

Abstract Submitted  
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**Avian humeral bone strength and flight with implications for eumaniraptoran dinosaurs** SCOTT LEE, University of Toledo, JOSHUA THOMAS, Clarkson University, RONG LIU, University of Toledo — The strength of humerus bone is evaluated for 17 species of extant birds with varying mass by measuring its section modulus. The least massive bird is *Regulus calendula* (0.0058 kg) while the most massive is *Cygnus olor* (8.959 kg), a range of more than a factor of 1500 in mass. The humeral section modulus is found to be proportional to the mass of the bird. Five extinct birds of the Mesozoic are found to have humeri of the same strength (for their mass) as extant birds. The humeral section modulus of 14 eumaniraptoran dinosaurs are tested and five species are found to have humeri strong enough for flight.

Scott Lee  
University of Toledo

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