

## NOTES ON THE MORPHOLOGY OF *PODARCIS SICULA COERULEA*, THE BLUE LIZARD OF THE FARAGLIONI DI CAPRI

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*P. sicula* is a widespread species and a huge number of subspecies have been described (Henle K. and Klaver C.J.J. 1986, in Böhme W., *Handbuch der Reptilien und Amphibien Europas*, Band 2/II Echsen III Podarcis, AULA-Verlag) One of the most famous and the first that has been described is *P. s. coerulea* (Eimer, 1872) of the Faraglioni di Capri, just outside the Gulf of Naples. Since the last works on this population date back to the the 50s, it is interesting to re-examine these populations studying their morphological traits with modern multivariate statistical analysis.

A total of 177 specimens were measured (89 males, 88 females). The samples came from the two Faraglioni rocks (Faraglione Esterno and Faraglione di Mezzo), Naples and other three islands of the Gulf of Naples (Ischia, Vivara, Capri), for a total of 6 localities. Eleven pholidotic and 3 morphometric characters were studied: dorsal (DORS), ventral (VENT), collar (COLL), gular (GUL), supraciliar (SCS), supratemporal and supralabial scales (SL), femoral pores (FPOR), scales under the IV toe (4TOE), supraciliar granules (SCG), scales between the masseteric shield and the supratemporal scales (SM), snout-to-vent (SVL), trunk (TRL) and head length from the tip of the snout to the posterior margin of the collar (HL). The pholidotic characters have been analysed (separately for males and females) with Mahalanobis Distances analyses and with AN(C)OVA (morphometric characters were eventually used as covariates).

The Mahalanobis Distances analysis has shown a clear differentiation of the two Faraglioni rocks. The total percentages of correct classification keeping the 6 localities separated was 66% for males and 65% for females, showing a low capacity of discriminating among populations. When considering two groups (the first with the two Faraglioni rocks' populations and the second with the other localities), the above mentioned total values rose up to 98% for males and 97% for females. More in detail, the Faraglioni rocks showed 100% of correct classification for both sexes, while the other localities 97% for males and 82% for females.

Many subsequent ANOVAs have shown that the following variables were significantly different in both sexes between the two groups: DORS, VENT, COLL (significant only in males), GUL, SCG and SM (see table). Correlations have been detected (between populations) between the following couples of pholidotic and morphometric variables: DORS and SVL (males  $R^2=0.92$ ,  $p=0.02$ ; females  $R^2=0.096$ ,  $p=0.28$ ), VENT and TRL (males  $R^2=0.59$ ,  $p=0.047$ ; females  $R^2=0.82$ ,  $p=0.008$ ), GUL and HL (males  $R^2=0.75$ ,  $p=0.02$ ; females  $R^2=0.61$ ,  $p=0.04$ ), SCG and SVL (males  $R^2=0.73$ ,  $p=0.02$ ; females  $R^2=0.57$ ,  $p=0.049$ ). Consequently, ANCOVAs of the pholidotic variables using the relative morphometric variable as covariate have been calculated, but the pholidotic variables still showed significant differences between the two groups (Tab. 1).

The analysis showed a clear differentiation between the two Faraglioni rocks and the other islets, with the two Faraglioni rocks' populations which resulted almost identical. As shown by the ANOVAs, the populations of *P. s. coerulea* have more dorsal, ventral and gular scales, more scales between the masseteric shield and the supratemporal scales, less supraciliar granules and less collar scales (this last only in males). These differences are probably partly due to differences in size and relative length of body parts, but also to phylogeny: this has been proved by the facts that ANOVAs and ANCOVAs gave the same results, and that the number of

supraciliar granules decreases with the increase of body size. Anyway, it is still too early to give further consideration on the meaning of these differences in the pholidosis: further analyses are required, both morphological and genetical.

Table 1

Variables	ANOVA						ANCOVA					
	Males			Females			Males			Females		
	df	F	<i>p</i>	df	F	<i>p</i>	df	F	<i>p</i>	df	F	<i>p</i>
DORS	1.87	42.16	<0.0001	1.86	26.12	<0.0001	1.86	23.95	<0.0001	1.85	19.13	0.0003
VENT	1.87	70.69	<0.0001	1.86	10.08	0.002	1.83	32.66	<0.0001	1.84	4.85	0.03
COLL	1.87	8.73	0.004	-	-	-	-	-	-	-	-	-
GUL	1.87	60.98	<0.0001	1.86	40.65	<0.0001	1.83	51.22	<0.0001	1.84	26.41	<0.0001
SCG	1.87	13.75	0.0004	1.86	13.54	0.0004	1.86	11.70	<0.0001	1.85	6.42	0.01
SM	1.87	51.35	<0.0001	1.86	22.88	<0.0001	-	-	-	-	-	-

Key words: *Lacertidae*, *Podarcis*, *islands*, *morphology*.