

**OR367***Reproductive interference between honeybee species in artificial sympatry***Emily Remnant**, Anna Koetz, Ken Tan, Eloise Hinson, Madeleine Beekman, Benjamin Oldroyd

Reproductive isolation between closely related species is often incomplete. The Western honeybee, *Apis mellifera*, and the Eastern hive bee, *A. cerana* have been allopatric for millions of years, but are nonetheless similar in morphology and behaviour. During the last century the two species were brought into contact anthropogenically, providing potential opportunities for interspecific matings. Hybrids between *A. mellifera* and *A. cerana* are inviable, so natural interspecific matings are of concern because they may reduce the viability of *A. cerana* and *A. mellifera* populations - two of the world's most important pollinators. We examined the mating behaviour of *A. mellifera* and *A. cerana* queens and drones from Caoba Basin, China and Cairns, Australia. Drone mating flight times overlap in both areas. Analysis of the spermathecal contents of queens with species-specific genetic markers indicated that in Caoba Basin, 14% of *A. mellifera* queens mated with at least one *A. cerana* male, but we detected no *A. cerana* queens that had mated with *A. mellifera* males. Similarly, in Cairns, no *A. cerana* queens carried *A. mellifera* sperm, but one third of *A. mellifera* queens had mated with at least one *A. cerana* male. No hybrid embryos were detected in eggs laid by interspecifically-mated *A. mellifera* queens in either location. However *A. mellifera* queens artificially inseminated with *A. cerana* sperm produced inviable hybrid eggs, or unfertilised drones. This suggests that reproductive interference will impact the viability of honeybee populations wherever *A. cerana* and *A. mellifera* are in contact.