

Rocking like a bat

It's official – bats are the world's loudest flying animals. Their high-pitched calls may be too high for humans to hear, but they can reach sound volumes greater than those of a rock concert.



DISCOVERIES

A bug and sulphur hell for Mexican cavefish

When bigger is definitely not better for the boys.

New research shows that an insect predator is having a big impact on the morphology of the male Atlantic molly.

Atlantic mollies are live-bearing toothcarps 3–4cm in length. They usually live in shallow freshwater rivers, but also inhabit two foul-smelling, sulphidic limestone caves in the Mexican state of Tabasco, where the oxygen-poor waters are milky white from heavy concentrations of hydrogen sulphide.

To cope, the mollies respire at the water's surface, where oxygen levels are highest. But lingering here exposes the fish to giant water bugs *Belostoma* sp. These predators sit at the water's edge, their hindlegs anchored to the rocks and their hook-shaped forelegs dipping into the water, waiting for an opportunity to pounce.

Once a bug has seized a fish, it injects it with paralysing toxins to

liquefy its tissues, then slurps up the soup. With this ambush strategy, you might think the bugs would happily take whatever food they can get. But ecologist Michael Tobler and colleagues of Texas A&M University discovered that giant water bugs are actually quite fussy, preferring to wait for larger fish. The scientists also found that the bugs devour more males than females, since male mollies need additional energy to search for mates, and therefore spend more time respiring at the surface.

Female cave mollies usually favour bigger mates, but the researchers discovered that the male-biased predation pressure is keeping male size in check. "The water bugs are actually mediating natural counter-selection against sexually selected traits," says Tobler. It seems that if you're a male molly, having a smelly home is the least of your troubles.

Elie Dolgin

SOURCE: Naturwissenschaften, doi: 10.1007/s00114-008-0382-z **LINK:** tinyurl.com/6hojp9



Atlantic mollies adapt well to life in sulphidic waters, less so to the monsters lying in wait at the surface...

FISH AND SULPHUR BYTES

» Atlantic mollies and related live-bearing toothcarps are the only vertebrates known to inhabit freshwater sulphidic springs.

» In their dark habitat, female cave mollies discriminate between male sizes using a sensory organ known as the lateral line. River-dwelling females assess potential partners with visual cues.

» Some fish species, such as the armoured catfish *Hypostomus plecostomus*, can handle low oxygen or sulphidic conditions by swallowing air bubbles and soaking up oxygen through their intestines.

» Male-biased predation in other species is usually associated with flamboyant ornamentation or elaborate courtship displays.

Michael Tobler

Biological rhythms of pets

Revealed: why pet hamsters can stay up all night.

If you've ever lain in bed cursing your pet golden hamster's late-night exercise-wheel regime, you might be surprised to learn that it is not naturally nocturnal. An international team of scientists led by Robert Johnston at Cornell

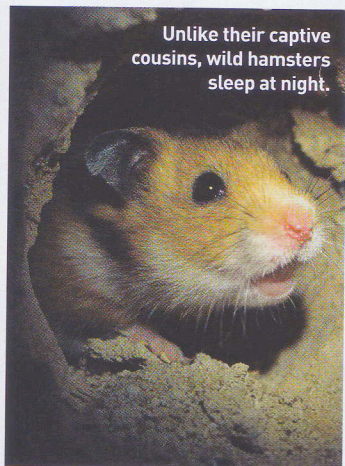
University compared the activity of captive females with that of free-living individuals in southern Turkey. The caged hamsters were most active after lights out and continued to scamper around throughout the night.

In contrast, the wild individuals were also active at dusk, but spent most of the night in

their burrows before a second burst of activity around dawn. This crepuscular behaviour is probably the consequence of avoiding nocturnal predators and searing daytime temperatures, which put metabolically high-revving mammals under thermal stress. Balancing such factors requires hamsters to be flexible, suggesting there is still much to learn about how biological rhythms are determined.

Nick Atkinson

SOURCE: Biology Letters doi: 10.1098/rsbl.2008.0066 **LINK:** en.wikipedia.org/wiki/Hamster



Unlike their captive cousins, wild hamsters sleep at night.

Heidi & Hans-Jürgen Koch/Minden/FLPA