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PRELIMINARY RESEARCH ON SOME ECOLOGICAL AND BIOMETRIC ASPECTS OF THE SARDINIAN PINE MARTEN *(MARTES MARTES)*

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ABSTRACT – The coat colour and the biometric measurements of 13 Sardinian pine martens *(Martes rnartes)* were similar to the Italian peninsular specimens. The diet was constituted by vegetables (mainly Rosaceae fruits), mammals (rodents) and birds. On the basis of the collecting sites of martens, different habitats were frequented by the species, from woods to anthropic areas.

Key words: *Martes martes,* Pine marten, Biomctry, Diet, Sardinia.

RIASSUNTO – *Indagine preliminare su alcuni aspetti ecologici e biometrici della martora* (Martes martes) *in Sardegna* – La colorazione del mantello e i dati biometrici di 13 esemplari di martora sarda *(Martes rnartes)* erano simili a quelli riportati per esemplari dell'Italia peninsulare. La dieta era composta soprattutto da vegetali (frutti delle Rosaceae), da mammiferi (in particolare roditori) e da uccelli. Sulla base dei siti di ritrovamento degli animali si riscontra che la specie frequenta ambienti diversi, dai boschi alle zone antropizzate.

Parole chiave: *Martes martes,* Martora, Biometria, Dieta, Sardegna,

INTRODUCTION

Barrett-Hamilton (1904) classified the Sardinian pine marten as *Martes martes latinorum* subspecies. Miller (1912) distinguished it from the nominal species by the leather-yellow patch on the throat and by a lighter dominating colour, while Cavazza (1912), in his review of Italian martens, described it as having a yellowish-brown colour, a yellow-orange patch and the same size of other Italian forms, except for a slightly longer tail.

The most recent work on the Sardinian pine martens is that by Hutterer and Geraets (1978), in which biometric measurements of 7 martens were given. In addition, the specimens examined by these authors had a very dark coat and a big orange throat patch.

The purpose of this ongoing investigation, the preliminary data of which are presented herein, is to provide further biometric data on Sardinian pine martens **and** to investigate some ecological aspects.

MATERIALS AND METHODS

Thirteen adulthub-adult martens ***(3*** females and 10 males), collected from 1975 to 1993 in different areas of Sardinia, were examined (Fig. 1). Linear and skull measurements were taken on each specimen according to Stubbe (1993) and Toschi (1965). The coat was inspected for colour variability, especially the throat patch. The stomach content was analyzcd in order to collect information on food habits. To identify birds and mammals the determination keys by Day (1966) and Debroit et al. (1982) were used; for vegetables a personal collection of seeds was employed.

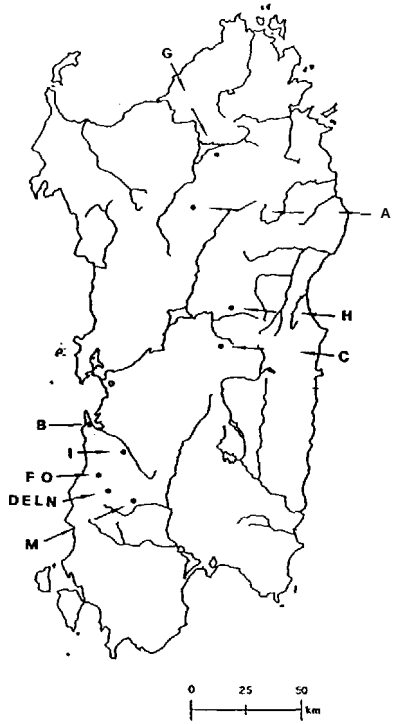

Fig. 1 - Distribution of the examined martens in Sardinia. **A:** Nughedu S.Nicolò, B: S.Antonio di Santadi, C: Desulo, D-E-L-N: Connosfanadiga, F-O: Guspini, G: Oschiri, H: Orgosolo, I: Nuraci, M: Villacidro.

Tab. 1 - Linear and skull measurements of 13 pine martens. (lengths and width in mm, weight in g, cranial capacity in cc; S.D. = Standard Deviation).

	FEMALES				MALES			
	N.	Average	S.D.	Min-max	N.	Average	S.D.	Min-Max
Body weight	3	1300	133.1	1195-1450	10	1765.3	140.1	1550-2100
Head-body length	3	397	5.8	390-400	10	439	12.9	420-450
Hind foot lcngth	3	85.7	4.0	82-90	10	94.5	2.2	90-97
Ear lcngth	3	38.3	2.9	35-40	10	43.2	5.9	34-50
Tail length	3	213.3	11.5	200-220	10	229.8	10.4	214-250
Thoracic circumference	3	209	21.0	185-224	10	240.6	13.1	220-256
Neck circumference	3	144	5.3	140-150	10	166.1	8.3	154-177
Cranial capacity	2	19.7	0.5	19.3-20.0	8	23.8	1.0	23.0-26.3
Total cranial length	2	81.5	0.4	81.2-81.7	8	90.0	2.0	87.7-92.7
Condylo-basal length	2	78.4	0.1	78.3-78.5	7	85.2	1.8	83.1-88.5
Basal length	2	70.8	1.1	70.0-71.6	7	77.6	1.2	76.4-80.0
Zygomatic width	2	45.0	1.6	43.9-46.1	8	50.6	2.3	47.9-53.1
Mandible length	3	51.2	1.3	50.0-52.5	9	56.6	1.5	54.0-59.5
Upper molar width	3	7.3	0.1	7.2-7.4	9	8.1	0.4	7.5-8.7

RESULTS AND DISCUSSION

The coat colour of the examined martens varied from brown to tawny. The back of fore and hind paws was dark tending to black on the distal part. The dorsal part of the tail got darker distally with a completely black apex. The ventral region of the tail had a tawny tone. The ears showed a very clear auricle edge. The throat patch changed in shape with dark spots of different size varying in number and arrangement. Its colour ranged from dark orange to orange yellow and straw colour. The underpart of the body was lighter than the back and got darker on the ventral part of the fore and hind paws.

All biometric measurements of the marten males were greater than those recorded for the females (Tab. 1). However no statistical comparison of these data was done, because of the small sample of females. The examined martens had similar dimensions to those recorded by Toschi (1966) for Italian peninsular specimens. The marten diet was constituted by vegetables (mainly Rosaceae fruits), mammals (rodents) and birds (Tab. 2).

On the basis of the collecting sites of martens, different habitats seemed to be frequented by the species. Martens were not confined to mature woods or Mediterranean maquis but were also close to anthropic areas.

Tab. 2 - Analysis of stomach content and habitats where martens were found.

LOCALITY	MONTH AND YEAR OF COLLECTING	STOMACH CONTENT	HABITAT
Nughedu S. Nicolò	September 1993	Rodent, lizard	MATURE WOOD *Quercus pubescens*
S. Antonio di Santadi	December 1991	*Apodemus sylvaticus*, sparrow, vegetable remains	MEDITERRANEAN SHRUBS *Cistus monspellensis* *Arbutus unedo*
Desulo	January 1992	*Scolopax rusticola*	MATURE WOOD *Quercus ilex* *Juniperus oxycedrus*
Gonnasfanadiga	**April** 1992	*Columba livia*	MATURE WOOD *Quercus ilex*
Gonnasfanadiga	February 1993	*Rattus rattus*	MATURE WOOD *Quercus ilex*
Guspini	October 1993	*Rattus rattus*, rodent	BUSH HEDGE
Oschiri	September 1993	Blackberries (*Rubus* sp.)	CULTIVATION HEDGE
Orgosolo	August 1993	Blackberries (*Rubus* sp.)	MATURE WOOD *Quercus ilex*
Nuraci	April 1975	Blackberries (*Rubus* sp.)	BUSH OLIVE GROVE
Gonnasfanadiga	August 1989	Pear (*Pirus* sp.)	ORCHARD
Vallacidro	April 1993	Empty	ORCHARD
Gonnasfanadiga	November 1993	*Turdus philomelos* *Crocidura russula* *Arbutus unedo*	BUSH OLIVE GROVE
Guspini	August 1993	Pear (*Pirus* sp.)	ORCHARD

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