

RESOURCES

Diagnosing Feverish Reefs

Coral reefs are supposed to be as colorful and vibrant as a Mardi Gras parade, not tattered and wan (above). This coral has fallen victim to bleaching, which jeopardizes reefs worldwide. Stressed by heat, pollution, disease, or ultraviolet light, the animals whose skeletons form the reef lose their nourishing symbiotic algae. Coral Bleaching Indices, a site from the U.S. National Oceanic and Atmospheric Administration, uses satellite measurements of sea temperatures to help scientists pinpoint where corals are at risk. Monitoring 24 reefs in the Indian, Pacific, and Atlantic oceans, the site gives each a vulnerability score based on how long water temperature stays above the average maximum for the time of year. Links take you to global maps of bleaching hot spots and animations that chart their changing locations.

www.osdpd.noaa.gov/PSB/EPS/SST/dhw_news.html

DATABASE

Dissecting the Cell's Power Plant

The mitochondria that fuel cellular activities tote their own set of genes, betraying their origins as bacterial interlopers. This genome database, sponsored by four German universities and institutions, boasts data on hundreds of mitochondrial genes and their proteins. Whether you're interested in humans, mice, or other model organisms, you can find sequence and function information for genes in the mitochondrial DNA and for related genes in the cell's nuclear DNA. The site also catalogs diseases triggered by mutations in these genes, and you can track down proteins by their function, location within the cell, and other attributes.

mips.gsf.de/proj/medgen/mitop

IMAGES

Tongue Tricks

Woe betide the fly that comes within range of the Sardinian salamander *Hydromantes supramontis* (above). The slimy marksman can fire its sticky-tipped tongue more than 6 cm, nearly the length of its body. Watch more salamander feeding feats at this movie site from functional morphologist Stephen Deban of the University of Utah, Salt Lake City. A dozen clips, shot with high-speed cameras at up to 1000 frames per second, undercuts the animals' reputation as placid plodders. Sure-shot salamanders such as *Hydromantes* can fully extend their tongue and pick off an unwary insect within 20 milliseconds. Other species forgo such precision. The hellbender, a wrinkly stream-dweller from the eastern United States, vacuums up anything in the vicinity by rapidly sucking water into its mouth.

socrates.berkeley.edu/~deban/feedingmovieindex.html

EDUCATION

Shedding Light on Spectroscopy

What does nuclear magnetic resonance (NMR), the most widely used method for determining chemical structures, have to do with microwaving a turkey? Find out at the Science of Spectroscopy, a Web site designed to teach undergraduates about the use of light in chemical analysis. It takes a "spectroscopy in your everyday life" approach to teaching, says co-developer Stewart Mader, a chemistry instructor at the University of Hartford, Connecticut. The site begins with an introduction to light and its properties and builds toward applications of spectroscopy in consumer products, medicine, and space science.

For example, students will learn that NMR involves spectroscopy much like a microwave oven does. To determine where carbon and hydrogen atoms are located in a molecule, NMR uses low-energy radiation to stimulate the nuclei. Microwaves use slightly higher energy radiation to make water molecules oscillate at 2.45 billion times per second, causing the heat-producing friction that cooks food. Once the principles are clear, students can explore different techniques such as mass spectrometry, scanning electron microscopy, NMR, and interferometry (above) in greater detail, using virtual instruments that create sample data sets.

spectroscopy.hartford.edu

WEB TEXT

Keep 'em Alive and Well

If you think your lab mice have come down with mycoplasmosis or suspect that your parrots have

contracted Pacheco's disease, a sometimes fatal viral ailment, you need to consult the Merck Veterinary Manual. Although the newly released online version of this standard reference doesn't cover all creatures great and small, it does run down many of the diseases and conditions that can strike a variety of research animals, from turtles to fish to monkeys. Besides the latest on causes and treatments, the free text also amasses a wealth of information on hygiene, nutrition, and disease prevention. Vaccinations can protect those parrots from Pacheco's disease, for example, and antibiotics might fend off mycoplasmosis.

www.merckvetmanual.com

Send site suggestions to netwatch@aaas.org. Archive: www.sciencemag.org/netwatch

