
Abstract. — Multivariate morphometrics has been used to investigate on systematics and geographic variation of four species of pikas (genus Ochotona) occurring in the Palaearctic Region. Results show that i) species are morphometrically distinct; ii) classification of at least one population must be reconsidered; iii) there is a morpholine occurring in parallel in species and populations that dissuades from the use of trinomial nomenclature for these populations.

Key words: Pika; Ochotona; Multivariate morphometrics; Systematics; Geographic variation.

Introduction

Systematics and taxonomy of pikas (Ochotona, Lagomorpha) in the Palaearctic are still an open problem. The genus occurs throughout the Holarctic Region, and many species and subspecies have been described. There is little agreement among lagomorph specialists on the number of species and subspecies comprised in this genus (Honacki et al., 1982; Erbajeva, 1985; Corbet and Hill, 1986; Smith et al., 1989; Zheng Chang Lin, 1989). Moreover, the disagreement is relative also to specific names attribution (Smith et al., 1989; Zheng Chang Lin, 1989). It is therefore essential to bring some clarification among the several described taxa in order to prevent confusion.

Multivariate morphometrics have been used to investigate on differentiation of species and of populations of Ochotona roylei, O. rufescens, O. thibetana and O. cansus occurring from Iran to West China (fig. 1).

Multivariate morphometric is particularly appropriate to the study of systematics and geographic variation when adequate collections of populations are available (Thorpe, 1983; Corti and Loy, 1985). Museums store large collections of pikas. Moreover, there are samples which have been collected long time ago and that need to be reexamined in relation to the new data on species distribution. We devoted a

Fig. 1. - Map showing the localities studied. (●) = O. roylei; (○) = O. rufescens; (△) = O. thibetana; (▲) = O. cansus. For locality acronyms see the table.

Material and Methods

A total of 232 individuals of Ochotona roylei, O. rufescens, O. thibetana and O. cansus have been analyzed. Localities investigated are shown in fig. 1 and table.

Skull measurements were recorded from the following museum collections: British Museum (N.H.) - London; United States Natural History Museum - Washington, D.C.; American Museum of Natural History - New York.

The following eleven linear skull characters have been measured for each specimen by using an automated caliper (Marcus, 1988): Occipito-nasal length, Zygomatic width, Inter-orbital constriction, Rostrum width, Width of third molars at crown, Diastema length, Length of tympanic bulla, Nasal length, Nasal width, Width of palatine foramen, Parietal width.

Discriminant analysis has been used to test for population/species distinction and for assessing patterns of geographic variation in morphometric characters. Discriminant analysis is a multivariate technique which maximizes between-group variation relatively to within-group variation and ordinates groups along axes of maximum variation.

Mahalanobis distances and UPGMA have been used to depict phenetic similarities between and within species.