
Form and Function

Penial and bacular morphology of mammals - what it can reveal about their owner?

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The reproductive organs exhibit an extraordinary morphological variability, both external (shape of phallus, lappets, papillas, surface ornamentation, spinosity, etc.) and also internal (os penis, os clitoridis). In general, a positive allometry and a high degree of phenotypic variability have been described for the characters associated with the reproduction apparatus, which is probably caused by the sexual selection. This topic was intensively studied during 1960s - 1970s, then the interest declined rapidly, but recently its popularity is rising again. New studies have revealed that morphological traits can fit well into phylogeny and they are also distinguishable in closely related species. The penis of some mammalian groups contains a penis bone (os penis) called baculum, that also displays an astonishing morphological diversity. And it's assumed that the baculum was lost and gained several times during the evolution of mammals. There is also increasing evidence of interdependence of the penial and bacular morphology with life history parameters (i.e. mating system, ovulation type, seasonality of reproduction, degree of sociality). For example, it was found that the increasing level of sociality is associated with a decreasing complexity of penile morphology or that the complexity of genital structure is generally higher in multi-male/multi-female groups as compared to monogamous species. Seasonality of reproduction, unpredictable mating opportunities, high degree of sperm competition, risk of multiple-mating or ovulation induction could be the driving force for the diverse and complex morphology of reproductive organs. Our research is focused on the description of genital morphology, the detection of correlations the penial-bacular morphology with life-history parameters and application of morphological traits to the phylogeny with the particular emphasis on several groups of rodents. And this contribution presents our first results.

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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



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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



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