

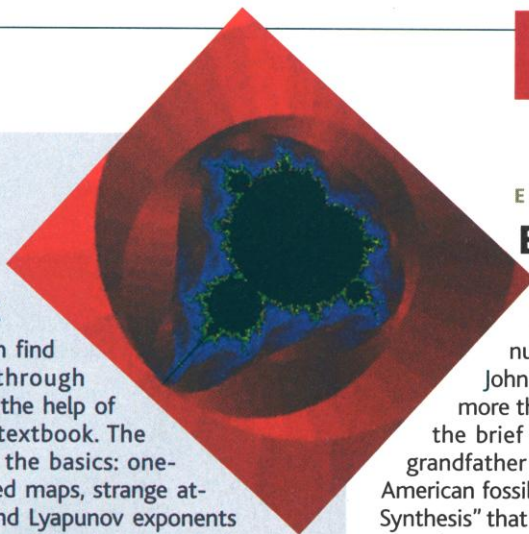
EDUCATION

Chaos Crib Sheet

Curious readers can find an orderly path through chaos theory with the help of The Chaos Hypertextbook. The quirky site covers the basics: one-dimensional iterated maps, strange attractors, fractals, and Lyapunov exponents—mathematical quantities that measure how chaotic or well-behaved a system may be. "I was a graduate student at Columbia and was studying chaos myself, and I wanted to write it up in a way that teachers could use," says Web master Glenn Elert, a physics teacher at Midwood High School of Brooklyn College in New York City.

The site moves through material too quickly to serve as a textbook for a class, but Elert's insightful mediations should make fruitful supplementary reading for an undergraduate or high school student trying to come to grips with concepts such as fractional dimension. The Chaos Hypertextbook offers lovely illustrations and many links to chaos-related software for Mac users, but its real strength lies in its engaging tone. It's like getting a little help from the smartest kid in the class.

hypertextbook.com/chaos



EXHIBITS

Bytes of Biology History

Named for a defunct genus of mammals, Lefalophodon* introduces the early scientists who inspired, shaped, defended, and nurtured evolutionary biology. This who's who by paleobiologist John Alroy of the University of California (UC), Santa Barbara, profiles more than 50 thinkers who worked between 1800 and 1950. Subjects of the brief biographies range from Erasmus Darwin, Charles's polymath grandfather who expressed his speculations on evolution in verse; to the American fossil expert George Gaylord Simpson, who helped forge the "Modern Synthesis" that united genetics, paleontology, and systematics.

Delve into more recent events—the early years of the AIDS epidemic and the growth of the biotechnology industry—through the words of protagonists. The interview texts available at this site from UC Berkeley† date from 1990 to 1997, and others are in the works. The transcripts include the discussions of two San Francisco public health experts on the emergence of AIDS and those of seven scientists on the birth, safety, and commercialization of biotech—including Herbert Boyer, who with colleague Stanley Cohen was the first to slip a gene from one organism into another.

* www.nceas.ucsb.edu/~alroy/lefa/lophodon.html

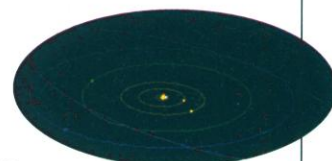
† bancroft.berkeley.edu/Biotech/archive

TOOLS

Sky Watcher's Guide

Stargazers will find an enticing buffet of astronomical data at the Sky View Café Web site. A Java applet on the site creates star charts and doles out almanac data such as the dates of future solar and lunar eclipses and when Mars and the other planets will be 1 minute from setting, one of the best times to spot them just above the horizon. Plug in a date and location, and the site will fashion sky charts marking the positions of planets, stars, and constellations. You can even animate the views, running them forward and backward in time.

www.skyviewcafe.com



RESOURCES

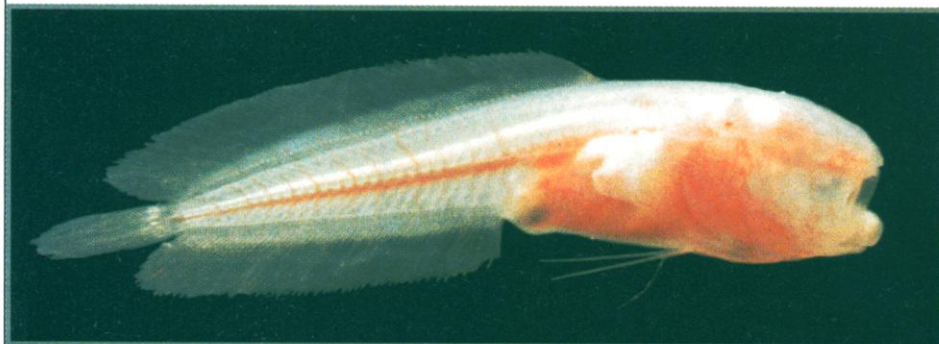
Meet Some Troglodytes

Like many other cave dwellers, this stubby *Ogilbia pearsei* fish from the Yucatán Penin-

sula of Mexico has dispensed with skin pigment and eyes altogether (above). To learn more about the life lurking in underwater caves, try some scientific spelunking at this site from Texas A&M University, Galveston. Aimed at everyone from taxonomists to divers, the cave biology compendium focuses on the denizens of anchialine caves, which brim with salt water but aren't directly connected to the ocean. According to site creator Thomas Iliffe, a marine biologist, some lineages of organisms in these caves might date back to more than 200 million years ago, when the continents were still united.

Exploring submerged caves is "the most dangerous science," Iliffe says, but recent forays by adventurous divers have nabbed 250 new species and even a previously unknown class of crustaceans. At the 3-year-old site, you'll find species lists for the caves of the Bahamas, Bermuda, and the Yucatán. There's also a gallery and technical descriptions of some of the pallid fishes, washed-out crustaceans, sponges, and worms that have evolved in these isolated habitats.

www.tamug.tamu.edu/cavebiology/Intro.html



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

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