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The mammals in the scientific illustrations of the *Panphyton Siculum* by Francesco Cupani (18th century)

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SUMMARY

The *Panphyton Siculum* is an unfinished printed catalogue, drawn up in the eighteenth century by the Franciscan naturalist Francesco Cupani (21 January 1657 - 19 January 1710) with the principal purpose of illustrating the botanical riches of Sicily (Pastena et al., 2003). It also contains illustrations of many species of birds (Riggio, 1892a; Priolo, 1996), but few reptiles (Riggio, 1892b; Lo Valvo, 1998) and mammals (Riggio, 1893). The latter consist essentially of illustrations of the molar of an African elephant, *Loxodonta africana* (Blumenbach, 1797), a marten, *Martes martes* (L., 1758), an otter, *Lutra lutra* (L., 1758), the antlers of a European fallow deer, *Dama dama dama* (L., 1758), and the cranial appendages of two exemplars of roe deer, *Capreolus capreolus* (L., 1758).

The portrayal of these species raises a number of questions, some of which are still far from having been satisfactorily answered. The most important relates to the effective presence and diffusion of all these taxa – comprising the elephant – in the natural environment of Sicily in the eighteenth century.

INTRODUCTION

The *Panphyton Siculum* is an unfinished iconographic catalogue (Prain, 1918) drawn up by the Franciscan naturalist Francesco Cupani (21 January 1657 - 19 January 1710) and published posthumously in 1713 (Lanza, 2003). The main objective of the work was to illustrate the botanical riches of Sicily. It also comprises images of many species of birds (Riggio, 1892a, 1892b, 1893a; Priolo, 1996), but only a few of reptiles (Riggio, 1892c; Lo Valvo, 1998) and mammals. Works dealing with the latter are practically non-existent, except for a note by Riggio (1893b) which is moreover limited to indicating the presence of the only two species whose external morphology is portrayed in its entirety: the otter, *Lutra lutra* (L., 1758), and the marten, *Martes martes* L., 1758. Also Massa (2009) is among the very few authors who give a short account of the

mammals described by Francesco Cupani. The copy of the *Panphyton Siculum* conserved at the Biblioteca Centrale della Regione Siciliana in Palermo (which was consulted during research for this study) comprises, in addition to the two species mentioned above, illustrations of the molar of an African elephant, *Loxodonta africana* (Blumenbach, 1797), the antlers of a European or common fallow deer, *Dama dama dama* (L., 1758), and those of two specimens of roe deer, *Capreolus capreolus* (L., 1758).

DESCRIPTION OF THE SPECIES PORTRAYED

Lutra Sicula. Vtria. º *Itria vulgō* (= "Sicilian otter, popularly known as *vitria* or *itria*") (Cupani, 1713: vol. III, tav. 486) (Fig. 1).

Lutra Sicula Utria o Itría vulgo ... Lutra vulgaris, Erxl. (Riggio, 1893).

Otter, *Lutra lutra* (L., 1758). It is interesting to note that in modern Greek the mustelid is still referred to by the term βιδρα (*vidra*).

This is probably a mounted skin specimen. Cupani's inclusion of this species in the *Panphyton Siculum* raises a number of questions. The first of these concerns whether or not the otter was part of the Sicilian fauna at the time of the Franciscan naturalist. In fact, no remains of the species are recorded in the fossil fauna descriptions of Sicily (Burgio, 1997). Nevertheless a series of literary references does document their presence between the eighteenth and the nineteenth centuries (Recupero, 1815; Minà Palumbo, 1868; Doderlein, 1872, 1881; Ciaccio e Priolo, 1997; Sarà, 1999), especially in the south-eastern portion of the island, the Catania marshes, the rivers of the Hyblean plateau, the wetlands of Lentini and Gela and the Simeto estuary. Recupero (1815) in fact referred to the presence of the species in these areas, referring to it with the Sicilian vernacular term of *itria*, which as we have seen was also previously used by Cupani. Commenting on the work of Minà Palumbo (1868), Sarà (1999) observes that: "*The hydrographic network that stretched from the eastern regions of the Simeto as far as the estuary of the Imera Settentrionale river could have enabled certain individuals to travel as far as this river where they accidentally appeared. The report of the presence in the Monalo river (now the Pollina) is very interesting, that is in a hydrographic basin not in communication with the previous and with an ecosystem very similar to that of the numerous north-eastern rivers of the Nebrodi and Peloritani mountains*". It cannot be ruled out that the extinction of the mustelid in Sicily may have taken place around the mid nineteen-fifties, possibly as a consequence of the reclamation of the marshy regions of Sicily, which culminated in the destruction of the enormous biviere (*marsh*) of Lentini (Catania). Again according to Sarà (1999), this environment may have been the last Sicilian stronghold of the species. No museum remains that can be referred to Sicilian exemplars of the species are available (cf. Lo Valvo, 1999).

Fig. 1 – Otter, *Lutra lutra* (L., 1758), Cupani (1713: vol. III, tav. 486).

Martes mas. Marturina (Cupani, 1713: vol. III, tav. 563) (Fig. 2).
Martes mas Marturina … Martes martes Lin. (Riggio, 1893).
Pine marten, *Martes martes* (L., 1758).

In this case too we could be dealing with a mounted skin exemplar, put at the disposal of the author of the illustration.

The palaeontological research carried out to date in Sicily has not recorded the presence of any species of mustelid in the fossil horizons of the late Upper Pleistocene (Burgio, 1997). From a biogeographical aspect, however, there are no elements such as to exclude a possible penetration of the island by the marten

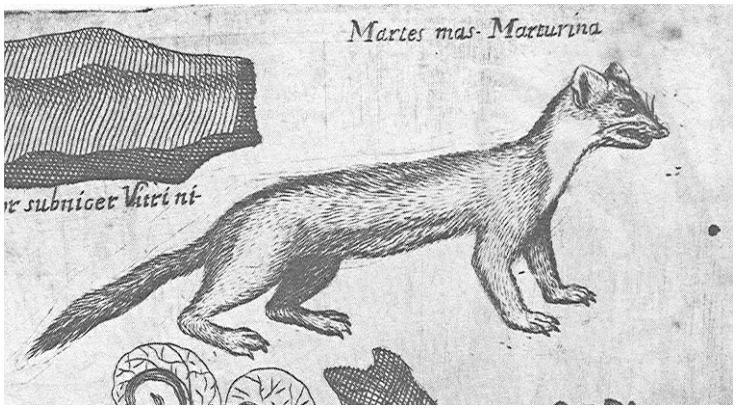

Fig. 2 – Pine marten, *Martes martes* (L., 1758), Cupani (1713: vol. III, tav. 563).

simultaneous with the invasion of other continental species which took place in the late Würm, in the faunal context of the so-called "Stadio di Castello".

In recent historical times, the presence of the species in the mammalian fauna of Sicily was reported by Lord Lilford who, on 13 May 1874, was able to observe a stuffed specimen in the museum of the University of Palermo, which was run at the time by Pietro Doderlein (Trevor-Battye, 1903). Today, the marten is still fairly widespread in Sicily, although detailed data are not available (Vigna Taglianti, 1988; Prigioni e De Marinis, 2003). The species appears to be located in the main mountain ranges (Madonie, Nebrodi, Sicani, Iblei), but has disappeared from various other areas that were previously wooded (Sarà, 1998). It is more common than was believed up to a few decades ago, when it was considered rare, but is nevertheless a species subject to poaching, as well as frequently being run over in road accidents (Sarà, 1999) (Fig. 3).

Cervs etnicus (Cupani, 1713: vol. III, tav. 473) (Fig. 4).

The specimen portrayed consists of the antlers of a specimen of roe deer, *Capreolus capreolus* (L., 1758), with highly developed pearling on coronet and beam.

Fig. 3 – Pine marten photographed in Iblean area (photo by Toni Puma).

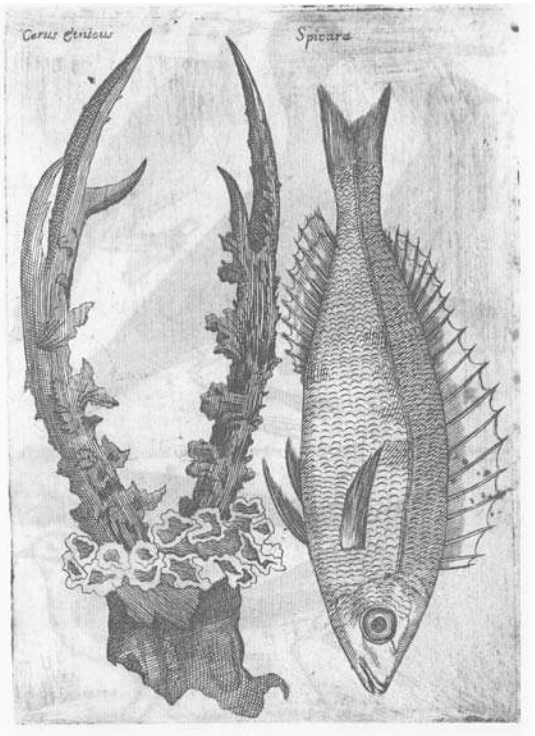

Fig. 4 – Roe deer antlers, *Capreolus capreolus* (L., 1758), with highly developed pearling on coronet and antler beam, Cupani (1713: vol. III, tav. 473).

The adjective *etnicus* is a term from ecclesiastical Latin translated into Italian as *pagano* (pagan). However it seems implausible that such an epithet could have been attributed to any type of cervid, so that we might surmise that here we are dealing instead with a new coining of the adjective *etnicus* or *aetnicus*, replacing the canonical *aetneus* with which Cupani intended to indicate a "deer of Etna".

The excess of excrescences characterising the antlers illustrated by Cupani, both on the coronet and on the beam, is not rare. However, although not extremely rare, these are nevertheless anomalous hypertrophic antlers.

According to Burgio (1997), the presence of the species in the Sicilian fossil horizons has yet to be confirmed. From a biogeographical point of view, however, there are no valid reasons for ruling out a penetration of the island by the cervid in the aforementioned "Stadio di Castello" faunal context (cf. Burgio et al., 1998; Lorenzini et al., 2002). The species was in any case extensively imported into Sicily for hunting purposes in even recent historical times. The roe deer appears to have become extinct on the island in the second half of the nineteenth century, and has now been reintroduced through exemplars originating from a deer farm in Parma and, more recently, from the zoo of Varese. These animals are kept in a special enclosure in the Parco dei Nebrodi, in the Miserella district of the municipality of Galati Mamertino (Parco dei Nebrodi, 2007).

Cervs magnarū syluarū Sicilia (or: *Cervs magnarum syluarum Siciliae* = deer of the great Sicilian forests) (Cupani, 1713: vol. III, tav. 643) (Figure 5).

Here too we are dealing with an illustration of the antlers of an exemplar of roe deer, *Capreolus capreolus* (L., 1758), although Massa (2009) erroneously identifies them as the cranial appendages of a red deer.

The interpretation of this drawing is, in fact, rather more complex than that of the previous one, since the specimen in question appears to have been drawn on a different scale from the antlers of the fallow deer shown alongside. The bases of the beams very close together and the amphora like conformation are both features characteristic of the antlers of the roe deer. The entire development of the antlers corresponds to that typical of the species. The different scale of the illustrations could possibly be attributed to an arbitrary interpretation of the original designs by the person who prepared the prints.

Dama Sicula (= Sicilian deer) (Cupani, 1713: vol. III, tav. 643) (Figure 5).

This is an antler, apparently right, of the common or European fallow deer, *Dama dama dama* (L., 1758).

Worthy of note in the drawing is the fairly realistic illustration of the beam, while at the base of the cranial appendage the description of the coronet is missing. Hence it would appear to be an antler that was cut off the cranium rather than having been naturally shed. The presence of this species in the original fauna of Sicily has at length been the subject of debate, although in the more recent past it would appear to be essentially the result of introductions for hunting purposes (Burgio et al., 1998). For the entire Arab-Norman period the fallow deer apparently represented an important cynegetic resource and, for this reason, was probably kept in areas reserved for the

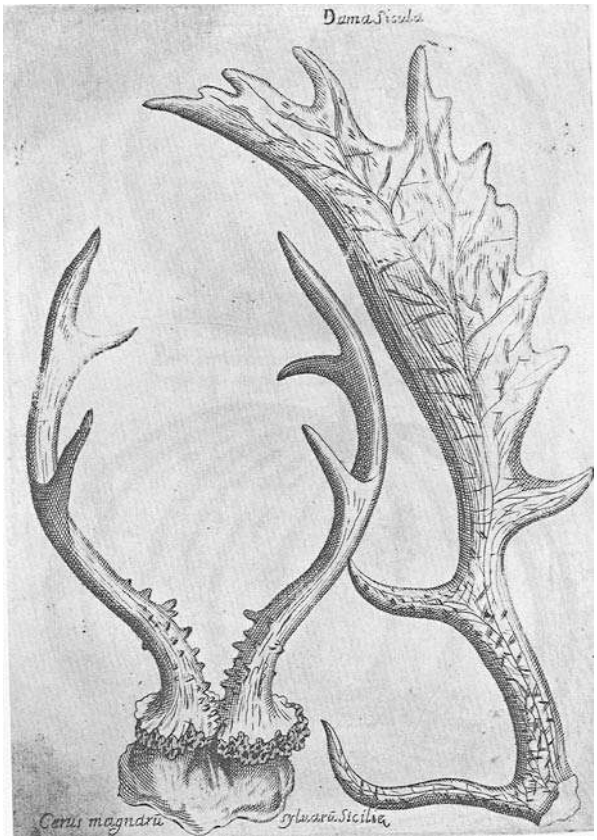

Fig. 5 – Antlers of roe deer, *Capreolus capreolus* (L., 1758), and common or European fallow deer, *Dama dama dama* (L., 1758), Cupani (1713: vol. III, tav. 643).

hunting of the nobles (Minà Palumbo, 1868; Doderlein, 1872, 1881; Trevor-Battye, 1903; Masseti, 2009). The species became extinct in Sicily in the first half of the nineteenth century, and has now been reintroduced – through exemplars originating from breeding centres in continental Italy – in various enclosed areas of State property in the province of Palermo (Ficuzza and Madonie) (Burgio et al., 1998).

Dentes molares animalis terrestris ignoti (= "Molar teeth of an unknown terrestrial animal") (Cupani, 1713: vol. III, tav. 579) (Figure 6).

African elephant, *Loxodonta africana* (Blumenbach, 1798).

This is the illustration of a second upper molar. The specific attribution is confirmed precisely by the lozenge-shaped plates which are, as usual, not very numerous (cf. Azzaroli, 1990). Hence the tooth is entirely unrelated to the straight-tusked elephant, *Elephas* (*Palaeoloxodon*) *antiquus* Falconer e Cautley, 1847, or to any other form derived from the same, such as *Elephas falconeri* Busk, 1867, or *E. mnaidriensis* Leith-Adams, 1871, both endemic to Sicily and Malta. The *Loxodonta* genus is instead exclusive to African biogeography. Cupani may have obtained this elephant tooth on the contemporary naturalistic and antiquarian collecting circuits in Sicily.

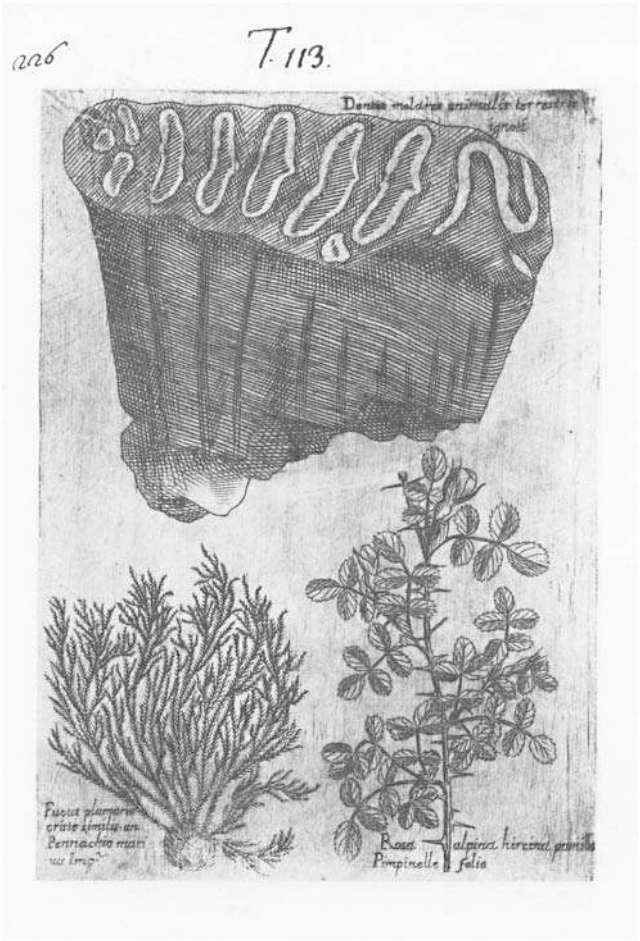

Fig. 6 – Second upper molar of African elephant, *Loxodonta africana* (Blumenbach, 1798), Cupani (1713: vol. III, tav. 579).

CONCLUDING REMARKS

6 exemplars of mammals, or portions of the same (comprising antlers and teeth) are described in the *Panphyton Siculum*, albeit for a total of only 5 species, since the roe deer appears twice. Riggio (1893), possibly deliberately, does not consider either the elephant molar or the cervid antlers. He also says very little about the two carnivores, restricting himself to confirming their respective taxonomic position. As is already known, in the particular case of the latter two exemplars, the models must have been stuffed specimens. We can deduce this quite clearly from the lack of vivacity of the illustration and also the improbable postures.

Some of the questions raised by the mammals represented in the *Panphyton Siculum* are still far from having been satisfactorily answered. The most important relates to the effective presence and diffusion of all the species portrayed in the eighteenth century Sicilian natural environment. In particular, the presence of the molar of an African elephant leads us to suppose that, where necessary, Cupani was not averse to dealing with even exotic species. The consequence of this is to cast doubt on whether the other species considered in the work also effectively belonged to the Sicilian fauna. This doubt might also possibly be extended to the representatives of other taxonomic categories present in the work, such as birds or reptiles.

It would appear, however, that Cupani was concerned to underscore the fact that certain of the species of mammals portrayed actually belonged to the Sicilian fauna of his times. In fact the author resorts to the use of specific attributes to indicate the geographical origin of *Lutra Sicula*, *Dama Sicula*, *Cervs etnicus* (*aetneus*?) and *Cervs magnar? syluar? Sicilia*. Moreover, the fact that the roe deer is illustrated twice in the *Panphyton Siculum* could be considered as a further confirmation of the Sicilian origin of all the antlers of the species represented.

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