

Lizard uses UV signals to ward off rivals

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(PhysOrg.com) -- We're all familiar with different animal species using a variety of strategies to attract a mate or chase off an aggressor or a rival. For birds, it's often a dazzling display of plumage or a deafening vocalisation.

In other species, assuming an aggressive [posture](#) is a popular approach to marking a territory or keeping a rival at bay. But for the Augrabies flat lizard, which makes its home in [South Africa](#), the approach is more subtle.

Male Augrabies flat lizards flash covert ultraviolet signals from a patch located on their throats to chase off their rivals. The use of colour patches to communicate social information is used by many animals, says Associate Professor Martin Whiting from Macquarie University, who led the study which was published earlier this month in the

[Proceedings of the Royal Society B.](#)

Whiting and his team of researchers were able to confirm that the lizards have a high number of UV photoreceptors. This large number enhances their ability to determine their rival's fighting ability because of their greater ability to discriminate between male throat colours. By being able to detect slight variations in UV-throat color, they can avoid potentially costly battles with rival males.

Previous studies on the lizard's signalling behaviour have already shown that the throat patches of high quality males reflect a purer UV than those of weaker males, said Whiting, who works in the University's Department of Biological Sciences in the Division of Brain, Behaviour and Evolution.

To determine if and how well the Augrabies flat lizard could see UV light, the researchers analysed electrical impulses in the lizard's optic nerves when their retinas were triggered with lights of different colours. The result was compared with a similar species which had previously been studied. The Augrabies flat lizard was found to be three times more sensitive to UV than the similar species.

Why UV is favoured over other colors by some species, such as the Augrabies flat lizard, has been a source of great debate. One hypothesis is that UV has physical properties that make it a particularly sensitive indicator of male quality and therefore, allows animals to more accurately gauge the quality of a rival or potential mate. Augrabies flat [lizards](#) seem to support this idea and may be the ideal system for further investigation of this fascinating channel of communication, Whiting said.

Provided by Macquarie University

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