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Workers, queens, and death – aging and reproduction in social insects

Jürgen Heinze

Biologie I, Université de Regensburg, D-93053 Regensburg

Juergen.Heinze@biologie.uni-regensburg.de

Why organisms age and die and why they do so at very different paces are still major puzzles in evolutionary biology. Perennial social insects (honey bees, ants, termites) provide suitable systems to tackle this fundamental problem. In particular ants are characterized by the extraordinarily long lifespan of their reproductive females (queens), which may live tens or hundreds of times longer than non-social insects of similar body size. Furthermore, while many animals show the well-known trade-off between longevity and reproductive success, highly fertile ant queens by far outlive their non-reproductive nestmates.

In my talk I will summarize recent findings from our studies on *Cardiocondyla* ants, which indicate that both mating and egg laying prolong queen life span. Furthermore, our studies show that individual life span is greatly affected by the queen's social environment without any changes in external mortality risks. The genome of *Cardiocondyla obscurior* has recently been fully sequenced and we currently use functional genomic and bioinformatics methodology to disentangle the genomic interrelations between reproduction and senescence in social evolution.