



ECOLOGICAL AND TAXONOMIC STUDIES ON MAMMALS OF SIWA OASIS, WITH SPECIAL REFERENCE TO RODENTS

A thesis submitted for the award of doctor of philosophy
degree in Science
(Zoology – Animal Ecology and Taxonomy)

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2013

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ACKNOWLEDGMENTS

Sincerely, I would like to express my deepest thanks to Dr. **Sohail Samy Soliman**, Professor of Vertebrate Ecology and Taxonomy, Department of Zoology, Faculty of Science, Ain Shams University, for suggesting the subject of the work, his active supervision throughout field work or laboratory investigation, and his understanding and encouragement. His critical reading of the manuscript of this work is greatly appreciated.

I would like to express my sincere thanks to Dr. **Afaf Abdel-Hamid El-Sayed**, Assistant Professor of Physiology, Department of Physiology, Desert Research Center, for her active supervision, encouragement and continuous support throughout the course of the work.

My deepest thanks go to the **Desert Research Center** for providing all the logistic facilities for field work, without which this work would have never been done.

Thanks are due to Professor **Mohamed Tarek Abd-El-fattah**, Head of the Department of Animal Physiology, Desert Research Center, for administrative facilities. Special thanks are also due to the staff members of the Department and to my friends in the Desert Research Center for their cooperation and support throughout the course of this work.

Thanks are due to Professor **Nagui Hassan Fares**, Head of the Department of Zoology, Faculty of Science, Ain Shams University, for the administrative facilities.

I would like to express my deepest thanks to my family members for their support, endless patience and love.

ABSTRACT

The present study is based on a seasonal field work that extended for six consecutive seasons (autumn 2008 to winter 2010, inclusive) in different localities of Siwa Oasis in the Western Desert of Egypt. Laboratory studies were carried out as well. The study has primarily dealt with the population ecology of two common rodent species, namely, the Large North African Dipodil, *Dipodillus campestris* (Levaillant, 1857) and the Lesser Gerbil, *Gerbillus gerbillus* (Olivier, 1801). A survey of mammalian species of the Oasis was also carried out.

A total of 463 individuals were collected from 15 different localities of the Oasis throughout the study period. The survey of mammals also depended on the observation of tracks and burrow openings of different species, as well as on sight records. The results of the survey indicate that the mammals of the Oasis belong to 14 species of the orders Chiroptera, Lagomorpha, Rodentia and Carnivora. Five of these mammalian species were recorded from the Oasis for the first time, namely, the Charming Dipodil, *Dipodillus amoenus*, Shaw's Jird, *Meriones shawi*, the House Rat, *Rattus rattus*, the Red Fox, *Vulpes vulpes* and the Fennec Fox, *V. zerda*.

Studies of the populations of both *Dipodillus campestris* and *Gerbillus gerbillus* have dealt with the determination of relative ages of individual rodents, the determination of sex ratio in different age- and weight-groups and the seasonal variations in this ratio. The mean tooth wear value, as indicator of age, and mean body weight at the onset of maturity were mathematically determined. The seasonal reproductive cycle and seasonal changes in reproductive organs of both sexes as well as seasonal fluctuations of relative abundance of both rodent species were also studied.

Keywords: Ecology, taxonomy, mammals, rodents, *Dipodillus campestris*, *Gerbillus gerbillus*, Siwa Oasis.

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LIST OF ABBREVIATIONS

BCW	Braincase width
BL	Bullar length
BL	Basal lamina
CIL	Condylolncisive length
E	Ear pinna length
HB	Head and body length
HF	Hind foot length
IOC	Interorbital constriction
MW	Mastoid width
ONL	Occipitonasal length
SH	Skull height
SL	Skull length
T	Tail length
TRL	Upper tooth row length
ZB	Zygomatic breadth

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