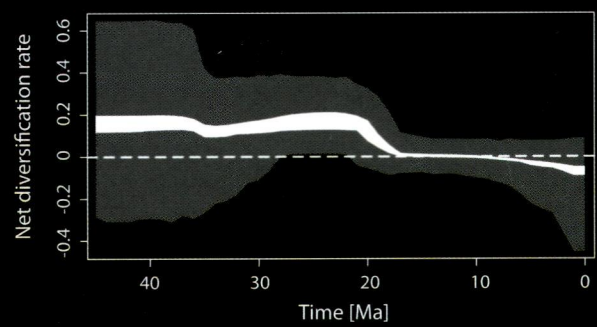
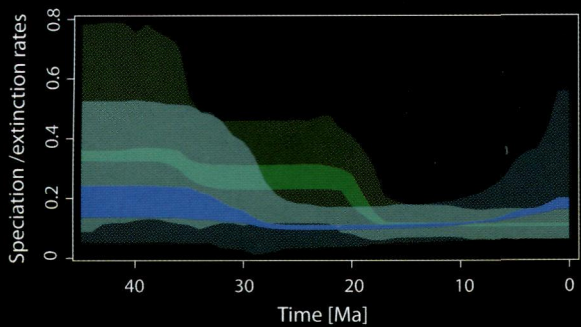
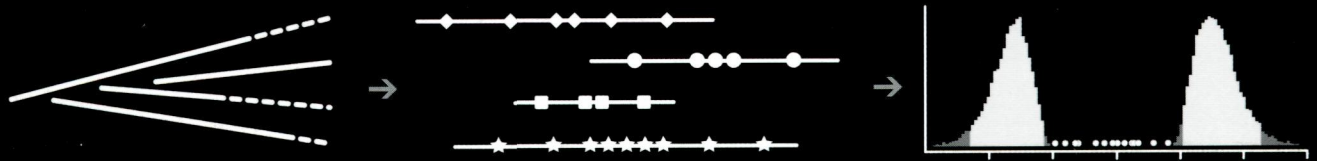


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# Systematic Biology

A JOURNAL OF THE  
Society of Systematic Biologists



VOLUME 63  
NUMBER 3

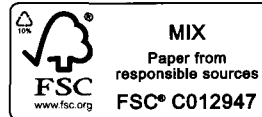
MAY 2014

ONLINE ISSN 1076-836X  
PRINT ISSN 1063-5157

# Systematic Biology

Volume 63, Number 3 May 2014

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**Cover Illustration:** Extinct and extant members of the mammal family Rhinocerotidae (from left to right): *Subhyracodon* sp. (Late Eocene - Late Oligocene), *Aphelops* sp. (Miocene - Early Pliocene), *Teleoceras* sp. (Early Miocene - Early Pliocene), *Coelodonta antiquitatis* (Woolly rhino; Pleistocene), and *Ceratotherium simum* (White rhino; extant). Over the past few years, important advances have been made in disentangling speciation and extinction dynamics through time using dated molecular phylogenies. However, neglecting fossil data means discarding useful information, which is particularly evident in the case of groups that were highly diverse in the past, but are today represented by few species, if any. In this issue, Silvestro et al. present a new probabilistic framework to jointly estimate species-specific times of speciation and extinction and the rates of the underlying birth-death process based on the fossil record. In addition, the model explicitly incorporates the probability of fossilization and sampling. Speciation and extinction rates are allowed to vary through time and are comparable to those estimated from molecular phylogenies. The application of the model to the Rhinocerotidae revealed a complex history of repeated and independent temporal shifts of both speciation and extinction rates, leading to the expansion and subsequent decline of the group (Credits: *Subhyracodon*: National Park Service/Jim Pissarowicz; *Teleoceras*: Frank E. Beddard; *Aphelops*: H.F. Osborn & W.B. Scott; *Coelodonta antiquitatis*: Scott Taylor [Taylor made fossils]; *Ceratotherium simum*: Gary M. Stolz; Images not to scale. Illustration: J. Schnitzler).