

## Female Pronghorns Choose Mate Based on Substance as Well as Show

October 23 2006

When a female animal compares males to choose a mate, she can't order a laboratory genetic screen for each suitor. Instead, she has to rely on external cues that may indicate genetic quality. Until now, biologists have focused on elaborate ornaments, such as the peacock's tail, as cues that females might use.

The thorny problem has been to explain how the correlation between male genetic quality and ornament quality can be maintained. If an ornament gives a male a mating advantage, then evolution would rapidly move to the point where all males, regardless of genetic quality, have high-quality ornaments.

"Female mate choice is likely a very important evolutionary force that does much more than select for ornaments in a few species," said John Byers of the University of Idaho. "It may be universally important in maintaining population genetic quality."

In work supported by the National Science Foundation (NSF), Byers has shown that certain females can choose good genes in a species that does not have ornaments, such as the American pronghorn, an antelope-like mammal that evolved in North America. Byers has been studying pronghorn at the National Bison Range, a 30-square-mile National Wildlife Refuge in northwestern Montana, for 20 years, and recognizes all individual pronghorn in the population.

In recent research, Byers and his coauthor Lisette Waits, also of the



University of Idaho, obtained genetic markers for all pronghorn individuals in the population and assigned paternity to the offspring.

"The females' mate sampling creates a small group of males that each year sire more than one-half of all young," said Byers, who is currently serving as a program officer in NSF's biological sciences directorate. "These are the males that, under the stringent female sampling process, have shown they are the most vigorous."

The offspring of these vigorous males also are more likely to survive to weaning, Byers found. "This advantage is due to faster growth rates," he said.

Byers also showed that these faster-growing fawns suckle less from their mothers than do the offspring sired by less-attractive males. He monitored the population for several years, and found the offspring of frequently chosen males continued to have a survival advantage for as long as five years.

The research results appear in this week's issue of the Proceedings of the National Academy of Sciences (PNAS).

Source: National Science Foundation

Citation: Female Pronghorns Choose Mate Based on Substance as Well as Show (2006, October 23) retrieved 28 April 2024 from <u>https://phys.org/news/2006-10-female-pronghorns-based-substance.html</u>

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