

Tale of Two Fishes

Two different populations of Mexican molly fish that share a habitat with a fish-eating water bug are showing how predators can shape evolution.

Sharp-eyed Atlantic molly fish swim in open streams right next door to small-eyed, dark-dwelling cave mollies, but the two populations won't mix. To find out whether the bug is keeping them apart, evolutionary ecologist Michael Tobler of Texas A&M University in College Station collected 94 fish from each habitat, paired one from each habitat in bottles, and threw in a water bug. He placed half of the bottles in the cave and the rest in the open stream.

When Tobler checked 24 hours later, he found that the water bug could be keeping the fish in their place. The mollies outside their natural environments were more likely to be attacked, he reported online 14 May in the journal *Biology Letters*. The study adds an "important contribution" to evidence that predation can play a major role in the speciation process, says R. Brian Langerhans of the University of Oklahoma Biological Station in Kingston. Tobler says the cave fish have enhanced nonvisual ways of sensing predators that don't help them in the light, whereas the surface fish, which rely on their eyesight, are at a loss in the dark.



Undersea Metropolis

The ancient Greek town of Pavlopetri has lain under the sea, just 50 meters off the south-eastern tip of the Peloponnese, for more than 3000 years. After a brief flurry of research when the town was discovered in 1967, Pavlopetri has been ignored by science. Now, however, a



Remains of building with stone threshold.

team led by archaeologist Jon Henderson of the University of Nottingham in the United Kingdom plans to use new sonar technology to map the ruins and study the site.

The former town, probably submerged by earthquakes in about 1000 B.C.E., is near the present-day port of Neapolis. It lies under 3 to 4 meters of water, where the sandy seabed gives way to 500 square meters of stone remains of buildings, streets, and graves from the

Mycenaean civilization (about 1680 to 1180 B.C.E.). "The power of the Mycenaeans largely came from their dominance of the eastern Mediterranean, but we know almost nothing about their harbor towns," says Henderson. Unearthing Pavlopetri could "give detailed insights" into Mycenaean sea trade, says archaeologist Geoff Bailey of the University of York, U.K.

Ancestral Imprint

Just as the prospect of hanging concentrates the mind, information related to survival sticks in it. To test that proposition, cognitive psychologist James Nairne of Purdue University in West Lafayette, Indiana, and colleagues divided 250 students into four groups. Two groups were told to imagine themselves hunting or gathering for subsistence. The others were told to think about collecting food as part of a contest.

The researchers then gave each student the same 30 random nouns, such as chair, snow, and orange, and told them to associate the words with their scenario. A paper published online 5 May in *Psychological Science* reports that students in the survival scenario later remembered more of the words than those in the game-playing scenario, suggesting that connection with a life-or-death situation improved their memory.

The human mind "continues to bear the footprint of ancestral selection factors" that shaped cognition, Nairne says. Evolutionary psychologist Rick O'Gorman of Sheffield Hallam University in the United Kingdom calls the research "another link in the chain toward demonstrating the value of considering an evolutionary perspective on all areas of psychology."

SPREADING THE FLU

Even a pandemic can have a silver lining. A flood of visitors to an Irish exhibition about epidemics has become a mother lode of data on the spread of disease.

On 17 April, the Science Gallery at Trinity College Dublin launched an exhibit called *INFECTIOUS*. To give visitors a firsthand feel for "epidemic processes," everyone gets a radio-frequency identification tag. Tags are initially "uninfected" but can get "infected" by proximity to "infected" staff or visitors. A computer tracks everyone, mapping the spread of the infection.

The timing turned out to be propitious. Soon after the opening, swine flu panic hit. "We've had an amazing response," with more than 13,000 visitors so far, says gallery director Michael John Gorman. The data are flowing to computers in Italy, where epidemiologists at the Institute for Scientific Interchange Foundation in Turin are modeling epidemics. The experiment "does seem to address human-to-human contact at the most local level, which is the least well understood of organizational scales," says Oliver Pybus, an epidemiologist at the University of Oxford in the United Kingdom.

