

News from underground II: Biology of subterranean rodents

More than 250 species of several unrelated rodent lineages have convergently adapted to life underground. In spite of advantages provided by burrows, such as microclimatic stability and low risk of predation, subterranean ecotope is very stressful environment. It is low in oxygen concentration and high in carbon dioxide, dark, deprived of most sensory cues available aboveground, with high risk of overheating, relatively low food supply and high energy costs to find it. To survive here and to cope with these special conditions, subterranean rodents dramatically modified their morphology, sensory biology, and ecophysiology. After few decades of research focused on just a few selected species, we have been experiencing a boom of studies on many further subterranean rodent taxa in the last two decades. It was demonstrated how adaptive evolution of subterranean rodents (and subterranean mammals generally) involves structural and functional changes which are both regressive and progressive in nature. These mammals have become one of the most illustrative examples of mosaic convergent global evolution due to similar constraints and stresses. Interestingly, in recent years it was also demonstrated that at least some lineages of subterranean rodents share convergently cancer resistance and extreme longevity compared to rodents of similar size. Talks and posters in this symposium will include diversity of topics with focus on different subterranean species to demonstrate current research on subterranean rodents represented by different working groups. Potential topic for symposium include:

- Behaviour in nature and lab
- Sensory ecology
- Ecology
- Reproduction
- Ecophysiological and morphological adaptations
- Subterranean rodents as model for evolutionary and biomedical studies

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