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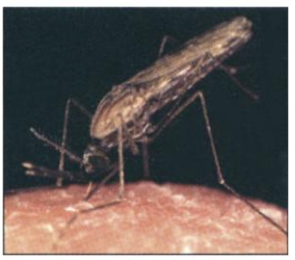
Bloodthirsty Hitchhikers?

NEARLY 100 YEARS AGO, FAHRENHOLZ claimed that parasite phylogeny mirrors host phylogeny (1). The report "Resolution of the early placental mammal radiation using Bayesian phylogenetics" by William J. Murphy and colleagues (14 Dec., p. 2348) brought to our minds Fahrenholz's idea, which, although in many cases not true in the strict sense, served as a hypothesis in numerous studies of coevolution. There are some striking parallels between the proposed placental mammal phylogeny and the proposed phylogeny of the mosquito genus *Anopheles* (*2*).



A female *Anopheles gambiae*.

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Anophelines are mammalian ectoparasites whose life cycles depend on a protein-rich blood meal required by females for egg production. Similar to placental mammals, anophelines likely originated on the ancient supercontinent Gondwana, and their basal lineages experienced rapid diversification that might have coincided with the separation of South America and Africa.

Because no sufficiently old mosquito fossil records are available, our understanding of anopheline evolutionary history depends largely on a careful analysis of their geographical distribution. Of the six *Anopheles* subgenera, *Stethomyia*, *Lophopodomyia*, *Kerteszia*, and *Nyssorhynchus* inhabit South America, *Cellia* is found in the Old World, and *Anopheles* is cosmopolitan. Remarkably, like the placental mammal clade Boreoeutheria, subgenera *Anopheles* and *Cellia* not only appear to occupy a derived (as opposed to basal) position in the anopheline phylogeny, but also are the most diverse. Phylogenetic evidence suggests that the subgenus *Anopheles*, after origination in South America and rapid dispersal throughout Laurasia, reentered the Neotropics from the north. Presumably, then, the early radiation of mammals was closely followed by radiation of anophelines, which thrived on the blood of newly emerging taxa. If this was the case, further studies of *Anopheles* phylogeny might shed new light on such issues in mammalian evolution as timing of divergences and routes of dispersal.

JAROSLAW KRZYWINSKI,* NORA J. BESANSKY
Department of Biology, Center for Tropical Disease Research and Training, University of Notre Dame, Notre Dame, IN 46556–0369, USA
*To whom correspondence should be addressed. E-mail: jkrzywin@nd.edu

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Neuroscience of Stuttering

WE DISAGREE WITH WILLIAM H. PERKINS' comments (Letters, "Stuttering: a matter of bad timing," 26 Oct., p 786) pertaining to the Random Samples item "The stammering brain" (3 Aug., p 795). Perkins takes issue with the discovery by Anne Foundas at Tulane University and her colleagues that anatomical differences between stutterers and nonstutterers in the two brain regions