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Biologia. — *The Rodent fauna of Tanzania*: *a cytotaxonomic report from the Maasai Steppe (1999).* Nota di Carlo Fadda, Riccardo Castiglia, Paolo Colangelo, Marco Corti, Robert Machang'u, Rodes Makundi, Alessandra Scanzani, Protas Tesha, Walter Verheyen e Ernesto Capanna, presentata (*) dal Socio E. Capanna.

Abstract. — The rodent fauna of Tanzanian savannahs is poorly known. For this reason, the Accademia Nazionale dei Lincei sponsored a project together with the Biology Department of Antwerp and the Sokoine University of Agriculture (Morogoro, Tanzania) on Eastern African rodents. The aim was to study the taxonomy and systematics of rodents of these areas and the processes through which rodent biodiversity has increased in these African regions. We present here a report of the expeditions carried out in the Maasai steppe of Tanzania during 1999, with the description of the karyotypes of 13 rodent species. These are: *Saccostomus* cf. *mearnsi* (Cricetomynae), *Tatera* cf. *robusta*, *Gerbillus* cf. *pusillus* (Gerbillinae), *Acomys spinosissimus*, *Acomys wilsoni*, *Acomys ignitus*, *Aethomys* cf. *chrysophilus*, *Arvicanthis* cf. *neumanni*, *Arvicanthis* cf. *nairobae*, *Grammomys* sp., *Lemniscomys rosalia*, *Lemniscomys* cf. *zebra*, *Mastomys natalensis* (Murinae). The karyotypes of eight species are described for the first time (*Saccostomus* cf. *mearnsi*, *Gerbillus* cf. *pusillus*, *Acomys wilsoni*, *Acomys ignitus*, *Arvicanthis* cf. *neumanni*, *Arvicanthis* cf. *nairobae*, *Grammomys* sp., *Lemniscomys rosalia*).

Key words: Cytotaxonomy; Chromosome evolution; Rodents; Tanzania.

Riassunto. — *La fauna a roditori della Tanzania*: *rapporto citotassonomico dalla Steppa dei Masai (1999).* La fauna a roditori della Tanzania è scarsamente conosciuta; per questo motivo l'Accademia Nazionale dei Lincei ha finanziato, assieme al Dipartimento di Biologia di Anversa (Belgio) e al Dipartimento di Agronomia della Sokoine University di Morogoro (Tanzania), un progetto inteso, d'un lato, a chiarire la tassonomia e la sistematica dei roditori di questa area, e, dall'altro, a studiare i processi attraverso i quali viene incrementata la biodiversità di questa regione africana. In questo rapporto si riferiscono i risultati delle spedizioni effettuate in Tanzania nel 1999 nella Steppa dei Masai, con la descrizione del cariotipo di 13 specie di roditori: 1 Cricetomynae, *Saccostomus* cfr. *mearnsi*, 2 Gerbillinae, *Tatera* cfr. *robusta*, *Gerbillus* cfr. *pusillus*, e 10 Murinae, *Acomys spinosissimus*, *Acomys wilsoni*, *Acomys ignitus*, *Aethomys* cfr. *chrysophilus*, *Arvicanthis* cfr. *nairobae*, *Arvicanthis* cfr. *neumanni*, *Grammomys* sp., *Lemniscomys* cfr. *zebra*, *Lemniscomys rosalia*, *Mastomys natalensis*. Otto cariotipi risultano descritti per la prima volta e sono stati messi in evidenza casi di polimorfismo e/o politipismo.

Introduction

During the twelve years that passed between the publication of the Mammals checklist by Honacki *et al.* (1982) and the checklist completed by Musser and Carleton (1993), more than 80 new rodent taxa have been described, mostly sibling species. This has mainly been the result of an increased use in recent years of cytological and molecular methods. Particularly, in the savannah-like environments of Eastern Africa the occurrence of several new cryptic species has been recorded, resulting from speciation processes leading to an augmentation of the genetic diversity linked with little morpho-

(*) Nella seduta del 12 gennaio 2001.

logical variation. There is therefore an urgent need to identify properly already described and eventually new taxa as a tool for applied research and management programmes in those areas.

The history of the European settling process in Eastern Africa (Tanzania, Kenya and Uganda) as well as the higher suitability of certain areas for profitable farming activities, have profoundly influenced the compiling of the regional faunal inventories. This has finally resulted in an unbalanced taxonomical situation. Indeed, out of the *grosso modo* 200 described murid taxa for the Eastern African Region, more than half have been collected in Kenya (± 130), whereas Uganda (± 40) and Tanzania (± 30) score far less. For this reason there was real need to start adequate specimen-collections in Tanzania covering the whole territory, including also representative collections for biomolecular and karyological analyses.

Since 1986 a series of rodent-research projects was implemented, mostly centred around population ecology of pest-species such as *Mastomys natalensis*. In all these projects the University of Antwerp and the Sokoine University of Agriculture (Morogoro, Tanzania) were closely collaborating (the Belgian-Tanzania Joint Research project, Belgian Agency for Developmental Co-operation, 1986-1989; the E.U. Project Rodent Biology and Integrated Pest Management in East Africa, TS3-CT93-0206, 1994-1997; the Development and Capacity Building in Rodent Research, IUS programme – VLIR-SUA-Component nr. 3, 1997-2002). Recently, the University of Rome and the Accademia Nazionale dei Lincei (Commissione Musei Naturalistici, 1997) joined this co-operative research. The aim of this new collaboration was to strengthen the research-team involved in the study of the systematics and taxonomy of the savannah rodent fauna of Tanzania.

In this paper we report on the karyotype analysis performed in the course of the first year of activity, during which more than 250 specimens have been analysed.

Among mammals, chromosomal rearrangements occur in rodents at a particular high rate (Capanna and Corti, 1991), and several models of incipient speciation, accompanied or favoured by structural rearrangements of the karyotype have been described (Bush *et al.*, 1977; King, 1993; White, 1978). For this reason any qualified study on rodent taxonomy should, if possible, include the analysis of the karyotype.

We present here the description of the karyotypes of 13 murid species, including their diploid and the autosomal Fundamental Number (aFN). However, due to the complexity and the inadequacy in the present systematics of most of the genera, species names will be preceded by cf. since the specific name often cannot be determined with absolute certainty. For each genus the current knowledge of the karyotypes is presented, including the diploid number, the autosomal Fundamental Number (aFN) or, if impossible to determine, the Fundamental Number (FN).

Habitat description.

As already mentioned, our attention focused on the rodent-fauna of the savannahs between the great lakes and the Indian Ocean coast (fig. 1). It is obvious that the system constituted by the great Eastern Africa lakes and its mountain ridges and the