
Poster Session 2 – Taxonomy Genetics

81 Maternal divergences within *Myospalax* and introgressive hybridization in the eastern Qinghai-Tibet Plateau

Zhenyuan Cai, Pengfei Song, Hongmei Gao, Jianping Su, Tongzuo Zhang

Northwest Institute of Plateau Biology, Chinese Academy of Sciences, Key Laboratory of Adaptation and Evolution of Plateau Biota; Xining, China, caizhenyuan@nwipb.cas.cn

The zokor (genus *Myospalax*) is a subterranean solitary species. It remains unknown what had caused the morphological complexity and difficulty in species circumscription within *Myospalax*. Hybridization and gene flow are proposed for explaining such a scenario, especially for ambiguous hybridization origin of *Myospalax smithii*. The morphological characters of this species suggested its relationship to both old and young species; however, hybridization usually occurs between young species or lineages with recent divergences. Our phylogenetic analyses of mitochondrial cytochrome b gene (Cyt b) and 12S rRNA gene obtained from 102 individuals representing all eight species of the genus *Myospalax* produced well discerning maternal phylogeny within the genus. Our results further rejected a hybridization origin hypothesis of *Myospalax smithii* between *Myospalax cansus* and *Myospalax myospalaxi*. However, we found that morphologically defined *Myospalax smithii* individuals interweaved with those belonging to *Myospalax baileyi*. These individuals from two species clustered into two well supported clades. We suggest that *Myospalax smithii* should be recognized as separate species, but the extensive hybridization and gene flow between it and *Myospalax baileyi* might have swamped out most pure *Myospalax smithii* individuals possibly due to heterosis of hybrids. Our results are consistent with the previous assumption regarding occurrence of hybridization between recently divergent lineages with close relationships. However, this conclusion was drawn based only on a combination of morphological and maternal evidence; further evidence with genetic signatures from both parents (e.g. nuclear genes) is needed. Overall, these results suggest that *Myospalax* provides a model system for studying speciation, reproduction isolation and gene flow of small mammals.

4 5 9

Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



Julius Kühn-Institut
Bundesforschungsinstitut für Kulturpflanzen

4 5 9

Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



Editors:

Jens Jacob¹ and Jana Eccard²

¹Julius Kühn Institute, Federal Research Centre for Cultivated Plants,
Institute for Plant Protection in Horticulture and Forests, Vertebrate Research,
Toppeideweg 88, 48161 Münster, Germany

²University of Potsdam, Institute of Biochemistry and Biology,
Animal Ecology Group, Maulbeerallee 1,
14469 Potsdam, Germany

Local Organizing Committee:

Jana Eccard, University of Potsdam

Jens Jacob, Julius Kühn Institute, Federal Research Centre for Cultivated Plants, Münster

Daniela Reil, Julius Kühn Institute, Federal Research Centre for Cultivated Plants, Münster

Christiane Scheffler, University of Potsdam

Elke Seydewitz, University of Potsdam

Scientific organising committee:

Emil Tkadlec (Czech Republic); Frauke Ecke (Sweden); Grant Singleton (Philippines); Heikki Henttonen (Finland); Jana Eccard (Germany); Jens Jacob (Germany); Lyn Hinds (Australia); Prince Kaleme (Congo); Xavier Lambin (UK); Zhibin Zhang (China)

International Steering Committee Rodens et Spatium:

Abraham Haim (Israel); Alexey Surov (Russia); Ana Maria Benedek (Romania); Boris Krasnov (Israel);

Emil Tkadlec (Czech Republic); Éric Le Boulengé (Belgium); Farida Khammar (Algeria);

František Sedláček (Czech Republic); Gert Olsson (Sweden); Grant Singleton (Australia);

Heikki Henttonen (Finland); Jan Zima (Czech Republic); Jean-François Cosson (France); Linas Balčiauskas

(Lithuania); Maria da Luz Mathias (Portugal); Molly McDonough (USA); Mustafa Sözen (Turkey);

Nigel Yoccoz (Norway); Olga Osipova (Russia); Takuya Shimada (Japan); Victor Sánchez Cordero (Mexico);

Xavier Lambin (United Kingdom); Yasmina Dahmani (Algeria)

International Steering Committee**International Conference of Rodent Biology and Management:**

Andrea Byrom (New Zealand); Charley Krebs (Canada); Grant Singleton (Philippines); Jens Jacob (Germany);

Jiqi Lu (China); Lyn Hinds (Australia); Nico Avenant (South Africa); Peter Banks (Australia);

Peter Brown (Australia); Regino Cavia (Argentina); Rhodes Makundi (Tanzania); Roger Pech (New Zealand);

Steven Belmain (UK); Sudarmaji (Indonesia); Zhibin Zhang (China)

Bibliografische Information der Deutschen Nationalbibliothek

Die Deutsche Nationalbibliothek verzeichnet diese Publikation

In der Deutschen Nationalbibliografie: detaillierte bibliografische

Daten sind im Internet über <http://dnb.d-nb.de> abrufbar.

ISSN 1868-9892

ISBN 978-3-95547-059-3

DOI 10.5073/jka.2018.459.000



Alle Beiträge im Julius-Kühn-Archiv sind unter einer

Creative Commons - Namensnennung - Weitergabe unter gleichen Bedingungen -

4.0 Lizenz veröffentlicht.

Printed in Germany by Arno Brynda GmbH, Berlin.