



BIOLOGY COLLOQUIUM

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Evolution of sociality in the prolonged subsocial huntsman spiders

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About Speaker: Dr. Linda Rayor is Senior Lecturer and Research Associate at the Department of Entomology, Cornell University. She has received many distinguish teaching and research awards. She and her students have run huge outreach program and have spoken to approximate 100,000 people in 7 countries since 1998 about nature and environmental science. She is particularly interested in the trade-offs that obligate predators make to live in social groups. For example, group members may benefit by sharing prey or evade other predators more effectively in the group, but remaining in the group may also reduce their own reproduction. Understanding the factors that influence the evolution of social behavior and how social groups function are central issues in behavioral ecology today.

Habitats impact all aspects of group-living in spiders: prey availability, abiotic factors such as rain or wind, predation risk, and sites for web or retreats. All these factors influence the costs and benefits of living in groups, which in turn may affect the relative social complexity of a species. Diurnal retreats are critical for all four prolonged subsocial huntsman spiders (*Sparassidae: Deleninae: Delena cancerides*, *D. lapidicola*, *D. melanocheilus*, *D. spenceri*) which live in interactive matrilineal family groups with a single adult female and multiple cohorts of siblings who remain together for many months prior to individual dispersal. The retreats provide protection from predators, weather, and for protection of egg sacs and developing offspring. All three social huntsman species live exclusively in retreats with specific features under certain types of exfoliating bark, flat rocks on granite headlands, or rolls of bark. The four social species differ from each other in their age of dispersal, tolerance of immigrants, prey sharing, and number of sibling cohorts living together. Here I examine how some of the ecological forces, particularly saturated habitats with limited retreat options for larger social groups and retreat size, have influenced the social ecology of these species.