



BLUMENBACH LECTURE

VORTRAGSREIHE DES
JOHANN-FRIEDRICH-BLUMENBACH-INSTITUTS
FÜR ZOOLOGIE UND ANTHROPOLOGIE

Beyond Camouflage: Macroevolutionary Patterns in the Stick Insect Tree of Life

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Animal Evolution and Biodiversity - Phasmid Evolution

Within winged insects, the plant-mimicking lineage of stick and leaf insects or Phasmatodea has been recognised as an expedient study system to investigate macroevolutionary patterns of various anatomical and behavioural traits such as body forms, defense strategies and reproductive modes. In particular, inferring the evolution of flight in stick insects provides valuable insights into evolutionary trait transformations due to a high diversity in wing states and sizes that vary among closely related species and between sexes. A controversially discussed scenario is the independent regain of wings in stick and leaf insects after ancestral loss.

I revisit the potential re-evolution of this complex trait, violating Dollo's law of irreversible evolution. Moreover, repeated convergent ecomorph evolution and adaptive radiations in geographic isolation shaped the present-day diversity of these insects that exhibit a remarkable repertoire of reproductive strategies and highly disparate repellent substances contrasting the limited number of species known.



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Mittwoch
24. Juni 2026
17:00 Uhr