

ANT ADULTERY, BRAINIAC STUDS, NO FATHERS REQUIRED



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Passionate love, whirlwind romance, happy monogamy: That's what it's all about—on Valentine's Day, that is. But how would you know if your sweetheart is cheating on you? Humans offer certain cues: lipstick on a shirt collar, "I'll be home late again" phone calls, or an unfamiliar item of clothing in the house. Other animals send much clearer signals about their reproductive frolicking.

Signals like **CUTICULAR HYDRO-CARBONS**. Ants use these molecules for communication—to identify nestmates, to discern the job another ant is performing, and to advertise availability for reproductive liaisons. In colonies with a queen, however, being a fertile worker ant is highly frowned upon—mating and reproduction are solely the queen's domain.

Even so, sometimes maverick workers in colonies of *Aphaenogaster cockerelli* ants do become fertile despite the presence of a queen. But these "femme fertiles" wear an entomological scarlet letter that shows up in their cuticular hydrocarbon profile. The chemicals draw the ire and aggression of other workers, researchers Adrian A. Smith, Bert Hölldobler, and Jürgen Liebig, all from Arizona State University, find (*Curr. Biol.* **2009**, *19*, 78). The researchers applied pentacosane to nonreproductive workers to imitate fertile workers' hydrocarbon profile. The treated ants were bitten, held, and immobilized by nestmates in colonies with a queen, but treated ants from colonies without a monarch were left alone. That makes sense, the researchers point out, because in queenless colonies, the workers must reproduce all by themselves.

Reproductive workers sport some of the same compounds as the queen but not all. That difference, Smith says, enables workers to distinguish between their main lady and their cheating brethren.

Evolutionary psychologist Mark D. Prokosch of Elon University, in North Carolina, and researchers at the University of California, Davis, have shown once again that **WHAT WOMEN FIND ATTRACTIVE** in men is not always predictable. The research team administered a standard intelligence test to 15 men and then



Beating bugs: Ant colonies with queens police reproduction by assaulting fertile workers.

filmed the subjects engaging in a variety of activities (*Evol. Hum. Behav.* **2009**, *1*, 11). Some of the activities included reading news headlines, answering open-ended questions about life, and tossing a Frisbee around.

The researchers then showed the videos to 204 female undergraduates, who were asked to rate the men on intelligence, creativity, and overall attractive-

ness as qualifications for a short-term versus a long-term mate. Looks topped the list of desirable characteristics for a long-term mate, but intelligence and creativity weighed more heavily than previously thought for choosing both short-term and long-term mates. A ripped body and irresistible smile may snare a woman's gaze, but a guy with a pumped brain suggests to her that he can contribute better genes and be a better provider for children, the researchers conclude.

For women who just can't choose, shark-envy could become a problem. A female blacktip shark named Tidbit that recently died during a routine physical exam at the Virginia Aquarium, in Virginia Beach, turned out to be carrying a fetal pup. Yet there were no males in the tank that could have been party to the conception. Researchers at the Institute for Ocean Conservation Science at the State University of New York, Stony Brook, obtained a **DNA FINGERPRINT** for Tidbit and her near-term fetus in a fashion identical to a human paternity test. The fingerprint, usually bearing genetic material from both a mother and father, contained only Tidbit's stamp: No genetic material from a father was present. It seems that parthenogenesis, reproduction without fertilization, was at work, although it doesn't appear to be an option for human females just yet. Happy Valentine's Day.

KENNETH J. MOORE and **NOAH U. SHUSSETT** wrote this week's column. Please send comments and suggestions to newscrip@sacs.org.

Good news for nerds: Women find them appealing as short- or long-term mates.

ADRIAN SMITH

SHUTTERSTOCK

