito* 121 (1972): 68.

[73] Angel García Sanz, 'El siglo XVIII: entre la prosperidad de la trashumancia y la crítica antimeseteña de la Illustración (1700–1808)', in G. Anes and A.G. Sanz (eds.), *Mesta, trashumancia y vida pastoril* (Valladolid: Sociedad V Centenario del Tratado de Tordesillas, 1994), p. 139.

[74] García Sanz, 'El siglo XVIII: entre la prosperidad de la transhumancia', pp. 154–5.

[75] André Fribourg, 'La transhumance en Espagne', *Annales de Géographie* (1910): 235.

[76] 'Las ordenanzas de Mengabril (1548)', transcription of Julián Clemente Ramos, *Revista de Estudios Extremeños* 2 (2004): 630.

[77] Clemente, 'Las ordenanzas de Mengabril', p. 635.

[78] Clemente, 'Las ordenanzas de Mengabril', p. 645.

[79] Carlos Gregorio Hernández Díaz-Ambrona, 'La dehesa extremeña', *Revista de Agricultura* 750 (1995): 37–41.