



COMMENT

Killercats

Terence Blacker on the rise of the bloodthirsty moggie

PAGE 4



SCIENCE

Bright birds

It's not just the males who get to wear beautiful plumage

PAGE 8

FRIDAY REVIEW

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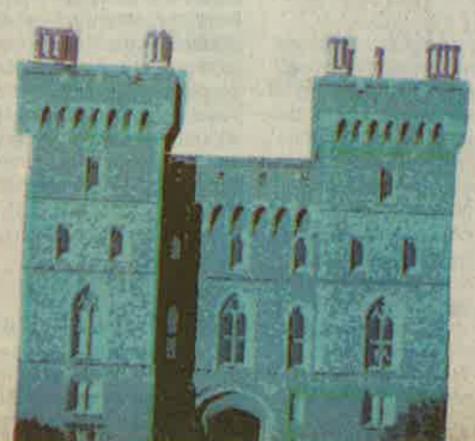
THE SMART SHEILA'S GUIDE
TO BECOMING A

BONZA-FOODIE

CON WOMAN

(or how an Aussie brothel madame and her 'wife' took the British aristocracy for a ride)

BY PAUL VALLELY





A blind spot for female beauty

In the animal kingdom, the males got all the looks – or so the story goes. But many females are also winners in the beauty stakes. Sanjida O'Connell asks why we ignore them

Darwin noticed it and yet it's been ignored for the past 130 years. Male animals are often decorative or showy, from the brilliant plumage of birds of paradise to the steely antlers of male stag beetles. Females, in contrast, are drab creatures who lurk in the undergrowth.

At least, that's been the received wisdom. But Dr Trond Amundsen, from the Norwegian University of Science and Technology in Trondheim, is attempting to redress that balance. According to him, many females are brightly coloured and almost nobody has asked why; researchers have concentrated, instead, on solving the problem of ornamented males. "It's so striking that scientists have been faced with tremendous variability and beauty in both sexes – and they've only looked at one," says Dr Amundsen.

The current explanation for huge horns of stags or trailing feathers of peacocks is that they are to attract females. Moreover, they can be indicators of good genes: only healthy males, relatively free from parasites, sport large symmetrical appendages or have glossy fur and feathers.

But extravagant ornamentation is not uncommon in females: some species of sea bird such as auks or cormorants have colourful beaks or conspicuous crests; many female fish are colourful, as are dragonflies and beetles; female reindeer and antelope possess horns as well as the males.

However, in general, if females are brightly coloured they tend to be similar to males. Magpies, for instance, are a classic example, since both sexes have striking black and white plumage and long tails. Only in a few species, such as the two-spotted goby, the peacock wrasse, and sunangel hummingbirds, do females branch out on their own.

The great Victorian naturalist Alfred Wallace, in an essay written shortly before Darwin's *Descent of*

Man was published, suggested that females were drab because they needed to be camouflaged when incubating eggs. In species where the female is hidden from predators, such as parrots that nest within hollow trees, females can be as colourful as their mates.

Darwin wasn't convinced, and thought that perhaps female coloration was linked to male decoration. Female offspring inherit their father's genes for bright colours or big fins. "We shouldn't assume that female ornamentation is only a by-product of the males' ornamentation," says Dr Amundsen. "There must be some correlation," he adds. "Males and females share the same genes, and it's striking that where females are ornamented, they are

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like the males. But this could be a starting point – sharing the male's genes is just the building blocks for female ornamentation."

In other words, Amundsen believes that although females share male genes for ornamentation, there may be specific reasons to explain their looks which researchers have practically ignored until recently. "The old story is that males court females: males are eager and females are coy. But we're constrained by this kind of thinking," says Dr Amundsen. One of the creatures he studies, the two-spotted goby, bucks the trend: by the end of the season, mature females are desperate to mate and chase the males around.

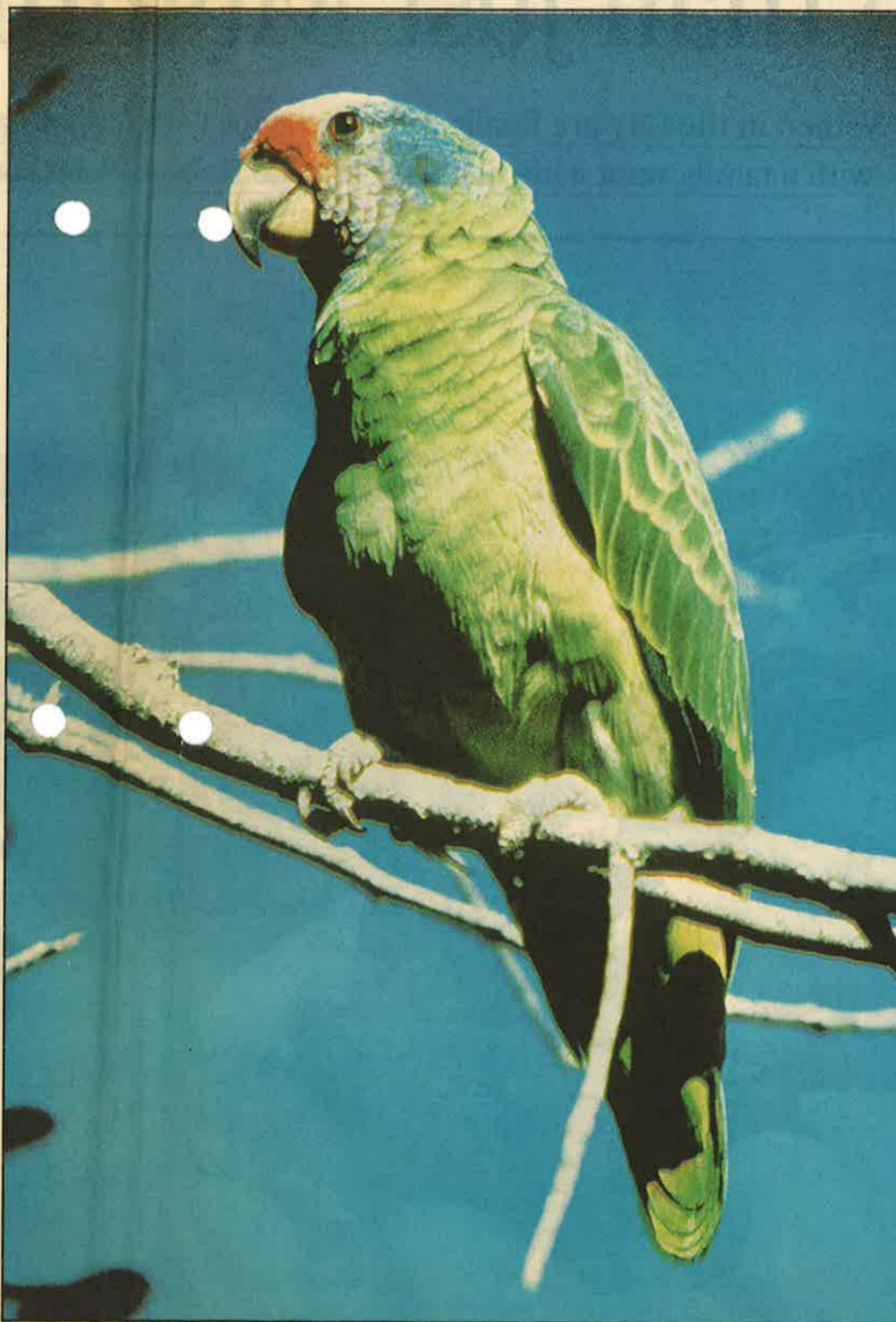
He also works with bluethroats, a brilliantly ornamented European bird that lives in Scandinavian forests. Field guides portray the fe-

males as drab, but Dr Amundsen has discovered a wide range of variability: some are dull, while others are highly colourful. Both sexes moult to a drabber coloration during the winter, so there must be some reason, and potentially a cost, in having bright summer feathers. Therefore, he argues, there must be a reason why some females are brighter than others. What Dr Amundsen also discovered was that males choose the brightest females as their mates early on in the summer when there are plenty of females around.

Dr Alex Roulin, based at Cambridge University, has shown that male barn owls are also choosy: they pick females who have the most spots on their chests, and the more spotty a female, the greater her resistance to parasites.

Another reason could be that they are using their weapons, such as horns, or their colours as signals, in fights with other females. Like males, they might be competing for mates. "We look at competition very simplistically," says Dr Amundsen. "But female competition is very subtle. It's based more on signals, but it could be a powerful force nonetheless." Female toucans, parrots, some hummingbirds, lizards and a few mammals compete among each other for males. But not enough research has been done to prove this is a major reason for female ornamentation. Why has so little research been done in this area? "Some might argue that it's because of a male-biased approach," says Dr Amundsen. "Male researchers are asking what makes a male popular. There's a certain reluctance to take an interest in female ornaments."

Work on females has mainly been done by one of the few female researchers in the field, he says. "Instead of opening our mind to the variety of nature, we're constrained by our perceptions. My hope is that more researchers will open their eyes to the beauty of females."



Males don't have a copyright on colour; many females, like this parrot, are bright birds

UPDATE

ORCHESTRAL CONDUCTORS with an uncanny ability to spot dud notes have trained their brains to act as direction finders, scientists have discovered. A team led by Thomas Munte, professor of neuropsychology at the University of Magdeburg in Germany, found that conductors can identify a bad note from any direction.

Professor Munte said that the skill is made possible as a result of a conductor's power to decipher the whereabouts of a sound. Professor Munte set up an experiment using seven conductors, seven musicians and seven non-musicians. The volunteers faced three speakers emitting different noises at random. Another set of three speakers were positioned to their right. The study, published in *Nature*, revealed that whereas everyone could distinguish which noise was coming from the speakers at the front, only the conductors could do it with the speakers located on the right.

A SPECIES of fern has been found to soak up the arsenic from surrounding soil, raising the possibility that the plant could be used to clean up toxic waste. So efficient was the fern, that the amount of arsenic in some eclipsed the threshold level of 5 parts per million deemed to be an industrial-level hazard by the US Environmental Protection Agency.

Professor Lena Ma, who carried out the research at the University of Florida, said, "It has great potential for remediating contaminated soils. Though why it accumulates is a mystery."

Results of greenhouse experiments, published in this week's *Nature*, showed concentrations of the heavy metal in the fern's fronds that revealed that a startling 2.3 per cent of the plant was actually composed of arsenic.

STEVE CONNOR