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Still in the shadow of the dinosaurs: evidence for avian predation driving nocturnality in small mammals

Simona Bekeraitė, Ivona Juchnevičiūtė, and Andrius Spiridonov

Vilnius University, Institute of Geosciences, Department of Geology and Mineralogy, Vilnius, Lithuania

This study investigates the extent of evolutionary pressure by predatory birds on small mammals. Using neontological datasets of predatory bird and small mammal body masses, diets and activity patterns, we show that small mammals are significantly more likely to be nocturnal than the larger-sized species. We apply allometric scaling laws and estimate potential prey body size distributions of vertebrate-feeding hypercarnivorous birds. Using species-level mammal and bird phylogenetic trees we investigate the timelines of temporal niche change in mammals and compare them with the diversification histories of diurnal predatory birds. Our preliminary results suggest that bird predation pressure has been restricting a significant fraction of small mammals to the nocturnal niche, giving support to the nocturnal bottleneck hypothesis.

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