Session 4: Posters

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Room: Seminar Room

Telomere dynamics of wild house sparrows under artificial body size selection

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Telomeres, the short repetitive DNA sequences at the ends of the chromosome, are degraded during cell division, but their length might also reflect the cumulative effects of oxidative stress associated with acquiring and maintaining a certain body size. Thus, the functional relationship between growth and telomere dynamics might play a role in determining optimal body size in wild species. In this study, artificial selection pressures for smaller and larger body size, respectively, were imposed in a parallel selection experiment lasting 4 years in two insular wild house sparrow populations. Relative telomere lengths were measured on the whole nestling population each year (n = 564) and were found to be shorter in females than in males and negatively correlated with tarsus lengths. This relationship increased in strength when selecting for *larger* tarsus size (when excluding the anomalous year 2003). However, this correlation was not significant in the population selected for *smaller* size, where we find a tendency for body condition in negatively predicting telomere length (excluding year 2003). In this short-lived species (< 5 years), first year mortality is very high and negatively predicted by body size or condition. Thus, we do not recover a trade-off between growth, telomere length and lifespan. However, telomere length might be an indicator of individual phenotypic quality reflecting a more subtle cost of growth. Ongoing studies including complete pedigrees will disentangle how the two selection regimes affected telomere length differently between populations, sexes and years of different climatic conditions and how these factors might interact in potential trade-offs between telomere dynamics and life-history traits.