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NOTES ON THE STATUS, DISTRIBUTION AND MORPHOLOGY OF THE PYGMY WHITE-TOOTHED SHREW *SUNCUS ETRUSCUS* (MAMMALIA, INSECTIVORA, SORICIDAE) IN MALTA

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ABSTRACT

The Pygmy White Toothed Shrew *Suncus etruscus* is one of 19 terrestrial mammal species occurring in the Maltese Islands. Because of their secretive and mostly nocturnal behaviour, very little specific studies have been done on the Maltese mammalian fauna. This note gives a brief account on the present status and distribution of the Pygmy White Toothed Shrew as well as measurements from a sample of 11 specimens.

INTRODUCTION

The Pygmy White-toothed Shrew *Suncus etruscus* (Savi, 1822) has a south Palaearctic-Maghrebian distribution, ranging from Portugal and Morocco to Arabia, Asia Minor, Caucasus, Turkmenistan and Tajikistan. It has also been reported from the Himalayas and South-west China and it occurs also in savannahs and on mountains south of the Sahara (Contoli 2000). In Europe it is restricted to the Mediterranean basin, including many islands (Libois & Fons 1999) such as Sicily, Sardinia and the smaller islands of Asinara, Favignana, Pantelleria and Lampedusa (Contoli 2000).

ORIGIN OF THE MALTESE POPULATIONS

Suncus etruscus is a species of an ancient Tertiary element of hot-arid climates present in most Mediterranean islands (Contoli, 2000). In the Maltese Islands *Suncus etruscus* is believed to be a coloniser of the post-quaternary as from excavations carried out in Ghar Dalam other Quaternary sites only the presence of one shrew species, *Crocidura cf. esuae* (= *C. sicula* Hutterer 1991) was revealed (Bate 1935, Storch 1970).

Contoli (2002) suggested that island colonisation in the Mediterranean by *S. etruscus* was aided by humans.

EARLY RECORDS

The first mention of this shrew from the Maltese Islands, albeit an ambiguous one, is that by Gulia (1914) regarding a male specimen listed as *Crocidura suaveolens* which was caught by G. Despott at Ta' Brolli, limits of Ghaxaq in the early 1900s. As previously noted by Lanfranco (1969) and Schembri & Schembri (1979), Despott's record did not include the relevant authority for the species reported (i.e. either Pallas or Blasius). If the authority was the former then it would have been *C. russula*, but if it were Blasius, then it would have been synonymous with *Suncus etruscus*.

Bate (1935) gave the following account "in 1925 Mr. Despott has most kindly sent me two recent shrews from Malta and the neighbouring island of Gozo. An examination of the two skulls showed the specimen from Malta to be an example of the tiny *Pachyura etrusca* (= *Suncus etruscus*) and that from Gozo of *Crocidura russula*". The donation of two shrews *Crocidura micrurus* (= *Crocidura microurus* = *Crocidura leucodon* (Hermann, 1780) and *Pachyura entrusca* (= *etrusca*) = *Suncus etruscus)* to the Natural History Section of the National Museum are mentioned in the Curator's Report of 1927-28. The following year, Despott (1929) lists a *Pachyura etrusca* Savi = *S. etruscus* as taken from the village of Rabat, Malta.

OBJECTIVE OF THE STUDY

The Pygmy White toothed Shrew has never been studied locally and references to the species are rather vague or inaccurate. Furthermore no biometrics from Maltese specimens have been published so far. The objective of this note is to present an updated account on the status and distribution of *Suncus etruscus* as well as to give biometrics of this species based on Maltese specimens.

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MATERIALS AND METHODS

The diminutive size and the nocturnal habit of the Pygmy White-toothed Shrew makes it a very difficult species to observe and study. With the use of Longworth, Sherman and pit traps during a five year period (1997-2001) trapping mice namely *Apodemus sylvaticus* and *Mus domesticus* in order to establish distribution and habitat overlap of the two species (J.J. Borg in prep), not a single specimen of *Suncus etruscus* was ever caught. On the other hand, the ever-increasing population of cats present in the countryside as well as in suburban and urban areas provided an adequate sample for examination. All the morphological data presented in this work is derived from cat kills. The biometrical data is taken from 11 specimens and the following measurements were taken: head and body length, tail and hind foot. A Vernier calliper was used and measurements were taken to the nearest 0.5mm.

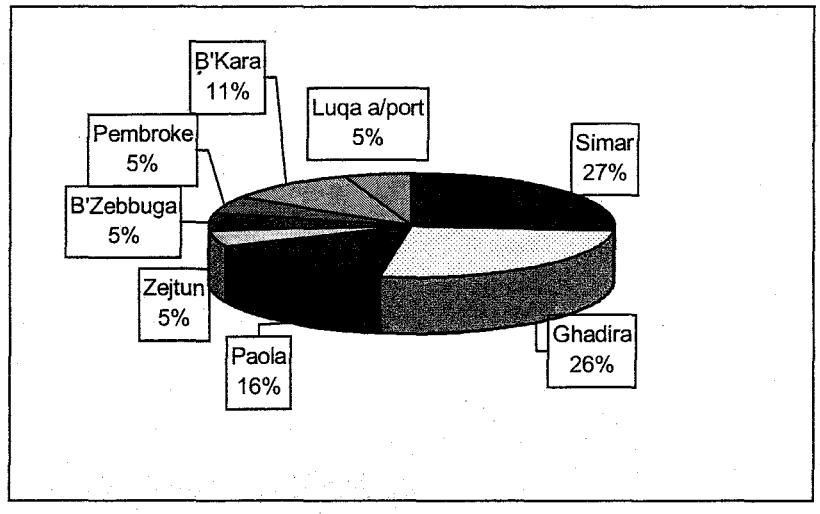
After being measured and duly examined, all specimens were wet preserved and reposited in the National Museum of Natural History, Mdina.

DISTRIBUTION

After examining all the available records, Lanfranco (1969) rather hastily concluded that *Suncus etruscus* is the only species of shrew in the Maltese Islands. Subsequent authors (Schembri & Schembri 1979, Schembri 1985, Libois & Fons 1999 and Baldacchino & Schembri (2002) have all recorded this species as present on Malta as well as on Gozo, possibly following Lanfranco's authority. Baldacchino (1996) states that it is not known from Gozo. A number of small sized shrews (immature individuals of *Crocidura sicula*?) taken by a cat in Xaghra are thought to be *S. etruscus* (Cassar, L.F. Pers. Comm). Unfortunately no specimens are available for specific confirmation. From two campaigns of live trapping on Gozo the first by Vogel *et al* in 1989 and from 1997 to 2001 (rodent distribution) by the present author, no *Suncus etruscus* specimens were trapped. Studies on the diet of Barn Owls *Tyto alba* from one locality in Gozo from 1977 to 1992 failed to produce any *S. etruscus* remains (Schembri & Cachia-Zammit 1979, Borg & Cachia-Zammit 1986-87 & 1994). Sultana (1970) also failed to find traces of *Suncus etruscus* in Barn Owl pellets from another site in Gozo.

Although by no means abundant, this shrew has a widespread distribution in Malta. It has been recorded from a variety of habitats, and specimens have been collected from coastal, rural, suburban as well as urban areas. The distribution presented in this work is biased towards those localities with a higher cat population and the human's disposition to report such cat kills. The highest number of specimens was reported from Ghadira and is-Simar Nature Reserves (Fig. 1).

Fig. 1 Localities where specimens of *S. etruscus* where taken



PERIOD OF ACTIVITY

The Mediterranean climate of hot dry summers and mild, cold, wet winters favours shrew activity for almost 12 months of the year. However no records exist for the months of February, July and December. There appear to be two peak periods of activity, March in Spring and October in autumn (Fig.2). This is explained by the fact that in March shrews wake up from their torpidity and in October they are preparing to go into lethargy therefore needing to accumulate as much body fat as possible. In the spring of 2003 after a short spell of warm weather, which lasted two days, the temperature plummeted down with dire consequences for small insectivorous mammals. Four Etruscan Shrews were found dead along the footpath of the Ghadira Nature Reserve after failing to find adequate food.

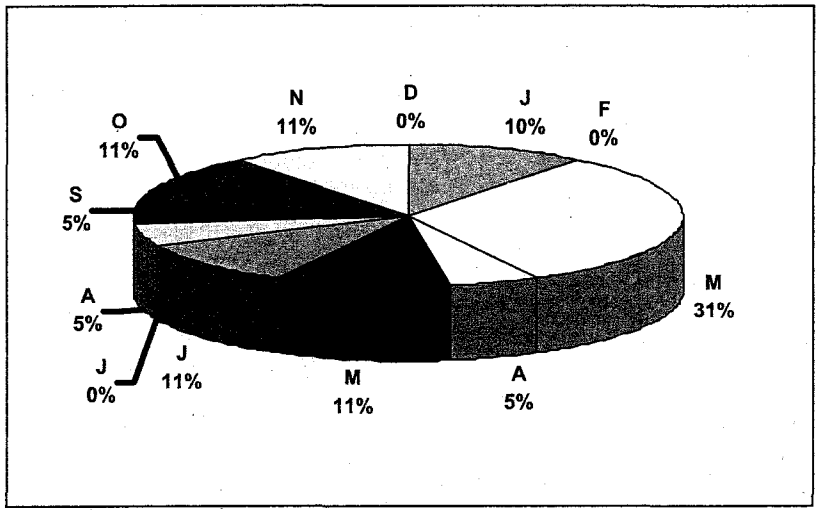


Fig 2. Monthly observations of *Suncus etruscus* in Malta.

MEASUREMENTS

This species is known for its geographical and clinal variation, as has been reported from Spanish populations, with northern specimens being larger than those from the south (Libois & Fons 1999). The Sardinian specimens of *S. etruscus pachyurus* are larger than those found in the rest of southern Europe (Contoli 2000).

The present analysis is based upon the measurement of eleven *S. etruscus* from Malta. The general trend shows that Maltese shrews are slightly smaller in size than their European counterparts with smaller hind feet (6.8 - 7.8 mm) and tails (21.5 - 26.1 mm) while the head and body length (36.5 - 46.5 mm) although smaller on average, were comparable to those from other countries (Table 1). Skulls measured 15.1 - 21.2 mm with an average of 19.3 mm, the ear length ranged from 4 - 6 mm, averaging 5.2 mm. There is a possibility that the reduced size of the hind feet and tail found in Maltese specimens is due to the fact that some individuals were not yet fully grown.

Table 1. Biometric comparison of Maltese and non-Maltese *S. etruscus*.

Study	H/b	Hind feet	Tail
Toschi 1959 (Italy)	35-52mm	7-8mm	25-29mm
Van den Brink 1959 (general)	36-52mm	7-8mm	24-29mm
Lekagul & McNeely 1977 (Thailand)	35-50mm	7-9mm	25-30mm
Macdonald & Barrett 1993 (UK)	35-52mm	7-8mm	24-30mm
Present work (Malta)	36.5-46.5mm	6.8 -7.8mm	21.5 -26.1mm

CONCLUSION

From the information gathered to date there seems to be no definite evidence that the Pygmy White Toothed shrew is present on Gozo or any of the smaller islands of the Maltese Archipelago. On Malta it has been reported in a variety of habitats including urban habitats; it is therefore at risk from the increasing number of feral cats. This analysis demonstrated that the sample of Maltese shrews analysed showed relatively smaller biometrics than the European *S. etruscus*. A reduction (or increase) in size is usually a characteristic feature of fauna living on offshore islands.

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