

Science News

Tough policing deters cheating in insects

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Coercion plays a big role in keeping workers in line in insect societies--in some species, as big a role as family ties do, according to a new study.

In many wasp and bee societies, workers are anatomically equipped to lay their own eggs, but rarely do so while their queen's alive. Instead, they raise the queen's offspring.

Several forces could drive such altruistic babysitting, and a research team came up with a way to compare the strength of two forces: family ties and police work. The queen's offspring are the workers' siblings and half-siblings, so raising them could be a worthwhile reproductive effort for the workers. Meanwhile, in the insect version of a police crackdown, the queen or workers kill an egg that was laid illicitly by a worker (SN: 3/19/05, p.184).

Francis Ratnieks of the University of Sheffield in England suggests that especially tough, thorough policing might avoid the wasted effort that goes into producing an illicit egg.

To investigate, Ratnieks and Tom Wenseleers of the University of Leuven in Belgium collected police records from honeybees and nine Vespidae wasp species. The researchers found a link between policing and egg laying: The more thorough the policing was in a species, the less likely the workers were to lay illicit eggs.

In contrast, the closer the family ties within a species' colonies, the more likely the workers were to lay illicit eggs while the queen was alive. So, in insect species with policing, that force does more to keep the crime rate down than family ties do, the researchers argue in the Nov. 2 Nature. --S.M.

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