As a human commensal species, the Eurasian tree sparrow has a wide elevational distribution throughout the Eurasian continent, e.g. from sea level to 5000 m of elevation on the Qinghai-Tibet Plateau. High-altitude birds are challenged by the hypobaric, hypodense and cold air, but the flight-related performance and underlying aerodynamic constraints have not yet been well identified in comparison with lowland populations of this species. Sun et al. (pp. 3642-3648) show that intraspecific differences in flight-related morphological and functional variables over an ∼3000 m elevational range indicate aerodynamic constraints on flight performance in parallel with enhanced heart and lung masses to offset hypoxic challenge. Photo credit: Shiyong Ge and Guanqun Kou.

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