



### Sciencewatch – Older and Wiser

What teenage girl wouldn't be impressed by a night out on the town with a young man driving a Ferrari? Hopefully, as she gets older she uses more sensible measures to assess a potential mate. According to Seth Coleman, a doctoral student at the University of Maryland in College Park, bowerbirds do just that. Bowerbirds comprise 20 species of passerines native to

Australia and New Guinea. The name "bowerbird" stems from the elaborate U-shaped structure made of sticks to form a platform and two parallel walls without a roof, which males build to attract females for courtship and mating. The bower is not a nest but is built to attract females to view the spectacular courtship displays of the owner and engage in copulation. The bower is also decorated with colorful objects such as blossoms, shells, parrot feathers and even items stolen from nearby farms. Bowerbirds are favorite subjects of behavioral ecologists who wish to understand how sexual selection drives males to produce elaborate structures and courtship behaviors.

Coleman has been studying satin bowerbirds (*Ptilonorhynchus violaceus*) that live in Australia and has published, along with Gail Patricelli and Gerald Borgia, some results in the April 15, 2004 issue of the journal *Nature*. According to Coleman the choice of a



Male satin bowerbird and bower

mate by the female occurs in three stages. In the first stage, *visits*, females visit bowers when the owner is absent to evaluate their construction and decorations. Symmetry of the bower along with the types of decorations influences her choice and she may visit several times before moving to the next stage, *pre-nest-building courtship*. In this stage the female returns to selected bowers when the male is present. She enters his bower while he engages in courtship display, which includes ruffling feathers and spreading and flapping his

wings. In addition, he makes many sounds including buzzing noises and will even mimic other birds. She then goes off to build a nest, returning about a week later to engage in the third stage, *post-nest-building courtship*, where she again approaches selected males at their bowers to view more displaying. Finally, she chooses one mate by copulating with him at the bower.

Coleman and his team decided to augment half of the two dozen bowers under study by providing the males with blue tiles and blue plastic strands. Satin bowerbird males are especially fond of bright blue objects, which they strew around the bower. Within hours each of these experimental males had placed them all on his bower platform. Next they monitored the responses at each stage of mate choice for over 50 females to see if females prefer males with extra blue objects. They found that while young females (first year) were influenced by the extra decorations to mate preferentially with the experimental males, older females (second and third year) were not. The older females showed up as frequently for *visits*, but fewer and fewer returned at subsequent stages.

Apparently older females place greater emphasis on how well males can perform their courtship and not on how dazzling a bower they can build. In contrast, younger females assess a male's fitness more by his bower than his courtship. Earlier the team had shown that younger females are frightened off by the aggressive displays of courting males more often than older females. This, they believe, is the reason why younger females depend more heavily on bower decorations for mate choice, but with experience they make better sense out of male courtship displays. Whatever causes the dichotomy of mate choice between younger and older females we can readily see what drives the male to be multi-talented. If successful he can mate with as many as 25 females per season. So how much is a Ferrari?

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Great bowerbird bower; Philip Hamilton, by permission