

## Better Red than Dead

**G**ouldian finches (*Erythrura gouldiae*) are popular pets but endangered in their homes in the Australian wet tropics. The males have dazzling green wings, a blue rump and collar and yellow breast. Their heads, however, can be red, black or yellow, depending on a combination of two genes.

The redheads are naturally more aggressive than those with other colouring, even though their colouring intimidates rivals to such an extent that they don't really need to be aggressive.

Dr Sarah Pryke, a Research Fellow in the School of Biological, Earth and Environmental Sciences at the University of NSW, found that when two males came into dispute over food, "birds were reluctant to compete with opponents that had red-dyed heads, demonstrating that they pay attention to this signal of dominance and use it to avoid getting into fights".

Fair-headed finches were at the bottom of the pecking order. In contests between two birds with the same head-colouring, intensity of shade proved a good predictor.

Contests between black- and yellow-topped birds were more competitive than those involving a redhead because each bird seemed to think it had a chance of victory.

Pryke tried dyeing the finches different colours. When redheads were dyed a different colour they had to work harder to win their battles with other birds. "Red-headed birds that were temporarily dyed were still the most aggressive," she said. "This shows that redheads are truly very aggressive and that it pays black- and yellow-headed birds to avoid fights with them."

Red feathers are associated with genuine toughness, rather



than just being a form of bluff. Pryke notes that red colouring represents an advantage in some other bird species and, more speculatively, in human sporting contests.

The obvious question is how non-redheads survive. A gene that provides such an advantage in getting access to food and mates should have quickly swept the pool.

Yet black-headed birds are the most common in the wild, although the blondes are rare enough that Pryke believes it is "unlikely that it will be particularly important in the larger evolutionary picture".

Pryke doesn't know the answer to this puzzle and can only surmise that black feathers up top are associated with some as-yet undiscovered advantage such as greater safety from predators.

## Another Scientist Named Australian of the Year

**B**eing Australian of the Year is a busy job, but Prof Ian Frazer does not expect it to interfere with his efforts to prevent cervical cancer. On the contrary, he believes his award will provide him with the opportunity to ensure that the vaccine he invented will reach women who might otherwise not be able to afford it.

"It's a great privilege to be recognised by Australia as the 2006 Australian of the Year," Frazer said, "but it's an even greater privilege to be able to do something tangible for the health of Australian women, and for women throughout the world".

Frazer expects the vaccine against the human papilloma virus to be on the market by mid-year. Potentially it could eliminate cervical cancer within a generation, although further work will be needed to prevent those already infected with the virus from getting sick (AS, Jan/Feb 2006, p.9).

Frazer noted that cervical cancer currently causes far more deaths than it needs to. "Women living in poverty in the developing world, where Pap smears are not widely available, account for most of the 275,000 deaths from cervical cancer each year," he said.

Noting that Dr Jian Zhou, with whom he developed the vaccine, was born in China, where the largest numbers of women at risk of cervical cancer live, Frazer said: "I feel I have a responsibility to ensure that they and other women in developing countries have affordable access to the vaccine that he helped develop".

Frazer welcomed the intention of drug companies to offer the vaccine at a lower cost in developing countries. "However, 'cheaper' does not necessarily mean it will be affordable in poor nations. I intend to keep a close eye on the global distribution of the vaccine, with the aim of it being available to the women and girls who most need it."

Frazer is the sixth medical researcher in 10 years to become Australian of the Year, following in the footsteps of Dr John Yu, Prof Peter Doherty, Sir Gustav Nossal, Prof Fiona Stanley and Dr Fiona Wood. Frazer noted that, like Wu, Nossal and Wood, he had immigrated to Australia.

