

SOME COMMENTS ON THE INTRODUCTION OF DOMESTIC FOWL IN IBERIA

por

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RESUMEN: El trabajo presenta una cronología resumida de la aparición y dispersión de la Gallina en la Península Ibérica al tiempo que especula con las consecuencias de esta introducción con la depredación de Galliformes silvestres endémicas, en especial la Perdiz Común.

PALABRAS CLAVES: ARQUEOZOOLOGIA, GALLINA, PENINSULA IBERICA, EDAD DEL HIERRO, INTRODUCCION, DISPERSION

SUMMARY: The paper critically discusses an updated chronology of chicken remains on Iberian sites, speculating on the consequences of the introduction of this species on local wildfowl populations in particular those of the red-legged-partridge.

KEYWORDS: ARCHAEOZOOLOGY, CHICKEN, IBERIAN PENINSULA, IRON AGE, INTRODUCTION, DISPERSION

I. INTRODUCTION

Though most authors nowadays agree that it is during the Iron Age that the main dispersion of chickens takes place in Western Europe, recent evidence indicates that domestic fowl was already present in some areas of this continent during the Late Neolithic and early Bronze Age (THESING, 1977; CRAWFORD, 1984; WEST & ZHOU, 1988).

Being an introduced species, chickens can be easily detected in most archaeological sites from local european galliforms despite size variations which, fortunately, occur mainly during historic times (THESING, op. cit.). The most important drawback for establishing a reliable chronology of domestication and dispersal remains with de-contextualized finds or bones of doubtful age.

Meanwhile, the impact of domestic fowl on local avifaunas has not been monitored yet though this probably has to do, among other things, with the use that people gave to chickens.

Our paper has two aims: the first one is to present an updated critical chronology of chicken introduction and dispersal in the Iberian peninsula. The second aim is to briefly comment on the fate of spanish wild fowl, in particular of red-legged- partridge (*Alectoris rufa*) hunting, after the appearance of chickens.

II. MATERIAL AND METHODS

Archaeornithology is a comparatively new field of spanish archaeozoological analysis. For this reason many of the data that constitute the basis of our contribution are either unpublished works or papers under preparation and in press. Despite this, the number of protohistoric sites in which bird remains have been found is sufficiently large to carry out a comparative analysis to see whether or not any pattern emerges (Table 1).

Since most of the bone reports (i.e. 17) have been carried out at our laboratory, data should be as homogeneous as possible. In the case of doubtful identifications, if the remains were available, they have been re-studied.

The statistical routines carried out can be found in FOWLER & COHEN (1986). The values of Figure 2, from HERNANDEZ & MORALES (unpublished) are based upon 41 sites with more than 10 identified bird remains ranging from the Neolithic to the Middle Ages. The information has been standarized with the following index:

$$I = NR(A)/NRT \times ES$$

NR(A), number of remains of species A in a given period.

NRT, total number of identified bird remains in that period.

ES, number of sites of that period with remains of the species A.

III. RESULTS AND DISCUSSION

Table 1 presents a complete list of sites where chicken remains have been identified from Iron Age or earlier.

With the data at hand it is very doubtful to argue for a presence of chickens in Iberian sites prior to the Iron Age.

PERIOD	REFERENCES	DATE (B.P.)	NR
FIRST IRON AGE			
1. SACAOJOS	DRIESCH & BOESSNECK (1980)	11th - 6th	0
2. SOTO DE MEDINILLA	HERNANDEZ (UNPUBLISHED)	8th - 5th	0
3. SAN ANTONIO	HERNANDEZ (UNPUBLISHED)	7th - 6th	0
4. REILLO	HERNANDEZ (UNPUBLISHED)	8th - 5th	0
5. MEDELLIN	MORALES (1977)	6th - 5th	0
6. PUERTO 6	AGUILAR & HERNANDEZ (1989)	700/725 - 650	0
7. PUERTO 10	HERNANDEZ (UNPUBLISHED)	8th - 5th	0
8. TORRE DE DOÑA BLANCA	JHONSSON & HERNANDEZ (IN PREPARATION)	9th - 8th	3
9. TOSCANOS	BOESSNECK (1973)	8th - 7th	3
10. CERRO DE LA TORTUGA	UERP MANN & UERP MANN (1973)	6th	9
SECOND IRON AGE			
11. LA HOYA	ALTUNA & MARIEZKURRENA (1983)	450 - 350	1
12. SANTA ANA	MIGUEL & MORALES (1983 & 1986)	4th - 3th	9
13. UCERO	MIGUEL (UNPUBLISHED)	4th - 2th	2
14. LOS CASTELLAZOS	HERNANDEZ (UNPUBLISHED)	4th - 2th	2
15. ALORDA PARK	HERNANDEZ (IN PRESS)	4th - 2th	8
16. CERRO REDONDO	HERNANDEZ (UNPUBLISHED)	4th - 3th	0
17. REILLO	HERNANDEZ (UNPUBLISHED)	4th - 2th	1
18. BARCHIN DEL HOYO	MORALES (1981), MIGUEL & MORALES (UNPUBLISHED)	210 - 320	185
19. EL AMAREJO	AGUILAR (IN PRESS)	3th	40
20. LOS PALACIOS	DRIESCH & BOESSNECK (1980)	4th - 2th	6
21. CASTELLONES DE CEAL	MORALES ET ALLI (1991)	4th	EGGSHELLS
22. CERRO MACARENO	AMBERGER (1985)	4th - 2th	2
23. LA TIÑOSA	MORALES (1978)	4th	0
BRONZE AGE			
24. CERRO DEL REAL	DRIESCH (1972)	POST -ARGAR	7
25. CERRO DE LA VIRGEN	DRIESCH (1972)	2000 - 1200	2
26. ZAMBUJAL	DRIESCH & BOESSNECK (1976)	2000 - 1600	2
COPPER AGE			
27. VALENCINA DE LA CONCEPCION	DRIESCH (1982)	2100	1
NEOLITHIC			
28. LUMENTXA	GALLIARD IN ALTUNA (1972)	NEOLITHIC	?
PALEOLITHIC			
29. SANTIMAMIÑE	LOWE (1933)	AZILIENSE	1
30. CINGLE VERMELL	VILA I MITJA (1985)	9760 +/- 160	?

TABLE 1 -List of Iberian sites from Iron Age with bird remains and sites earlier than Iron Age in which chicken remains have been cited. Site numbers are the same as in Figure 1, NR (number of remains) refer exclusively to chicken remains.

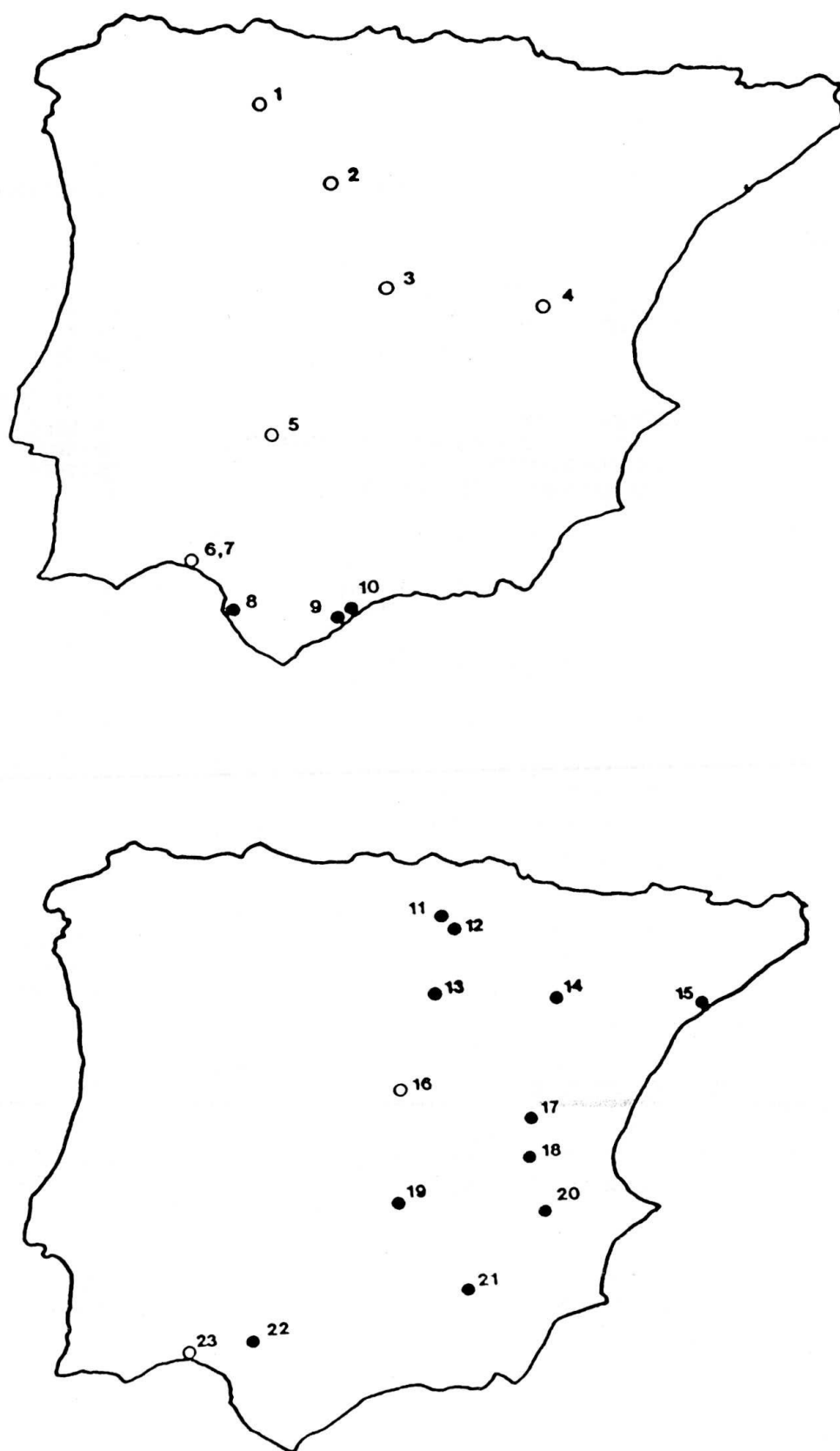


FIGURE 1 -Geographic location of Iron Age sites with bird remains. A: First Iron Age. B: Second Iron Age. Black dots indicate sites where chicken remains have been positively identified. Numbers identify the sites according to the code provided in Table 1.

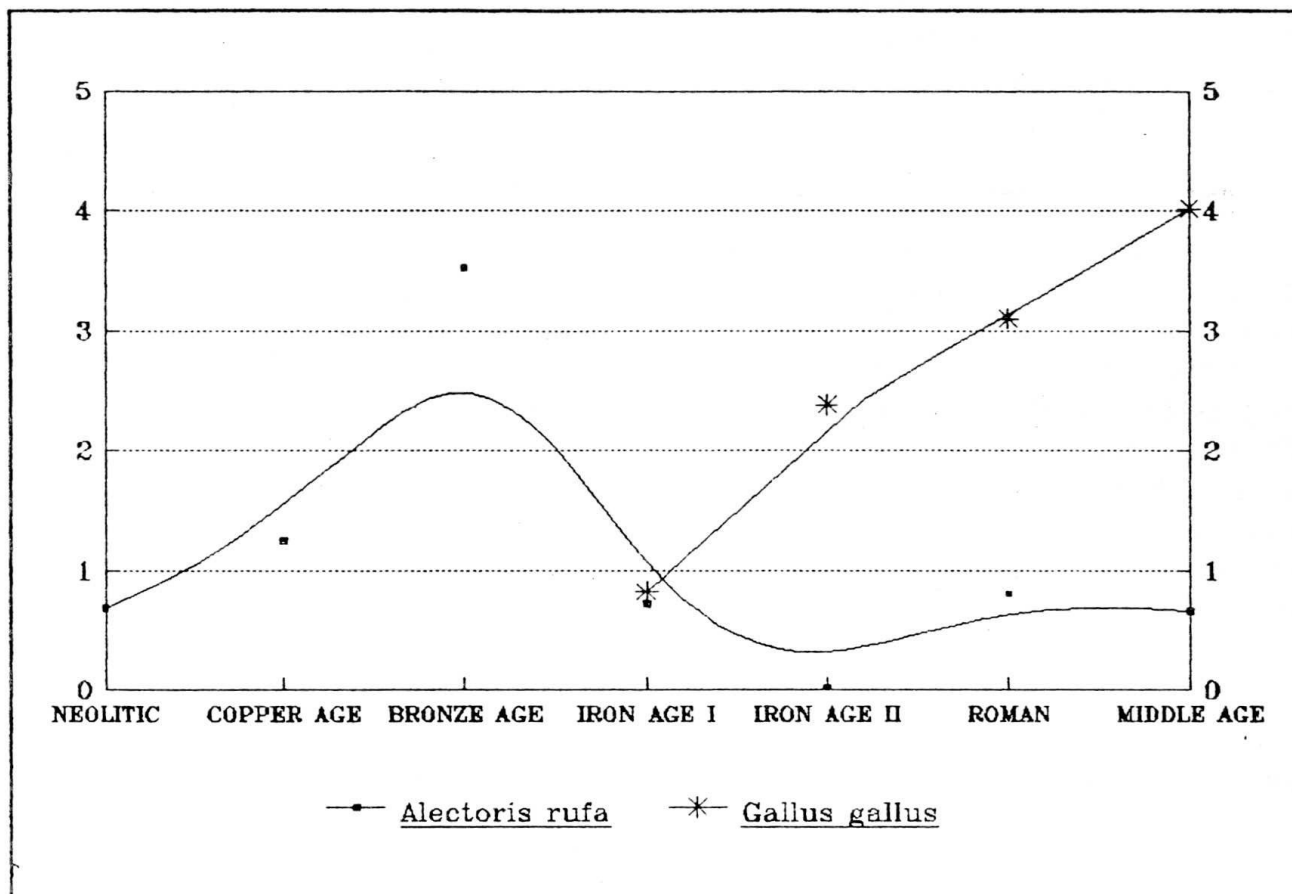


FIGURE 2 -Relative importance (see text for explanations regarding the index used) of chicken and red-legged-partridge in Holocene sites from the Iberian Peninsula (after HERNANDEZ & MORALES, unpublished).

With the data at hand it is very doubtful to argue for a presence of chickens in Iberian sites prior to the Iron Age.

In this way, we have been able to check that Paleolithic, Neolithic and Bronze Age sites or levels where *Gallus* remains have been cited are either intrusions of recent material (Santimamiñe, LOWE (1933); Lumentxa, GAILLARD in ALTUNA (1972); Cerro del Real and Cerro de la Virgen, (DRIESCH, 1972), BOESSNECK (1973); Zambujal, DRIESCH & BOESSNECK (1976); Valencina de la Concepción, DRIESCH (1982)) or typographical errors. Such is the case of the Paleolithic site of Cingle Vermell, where VILA I MITJA (1985) refer to *Gallus* when the original report of VILETTE (1983) does not mention the taxon at all.

Within Iron Age sites we can see a most peculiar pattern emerging if one subdivides these into the two phases recognized in Spanish protohistory (that is, prior to, or after, the 5th century BC; Table 1 and Figure 1). In this way, during the first half of the Iron Age, chicken remains appear only in Phoenician sites or in sites where Phoenician influence has been demonstrated. The chronology of these finds proceeds from the oldest to the younger ones as one moves from the west eastwards, a pattern which

looks opposite to the intuitive spread of phoenician colonies along the spanish coastlines, but which could be nevertheless "real" (i.e. logical) if one believes cultural hypothesis whereby phoenicians in their colonyzing of Southern Spain were mainly looking for Tartessian cities (all west of the Strait of Gibraltar) to provide them with metals, in particular, silver (AUBET, 1987).

At present, this phoenician introduction of chickens, already postulated by DRIESCH & BOESSNECK (1985), invalidates the hypothesis of a continental dispersion of domestic fowl into Iberia from eastern Europe. For the moment, the oldest reliable date of chickens on Iberian soil is that of the site of Castillo de Doña Blanca, in the Bay of Cadiz (Fig 1A, 8). The pattern of chicken distribution here is very peculiar: chickens appear in the oldest layers (dated at the very base of the 8th century, RUIZ MATA, *ve:b.com.*), but dissappaer in the following levels and do not reappear until well into the 6th century BC. The pattern, also followed by another introduced species, the donkey (*Equus asinus*) points towards an early wave of immigrants whose livestock did not manage to establish itself in the new land from the start, a pattern most coherent with other models of colonizations in biogeography (BROWN, 1988).

In contrast with this pattern, during the second half of the Iron Age the presence of chickens throughout the Peninsula speaks of an almost instantaneous spread of the species in Iberia, a pattern also recorded on most colonization events once a certain "threshold level" is reached (BROWN, *op.cit.*).

The spread of domestic fowl in Iberia during the Second Iron Age lead to a significant increase of bird remains in archaeological sites. The average proportion of birds remains in sites from this period (4.12%, n=9) is significantly higher than the values for the First Iron Age (0.51%, n=6), ($U=1$, $p < 0,05$, Mann-Whitney U-Test). Domestic fowl seems to be the only reason for this increase, as it represents 83.6% of the amount of bird remains identified in these assemblages (n=305).

Red-legged-partridge has always been a potential candidate for domestication in the Iberian peninsula, since it fits almost all criteria for such a task: very prolific (two clutches yearly with over 15 eggs each); very adaptable to open environments in particular agricultural landscapes; a grass-seed eater and an adequate behaviour for a future domesticated animal (gregarious and hierarchical). Above this, the size of the animal (34 cm, 500-750 g) is very similar to that of the domestic fowl's agriotype (JOHNSGARD, 1986).

Figure 2 shows how *Alectoris rufa* becomes less important in archaeological bird assemblages once chickens appear in Iberia. This "replacement" is already so evident by the second half of the Iron Age and one is tempted to speculate to what degree might both patterns be causally related. Though it is obvious that more data are needed to validate any hipotesis, at this stage we want to just leave open the question of whether chicken introduction actually prevented the eventual domestication of our partridge, something which did not happen in the case of another iberian endemism, the rabbit (*Oryctolagus cuniculus*) simply because no equivalent domesticated counterpart of it was ever introduced in the Peninsula.

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