University of Zurich[UZH]

Department of Evolutionary Biology and Enviromental Studies

BEEES (Behavior, Ecology, Environment and Evolution Seminar)

Physiological and social flexibility as an adaptation to a changing world

Speaker:	**Dr. Carsten Schradin** CNRS Strasbourg, France
Date/Time:	Tuesday, 2017-10-24 12:15 to 13:00
Place:	Y03-G-85/UZH Irchel Winterthurerstr. 190;8057 Zürich
Access:	only intern
Host:	Prof. Dr. Barbara König

Abstract:
The history of planet earth is a history of ever changing environments. Organisms evolved in this changing world but the current accelerated change might be too fast. For example, many areas are predicted to get more arid in the next decades. I conduct long-term studies on African striped mice (Rhabdomys pumilio) in the semi-desert of the Succulent Karoo in South African, characterised by moist cold springs and very hot and dry summers. Striped mice are born in spring, have to survive the coming dry season and then reproduce in the following spring, but they won't survive for another breeding season. The intensity of the dry season varies often dramatically from year from year and thus from generation to generation, and this not predictable. Striped mice evolved physiological mechanisms to cope with this unpredicted change, such as a flexible endocrine response enabling a flexible onset of breeding, and mechanisms to significantly reduce energy expenditure in the food restricted dry season. They show high intra-specific variation in social organisation (IVSO) and both sexes can either live solitarily or in groups, depending on environmental conditions. I will discuss that IVSO should be taken into account in comparative studies about the social evolution in mammals and in other taxa. In sum, flexibility in physiological and behavioural responses might be one key trait determining whether or not individuals and as such species can cope with a changing world.

last update: 2021-05-21