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Masseti, Marco

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# Notes on the diffusion in Sicily of the roe deer *Capreolus capreolus* (L., 1758) (Mammalia, Cervidae)

MARCO MASSETI

*Dipartimento di Biologia Evoluzionistica dell'Università di Firenze,  
via del Proconsolo 12, 50122 Firenze (Italy); e-mail: marco.masseti@unifi.it*

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## SUMMARY

For some time there has been debate within the Sicilian scientific community regarding whether or not the roe deer, *Capreolus capreolus* (L., 1758), belonged to the original faunal horizons of Sicily. The main reason for this is that there are practically no palaeontological records of the species, with only a handful of known finds among the Mesolithic faunal remains yielded by exploration of the Riparo di Sperlinga and among those of the Castellucian Bronze Age (1800-1400 BC). On the other hand, there exists a particularly rich documentation for the Classical Age site of Montallegro (Agrigento), for chronologies that can be referred to the first century AD. The fact is, however, that from a biogeographical point of view there is no reason to exclude *a priori* a possible penetration of the species in Sicily: this could have taken place at the time of the entry of the other continental mammalian megafauna that characterised the so-called "Stadio di Castello" (Lorenzini et al., 2002). This study examines the possible presence of the roe deer in the original fauna of Sicily in the light of the information available, also considering the various importations documented at different historic times.

## INTRODUCTION

The diffusion of the roe deer *Capreolus capreolus* (L., 1758), in the Upper Pleistocene-Holocene of Sicily is still the subject of intriguing debate. This study examines the possible presence of the species in the original fauna of the island in the light of the information available, also considering the importations that took place at different historic times.

The presence of the cervid in the fossil horizons of Sicily was, for example, noted by De Gregorio (1924-1925) but was not confirmed by subsequent finds, and hence according to Burgio (1997) is to be deemed inaccurate. Villari (1995) is instead of the opinion that the roe deer - also described albeit with just a few finds in a single site on the island by Cassoli (1971), namely in the Mesolithic deposit of the Riparo della Sperlinga of San Basilio, Novara di Sicilia, Messina - is instead absent from western Sicily (cf. Tagliacozzo, 1993) and rare in the

eastern portion of the island. Strobel (1893) too noted the presence of the species in the Bronze Age (1800-1400 BC) of Castelluccio (south-eastern Sicily). The presence of roe deer on the island in the Pleistocene is however dubious, and in fact tends to be excluded, although not on the basis of certain data. Effectively there are no biogeographical elements such as to rule out the possibility of penetration by the taxon in concomitance with the entry of the other continental mammal megafauna that characterised the so-called “Stadio di Castello” (Burgio, 1977; Lorenzini et al., 2002). According to Villari (1995): “*The attribution of this rarity to phenomena of various kinds, such as selective hunting activities linked to cultural factors, or environmental motives or competition with the red deer, does not appear convincing.*” In general, however, it should be observed that in the Italian contexts of the late Upper Pleistocene-Holocene the roe deer is a *taxon* that is almost always represented by scanty remains despite being recorded with a certain frequency (Masseti et al., 1995; Masseti, 2003). In most cases it could be the very ecological features that explain the modest entity – if not actual absence – of osteological fragments of this not very gregarious and extremely territorial species in the anthropozoic deposits.

#### ROE DEER FROM HISTORICAL TIMES

Nevertheless, there seems to be no doubt about a multiple importation of the species that took place on the island in historic times, also continuing in recent periods. Studies and finds of an archaeozoological nature relating to the Sicilian roe deer are however scarce even as regards historic age materials. In the current state of knowledge, particularly significant historic documentation exists only at the archaeological site of Montallegro (Agrigento) for chronologies referring to the first century AD (Wilson, 1990; Morris et al., 2002), however we cannot know whether we are dealing here with animals originating from Sicily or imported by man. Several centuries later, the presence of the species appears to be again attested with certainty between the 11<sup>th</sup> and the 12<sup>th</sup> century among the food remnants of the settlement of Brucato (Termini Imerese) (Bossard-Beck, 1980; Bossard e Beck, 1984). In this mediaeval site the remains of roe deer, however, account for only 2.65% of the total osteological fragments attributed to large and small game. The certain presence of the cervid within the excavation materials of Brucato has been further confirmed by the discovery of a portion of antler (Fig. 1). According to Bresc (1980), roe deer were marketed both in Palermo and Catania in medieval times (Masseti, 2009). Sarà (1999) hypothesises a major phase of importation of the species for hunting purposes in the centuries following the turn of the first millennium: “*In the absence of historiographical finds and information, we must therefore assume a continuity in the population of roe deer, since we are obliged to make a leap of ap-*

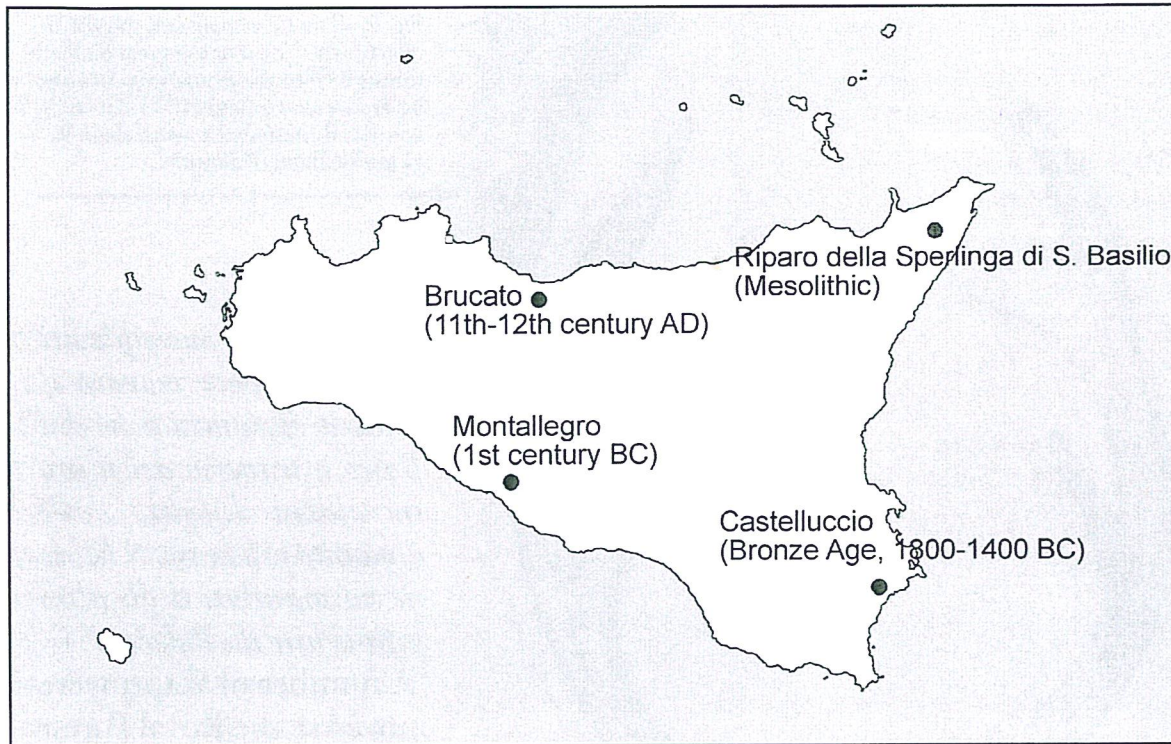


Fig. 1 – Archaeological sites in Sicily that have yielded osteological remains of roe deer.

proximately 600 years to arrive at the reports of Minà Palumbo who cites it as already being on the brink of extinction in 1858, recounting a hunt in the woods of Castelbuono.” In effect, we have two indirect proofs of the diffusion of the roe deer in Sicily in the early part of the eighteenth century, when the naturalist Francesco Cupani illustrated the antlers of two exemplars of the species in the tables of his *Panphyton Siculum: Cervus etnicus* and *Cervus magnarū sylvarū Sicilia* (that is “deer of the great Sicilian forests”), respectively in tables 473 and 643, vol. III, in the Biblioteca Centrale della Regione Siciliana, Palermo (cf. Pastena et al., 2003; Masseti, 2011) (Fig. 2). Through the illustration of Cupani appears in fact to be indicating the, possibly still numerous, woods and forests of his time as among the environments frequented by the roe deer in Sicily. According to Sarà (1999) these areas were predominantly in the mountains of Madonie and Caronie, as well as: “... a few other feuds and hunting reserves in the wooded regions of north-eastern Sicily”.

Almost a century later an interesting document dated 1815, conserved in the State Archives of Naples informs us of the practice that was still in use at the Bourbon court of transferring contingents of game from one part of the kingdom to another, and in particular of the relocation of a group of roe deer (*caprj*) from Palermo to Capodimonte (Naples): “*Parecchi Caprj furono posti nel Real Bosco di Capodimonte in tempo della passata occupazione militare, e si*



Fig. 2 – The *Cervus magnarū sylvarū Sicilia* (or the “deer of the great Sicilian forests”) from the *Panphyton Siculum* by Francesco Cupani (1713: tav. 643, vol. III, Biblioteca Centrale della Regione Siciliana, Palermo).

*sarebbero colà moltiplicati se non avessero trovato il modo di slanciarsi fuori dal Bosco attraverso del muro in alcuni luoghi, dov'è alquanto più basso. S.M. ce ne ha mandati degli altri fatti venire da Palermo* (= “A number of Caprj were moved to the Royal Forest of Capodimonte at the time of the past military occupation, and they would had multiplied themselves if they didn't find a way of escaping from the forest at points where the wall was considerably lower. His Majesty therefore sent us others which he had brought from Palermo”)

(Capodimonte, 01-11-1815. Archivio di Stato di Napoli. Archivio Casa Reale Amministrativa. Real Balestreria later Direzione delle Reali Cacce. Busta 547; Registro degli Ordini del Cacciatore Maggiore. De rapporti, e Relazioni al medesimo. 1815, p. 20). The Palermo hunting park in which the roe deer were kept may possibly have been that of the Favorita, now comprised within the urban perimeter of the Sicilian capital, but nor can an identification with the Forest of Ficuzza, reorganised by Ferdinand IV of Bourbon from December 1799 on (cf. Dispenza, 1985-1987), be ruled out.

According to the evidence of the naturalist Minà Palumbo (1868), in the second half of the nineteenth century the roe deer was still “... *la delizia de'boschi, ove prima era comune, e se ne videro sino a 15 riuniti nella Colla di Isnello sulle Madonne, e di frequente s'incontrava ne' boschi di Montaspro, di*

*Baronia, di Maletto, ora si trova accidentalmente, e continuando la strage quanto prima sparirà dalle nostre selve*” (= “... the delight of the woods, where previously it was common, and you could see up to 15 gathered on the Colla di Isnello on the Madonne, and would frequently encounter them in the woods of Montaspro, Baronia and Maletto, now you only find them occasionally and if the slaughter continues they will very soon disappear completely from our forests...”), while Doderlein (1872) reported that “*Quale rappresentante Siciliano dell’Ordine de’Ruminanti s’abbranca tuttora per le alte cime de’ monti e per i boschi qualche raro Capriolo (Capreolus vulgaris Lin.) sfuggito alla vigilanza di arditi cacciatori*” (= “As one of the the Sicilian representative of the Order of Ruminantia you can still find some rare roe deer (*Capreolus vulgaris* Lin.), which have managed to escape the wary clutches of the dauntless hunters, clambering up the high peaks of the mountains or running through the woods”). On 13 May 1874, Lord Lilford noted that during a discussion he had with Doderlein at the University of Palermo, the latter had told him that there were still some roe deer to be found in the forests of Sicily, although they had by then become quite rare (Trevor-Batye, 1903). Effectively, the species appears to have become extinct on the island in the second half of the nineteenth century (Perco, 2003), after the animal had suffered a progressive rarefaction (Minà Palumbo, 1868; Doderlein, 1872, 1881). The roe deer has now been reared in Sicily in a special enclosure in the Parco dei Nebrodi, in the Miserella district of the municipality of Galati Mamertino, containing subjects originating from a breeding centre in Parma and, more recently, from the zoo of Varese (Parco dei Nebrodi, 2007).

#### CONCLUDING REMARKS

In the Italian territory several populations of the species are traditionally considered as “indigenous”: in the Tuscan Maremma (cf. Tassi, 1976; Mazzoni della Stella, 1990; Lorenzini et al., 2002); in the presidential reserve of Castelporziano, Rome (Perco, 1981); on the Gargano promontory (Foggia) (Festa, 1925; Ghigi, 1917, 1950; Perco, 1981, 1985; Apollonio e Trocchi, 1988), and in the Orsomarso mountains in Calabria to the south-west of Monte Pollino (Lehmann, 1973; Tassi, 1976; Perco, 1981, 1985; Calò e Perco, 1990; Calò et al., 1997). All these populations have been ascribed to the subspecies of the so-called Italian roe deer, *C. capreolus italicus*, formally described by Festa (1925) based on the examination of several specimens originating from Castelporziano, although Gentile et al. (2009) recently demonstrate that the population from Orsomarso also includes mtDNA haplotypes genealogically related to ones occurring in northern and central Apennine populations. We do not, however,

have any morphological description of the roe deer that populated Sicily in former times, even though it cannot be ruled out that the animals that may have naturally penetrated the island at the end of the Upper Pleistocene may have possessed the phenotypical characteristics of *C. capreolus italicus*. These patterns may possibly be described in certain illustrations from the *De arte venandi cum avibus* of Frederick II of Hohenstaufen (*fol. 4v*, EWI 9, 28-10; 12, 16-19/ÜWI 15-16, 18, e *fol. 11r* EWI 22, 33-23, 25/ÜWI 29-30 of the Codex Ms. Pal. 1071 in the Biblioteca Apostolica Vaticana) (Figure 3). The Codex Ms. Pal. Lat. 1071 in the Biblioteca Apostolica Vaticana which contains these illustrations undoubtedly originated in southern Italy (Willemsen, 1980), and certain scholars believe that the illuminated codex was actually produced in Sicily (cf. Daneu Lattanzi, 1965).

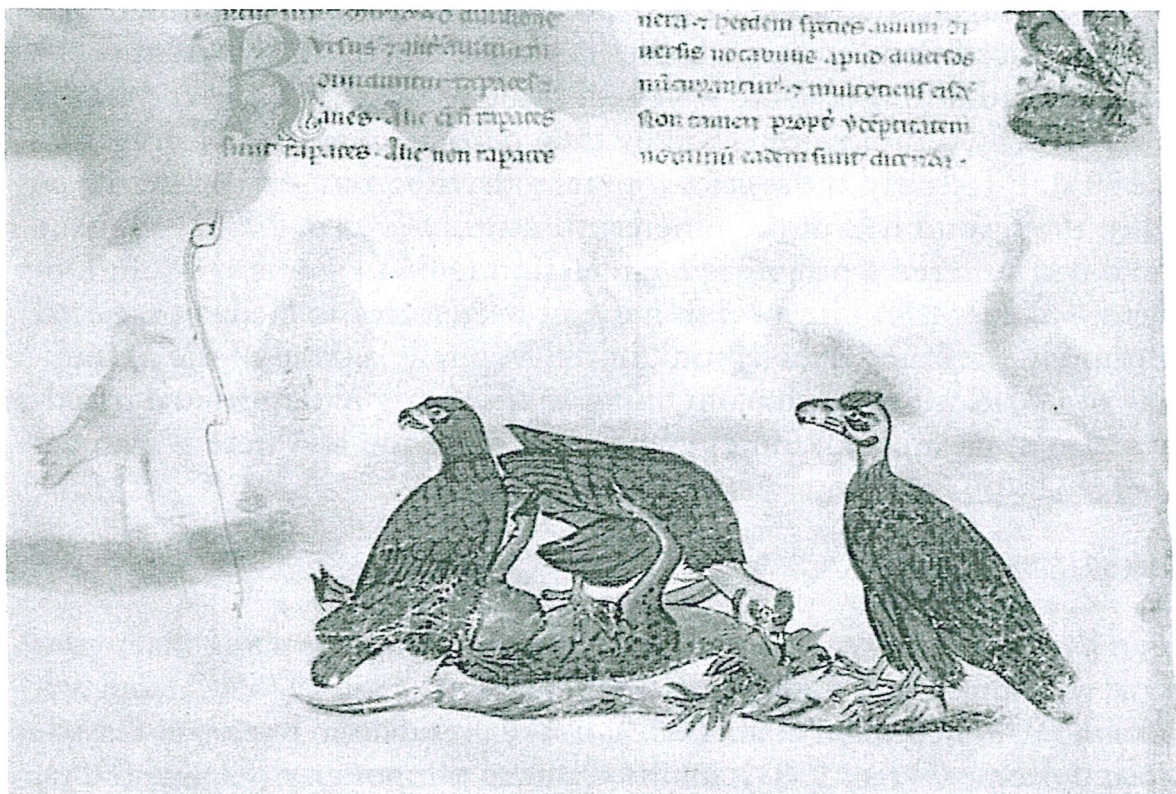


Fig. 3 – Dead adult male specimen of roe deer being devoured by a pair of black vultures, *Aegypius monachus* (L., 1766), and an eagle, in a detail of the illuminations from the *De arte venandi cum avibus* of Frederick II of Swabia (Codex Ms. Pal. 1071 in the Biblioteca Apostolica Vaticana: *fol. 4v*, EWI 9, 28-10; 12, 16-19/ÜWI 15-16,18).

Nevertheless, the awareness of the survival up to very recent times of allochthonous wild game of large dimensions in some of the Italian territories, where the diffusion of the Italian roe deer is still considered to be attested, raises serious questions about the origin of the current local mammalian fauna (cf. Breber e Masseti, 2007).

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