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Homeless mammals from the Ionian and Aegean islands

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Abstract. The paper present information about several mammalian species reported erroneously from the Ionian and Aegean islands and the occurrence of stuffed specimens in museum collections which reveal intriguing stories about their origins, especially about the islands from which they were collected. According to scientific and popular literature, these islands were often not numbered among the original homelands, nor even the territories of the artificial distribution of the species. So it is almost impossible today to understand why and how certain specimens reached these islands, especially in the case of those which were dangerous predators for the livestock, and even humans. This is the case, for example, of the Asia Minor Leopard, *Panthera pardus tulliana* Valenciennes, 1856, which today figures among the collections of the Natural History Museum of the Aegean, in the village of Mytelenii on the island of Samos.

Keywords. museum specimens, Ionian and Aegean islands, continental mammals, Asia Minor leopard.

INTRODUCTION

Scientific travellers and other authors of the past have occasionally reported the diffusion on the Ionian and Aegean islands of several mammalian species today completely unknown among the relative faunal assemblages (Fig. 1). Werner (1928) for example quoted the occurrence of a kind of squirrel on the island of Skyros (Northern Sporades), where he collected a specimen between the villages of Skyros and Linaria which he recognized as *Sciurus lilaeus*. According to Ellerman & Morrison-Scott (1951), this taxon is used to define a Greek subspecies of the red squirrel, *Sciurus vulgaris lilaeus* Miller, 1907, characteristic of the region of Mount Parnassus in continental Greece. Nevertheless, the occurrence of the same species on Skyros was subsequently also recorded by other authors such as Wettstein (1942) or Cheylan (1988) in recent times. On the basis of the authority of Werner, and to an even greater extent that of Wettstein, it is very difficult to refute the truth of these reports, even if red squirrels are today completely unknown on Skyros and the other islands of the Aegean and Ionian basin. Perhaps with the exception of Euboea, the natural occurrence of these rodents is, even on the rest of the Mediterranean insular environments, practically unknown. Their presence on some of these islands, such as Veli Brijuni (Croatia) (Scotti 1980), is essentially regarded as a consequence of recent human intervention (Masseti 2005). Representatives of the genus *Sciurus* Linnaeus, 1758, occur also on Lesbos (Ondrias 1966; Hecht-Markou 1994, 1999; Gavish & Gurnell 1999; Thorington & Hoffman 2005) and the Turkish island of Gökçeada (Imbros) (Özkan 1995, 1999; Gavish & Gurnell 1999). These islands are, however, inhabited by another species of the genus, the Persian squirrel, *Sciurus anomalus* Gueldenstaedt, 1785, whose westernmost continental distribution extends to far-eastern Europe and western Anatolia (Gavish & Gurnell 1999). At the same time, however, there is no evidence to exclude the former diffusion of red squirrels on Skyros, where a population could have existed up to the first half of the 20th century, later becoming extinct. Red squirrels could have been imported by man onto the island from the nearby island of Euboea, where their presence was already reported by Lindermayer (1835). In the light of modern ethnozoological enquiry, it would also appear that red squirrels figure among those mammal species which have been the subject of particular human attention for a variety of cultural purposes. In the Levant, for example, people still eat Persian squirrels and live specimens are regularly sold in the markets (Mendelssohn & Yom-Tov 1999).

SPECIES ERRONEOUSLY REPORTED FROM THE IONIAN AND AEGEAN ARCHIPELAGOS

Travellers of the past have often erroneously reported certain mammalian species from the Greek islands. According to Lindermayer (1835), the blind mole *Talpa caeca* Savi, 1822, was dispersed on Euboea. However this 19th century report strikes a false note, since the species

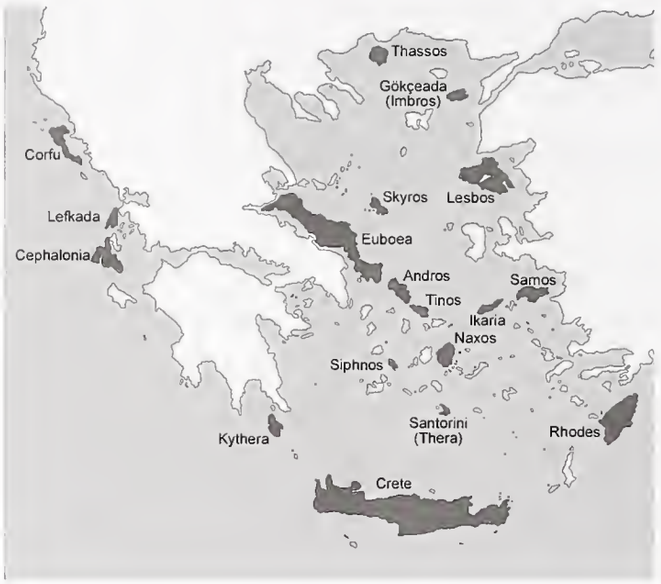

Fig. 1. Map with the locations of the Ionian and Aegean islands mentioned in the text.

is limited in its south-eastern European distributional range to the continental Balkan peninsula. No moles have ever been reported from the eastern Mediterranean islands, with the only exception of the Balkan mole *Talpa stankovici* V. Martino & E. Martino, 1931 on the islands of Corfu (Niethammer 1962, 1990; Kryštufek 1999a) and Cephalonia (Catsadorakis 1985; Giagia-Athanassopoulou 1998; Stamatopoulos, *in verbis*). Wettstein (1942) observed another species, the crested porcupine *Hystrix cristata* Linnaeus, 1758, but mentioned that local people referred to its presence on the Eastern Aegean islands of Ikaria and Lesbos. He (Wettstein 1942) added that this might have been the result of confusion with a hedgehog, the today dispersed Northern white-breasted hedgehog *Erinaceus roumanicus* Barrett-Hamilton, 1900 (Kryštufek et al. 2009). Effectively, the Greek term used to indicate the hedgehog is *skanzolhiros*, which means "spiny pig", which is probably the reason of a confusion with the English "porcupine" (and/or the Italian "porcospino" and the French "porc-épic"). Moreover, the common porcupine has never been reported from the Balkan peninsula (Masseti et al. in press), while the Indian crested porcupine, *Hystrix indica* Kerr, 1792 is known from Anatolia with an occurrence further east to the Near East, including Arabia, Kashmir, Nepal and through peninsular India to Sri Lanka (Harrison & Bates 1991). These publications are probably the baseline of several unproven reports. Cheylan (1988) still quoted the occurrence of "*Hystrix cristata*" (sic) on the Eastern Aegean islands of Rhodes, Ikaria and Lesbos. The occurrence of *Microtus subterraneus* (de Sélys-Longchamos, 1836) was reported from Euboea by Cheylan (1988), while Niethammer (1982) and Krystufek (1999b) mentioned it as absent from the entire Mediterranean coast and islands (see also Masseti 2009). A label without specimen, written by Ioannis C. Ondrias himself, in the mammal collection of the University of Patras (coll. no. 3158) reports the occurrence of the common vole *Microtus arvalis* (Pallas, 1779), from the area of Mytilene in south-eastern Lesbos. But, according to Stella Fraguedakis Tsolis (*in litteris* 13th July 2006), this species does not appear to exist or to have ever existed on this island. Furthermore, the specimen to which the label referred has unfortunately been lost. Contrary, the presence of Gunther's vole *M. guentheri* (Danford & Alston, 1880) is known from Lesbos (Stamatopoulos & Ondrias 1995), but according to Kryštufek & & Vohralík (2005) this is the only record from all Mediterranean islands so far.

THE INSULAR EDIBLE DORMICE

Erroneous evaluations, or rather inattentive reading of publications of early authors have supported cultural models which are still difficult to eradicate, e.g. the consideration of the diffusion of several species of glirids in the Greek islands. One example is the erroneously supposed occurrence of the forest dormouse *Dryomys nitedula* (Pallas, 1778). Erhard (1858) reported the occurrence of *Myoxus nitela* Schreber, 1782, a species of glirid, similar in name to the forest dormouse from Andros, Naxos and Siphnos, where it occurred in orchards and orange groves. This report supported the assumption that this rodent occurs on these islands, but in reality the taxonomic classification does not correspond to that of the forest dormouse. According to Ellerman & Morrison-Scott (1951) *Myoxus nitela* is indicated as one of the synonyms of *Eliomys quercinus* (Linnaeus, 1766; garden dormouse), a species currently unknown in the Aegean area and being widespread in the central-western Mediterranean basin. Here it is not found further east than Dalmatia and the northwestern Balkan Peninsula. Although according to Kryštufek (1999b), this forest dormouse does not occur on Mediterranean islands, Cheylan (1988) reported it from Euboea. Recently, the presence of the forest dormouse was reported on the island of Andros, which is still an unconfirmed record (Chondropoulos & Fraguedakis-Tsolis, *in verbis*). We have, on the other hand, known for some time of the presence of the edible dormouse on islands such as Crete (Zimmermann 1953; Kahmann 1959; Niethammer & Krapp 1978; Catsadorakis 1994), Euboea (Ondrias 1966), Corfu (Niethammer 1962; Niethammer & Krapp 1978) and Cephalonia (Niethammer & Krapp 1978; Catsadorakis 1985; Giagia-Athanassopoulou 1998). On the latter island, its occurrence has been recently confirmed by H. Pieper (*in litteris*), whereas Dimaki (1999) provided arguments for the existence of the species on Andros. According to H. Alivitzatos & A. Lane (*in verbis*), the ed-

ible dormouse is also present on the island of Thassos where they mentioned its occurrence in the surroundings of the village of Panaghia, on 30 August 2000. Wettstein (1942) reports the occurrence of a dormouse, possibly the forest dormouse, from Rhodes, but according to other authors the species is still unknown here (cf. Festa 1914; De Beaux 1929; Zimmermann 1953). A remarkable human impact on the geographical distribution of some dormouse species in the Mediterranean region was observed by Carpaneto & Cristaldi (1994), Colonnelli et al. (2000) and Masseti (2005). The population density can be documented since antiquity through historical and biogeographical analyses, supported by paleontological and archaeozoological data. Furthermore, ethnozoological enquiries document the utilisation of dormice for food or medicine, through traditional captive-breeding techniques, up to very recent historical times.

Fig. 2. Stuffed specimen of the badger *Meles meles* collected on the island of Santorini (Thera) in 1859, and part of the collection of the Zoological Museum of the University of Athens (ZMUA 128) (photo Anastasios Legakis; courtesy Zoological Museum of the University of Athens).

HOMELESS GREEK ISLAND CARNIVORES IN THE EUROPEAN MUSEUMS

Several European natural history museums conserve material collected on the Greek islands which create problems in the attempt to arrive at their origins. This is the case, in the lynx, *Lynx lynx* (Linnaeus, 1758), collected on the island of Corfu and part of the collection of the Museum Alexander Koenig in Bonn, registered under the collection number ZFMK 93423. The specimen was purchased by Jochen Niethammer during the mammalogical exploration of the island. But the occurrence of the lynx on Corfu was very questionable and immediately resolved by the collector himself. Niethammer reported that he had bought it at the market, where he had been told that it originated from northern Greece, more specifically from Macedonia. In other cases specimens represent species which are in fact completely unknown to the islands which they are reported to originate from. In some cases, species have recently become extinct, like jackals from Corfu represented in the collections of the Museum Koenig (ZFMK 61193, 93420). Dispersed in the Balkan and Anatolian peninsulas, the Golden or Asiatic jackal *Canis aureus* Linnaeus, 1758 has been reported from Corfu (Niethammer 1962; Douma-Petridou 1977; Adamakopoulos et al. 1991; Demeter & Spassov 1993), Cephalonia (Demeter & Spassov 1993), Lefkada (Douma-Petridou 1977; Demeter & Spassov 1993) and Kythera (Jameson 1836, 1937), while other authors mentioned its occurrence on Ikaria (Atanassov 1955) and Skyros (Werner 1928; Wettstein 1942; Atanassov 1955). Ioannidis & Giannatos (1991) surveyed with positive results the island of Samos where jackals exist in the same habitats as in the rest of the southern Balkan Peninsula. Following the account of the expedition to the Greek archipelago published by the botanist Joseph P. de Tournefort (1717), Clarke (1801) observed that "*Samos is infested with wolves*". Anyway, this record should refer to jackals rather than wolves. There is in fact no evidence for the occurrence of the latter canides on the Greek islands of the late Holocene. According to Ioannidis & Giannatos (1991), the jackal no longer exists on Corfu, Kythera, Skyros and Ikaria, where it possibly became extinct in very recent historical times, but jackals vanished from Corfu not before 1991–1992 (Grémillet, *in verbis*). The only Aegean islands where the species still survives are Euboea (Demeter & Spassov 1993) and Samos (Laar & Daan 1967; Douma-Petridou 1977; Adamakopoulos et al. 1991; Ioannidis & Giannatos 1991; Demeter & Spassov 1993; Ioannidis et al. 1996; Dimitropoulos et al. 1998).

Among the collections of the Greek museums, there are several specimens that provoke questions which are still far from having been satisfactorily answered. For example, there is a stuffed badger, *Meles meles* (Linnaeus, 1758) today on display at the Zoological Museum of the University of Athens (ZMUA 128, Fig. 2) and collected on the island of Santorini (Thera) by K. Bassiliou in 1859. This specimen is intriguing because of the old age and it is the only record of the badger from this island. According to Schmalfuss (1991) the species is today unknown from Santorini. If the origin of the ZMUA specimen is correct, the species must have become extinct around the end of the nineteenth century because Douglas (1892) did not mention the badger in his list of the insular mammals. Santorini should therefore be added to the distribution areas of the badger within the Aegean islands. Known in Greek as *asvós*, the badger was recorded from Cephalonia (Catsadorakis 1985), Rhodes (Festa 1914; Tortonese 1973) and Crete (Raulin 1859; Barrett-Hamilton 1899; Bate 1906,

Fig. 3. Detail of the early 16th century wall decoration showing the "Life of St. Benedict" in the Great Cloister of the monastery of Monte Oliveto Maggiore (Siena, Italy) painted by the Italian artist Giovanni Antonio Bazzi.

1913; Miller 1907, 1912; Zimmermann 1953; Ondrias 1965; Ragni et al. 1999) where it is locally indicated by the vernacular term *arkalos*. In the course of the present study, it was possible to confirm its occurrence on the islands of Tinos, where it is locally known as *chakalos* (Gaetlich, pers. com.), Euboea, Crete, Rhodes, and possibly Andros (Gaetlich, pers. com.). There are unconfirmed records of badgers from Siphnos (Erhard 1858; Heldreich 1978; Cheylan 1988), but this does not exclude *a priori* the possibility of a previously more widespread distribution in the Aegean basin, and more specifically on the Cyclades. Moreover, the human practice of the importation of badgers onto the Greek islands is documented since prehistorical times. On Crete the oldest bones of *M. meles* were discovered in the Aceramic Neolithic levels at Knossos, while Ceramic Neolithic and later levels produced numerous remains of the species (Jarman 1996). Other osteological material was found on the site of Aghia Triada, and Kavousi-Vroda and has been respectively referred to the Ancient Minoan period (about 3,000–2,200 B.C.) (Wilkens 1996), and to the Late Minoan III C (Klipper & Snyder 1991; Snyder & Klippel 1996). It is not immediately apparent why human should have wanted to introduce badgers onto the islands, which is suggested because otherwise they would not have been able to pass unobserved on the small boats employed to reach the new territories (Vigne 1988, 1995; Masseti 1995). Since very ancient times, they may have played an important role in human societies, both symbolically and as food. Badgers might also have been utilised for their fur (Masseti 1995). Moreover, in medieval Europe another use of this mustelid has been documented. Wall paintings from the early 16th century (Fig. 3) at the monastery of Monte Olivcto Maggiore (Siena, Italy), painted by the Italian Giovanni Antonio Bazzi, better known as Sodoma, clearly show badgers as pets, very likely representing an authentic status symbol that underscored the affluence and social position of their owner, the painter himself (Carli 1980).

LEOPARDS ON SAMOS – CONCLUDING REMARKS

A stuffed adult leopard (Fig. 4) is on display at the Natural History Museum of the Aegean in Mytelenii, on the Greek island of Samos (Masseti 2000). This specimen previously belonged to the Town Council (Greek: *Nomarkia*) and has been exhibited there for several decades (Ioannidis et al. 1996; Dimitropoulos et al. 1998). On its label it is classified as *kaplani*, with the explanation that this is the Samian terminology indicating a species of panther. However, the word derives from the Turkish term *kaplan*, commonly used in Anatolia to indicate the tiger, and erroneously also the leopard (Danford & Alston 1880). On the basis of available information, it is today not possible to ascertain the age and the origin the specimen. It is said that the leopard was killed on the island between 1870 and 1880, but there is no evidence that this is correct. The title of one of the most famous novels of the contemporary Samian writer Alki Zei, *To kaplani tis vitrinas* (=The *kaplani* of the showcase), better known however as *Wildcat under glass*, was inspired by this leopard. Speaking of her childhood, the author described this *kaplani*, and since she was born in 1936, it can be presumed that the leopard is older. Unfortunately, the Samian specimen is of an unnatural shape because it has been rather inexpertly stuffed, and hardly recalls the form of a living individual. It has a total length of about 235 cm and tail length of 90 cm, apparently proving that this specimen is a large one. But since the skin of felids is extremely elastic, the original dimensions could have been altered during the taxidermic procedure. The coat colour has deteriorated due to bad preservation conditions, and its prolonged display under daylight. The hair of the skin is worn in patches, but it seems that originally the colouration was tawny or buff on the back and paler on the flanks, where it could have merged into the white of the belly. Today, the entire coat is uniform pale, with dark-brown rosettes along the flanks and the back, which are fairly large (about 3–4 cm in diameter), widely spaced and thinly rimmed, with the centres slightly darker than the

Fig. 4. The stuffed specimen of Asia Minor leopard, *Panthera pardus tulliana* Valenciennes, 1856, shown at the Natural History Museum of the Aegean, Samos (Greece) (photo Marco Masseti; courtesy Natural History Museum of the Aegean, Mytelenii, Samos).

ground tint. The coat is fairly short and full, the hair on the nape is long, and the tail is decidedly bushy. According to the colouration and coat pattern, this specimen could belong to the Anatolian leopard *Panthera pardus tulliana*, as mentioned by Valenciennes (1856), Pocock (1930) and Leyhausen (1991), and clearly distinct from other Near Eastern subspecies (Masseti 2000). It has also been said that the animal arrived at Samos from the opposite coast of Turkey, swimming across the channel separating the island from western Anatolia. In fact there is a deeply-rooted traditional belief on Samos which refer to leopards swimming from Anatolia in various periods. This was reported by Tournefort (1717) who confirmed this legend, observing that: ""*Il y passe quelques tigres qui viennent de terre ferme par le Petit Boghas*". Petit Boghas was the name used at this time to indicate the above mentioned channel. Clarke (1801) followed this observation and mentioned that: "*tigers sometimes arrive from the mainland, after crossing the little Boccaze; thereby confirming all observation made by the author in the former section, with regard to the existence of triggers in Asia Minor*". However, Tournefort (1717) report was probably not based on an own observation, but rather inspired by local people. In any case, since the distance between the island and the mainland is not more than 1.7 km, it cannot be excluded that leopards could have reached the island by swimming, at various times. These felids are good swimmers and could have come e.g. from the Samsundag area (Masseti 2000) which was until the early 1970s the last western Anatolian stronghold of the species (Kumerloeve 1971; Avci 1978; Ulrich & Riffel 1993; Masseti 2000).

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