NETWATCH

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SITE VISIT

Dinomania

There seems to be no end to the surprises emerging from the boom in dinosaur studies (see p. 1246), like the Report in this issue of a new spinosaur resembling a modern-day crocodile (see pp. 1276 and 1298). Dino knowledge old and new can be found on the Web on scores of sites.

A good starting point is Dino Russ's Lair,* run by Russ Jacobson of the Illinois State Geological Survey. The site is an up-to-date directory that describes scads of links, whether you want to keep up on the latest museum exhibits, take a virtual tour of a dig, or learn how dinosaur eggs are analyzed. Standing out among sites offering original content is Dinosauria On-Line.† Partly a store that sells fossil replicas, it also holds two handy resources: a long list of popular and scholarly articles, and a dinosaur "omnipedia" that includes a dictionary, anatomy info, maps, and charts of geological time periods. Another premier site is the Dinosaur Pages,‡ which briefly describes all dinosaur genera and close relatives, from the early bird *Archaeopteryx* to the 23-meter-long *Apatosaurus*, and their cladograms, or hypothetical family trees. The Net is also the place to follow raging debates among the experts: Just head to the DINOSAUR mailing list.§

* www.isgs.uiuc.edu/isgsroot/dinos/dinos_home.html
† www.dinosauria.com
‡ www.gl.umbc.edu/~tkeese1/dinosaur/index.htm
§ www.cmnh.org/fun/dinosaur-archive

NET NEWS

Policing the Computer Underworld

A computer algorithm first employed to decipher the code of life—DNA and protein sequences—is now finding an unforeseen use in the digital world: as a promising tool for detecting Internet hackers.

The algorithm is called Teiresias, after the blind seer of Greek mythology. Developed in 1996 at IBM's T. J. Watson Research Center in Yorktown Heights, New York, it finds and analyzes patterns in streams of data without resorting to a brute-force search that would tax even the fastest computers. So far, Teiresias has been used mainly in bioinformatics: for example, to correlate common sequences of nucleotides with the function of genes. But on a visit to the Yorktown Heights lab in late 1996, Marc Dacier, manager of IBM's Global Security Analysis Lab in Zurich, learned that he could use Teiresias to comb data from a network server for signs of hackers. His group described their new intrusion detection system at the First International Workshop on Recent Advances in Intrusion Detection (RAID '98) in Belgium in September.

The new system first sifts through data logs for the patterns in a server's normal behavior. This primes the program to watch over the computer's future activities and to spot new patterns caused by attempted hacks. That's a departure from commercial detection products, which rely on recognizing already-known patterns of attack—such as causing part of the computer's memory to overflow with data. With Teiresias's behavior-based analysis, "you don't have to keep learning about new attacks and programming them in," Dacier says. Teiresias successfully detected eight types of attack in a lab test and is on trial on a real-world network. Computer scientist Roy Maxion of Carnegie Mellon University in Pittsburgh says the system "may be a tremendous boon," but a final verdict awaits rigorous performance data.

HOT PICKS

Poster cyberhall. Want to get more feedback on that poster you labored over for your last scientific meeting? Share it with the world at this site, which plans to archive scientific posters and slide presentations from all disciplines for a year at no cost. www.sciencepostersorg

Glowing review. The eerie green glow of algae in a ship's wake may be the best known example of marine bioluminescence, but there are many others, including chemiluminescent squid and deep-sea fish. The Bioluminescence Web Page offers background, photos, and a growing collection of research abstracts on this topic. lifesci.ucsb.edu/~biolum

Backward twist. It's irksome to specialists to see the right-twisting DNA helix published as its mirror image, which isn't known to occur in nature. But journal art departments (even at *Science*) occasionally get it wrong, as you'll see at the Left Handed DNA Hall of Fame. www.lecb.ncifcrf.gov/~toms/LeftHanded.DNA.html

COOL IMAGES

Mining Hubble's Gems

What may look like a hole in the sky on a stormy night is actually the NGC 3132 nebula, a colossal belch of gases from an aging star in the Vela constellation 2000 light-years away (the source star is just next to the bright star). The photo comes from the Hubble Heritage Project, a new Web site at the Space Telescope Science Institute in Baltimore. Astronomers there plan to cull the 130,000 images taken by NASA's Hubble Space Telescope since 1990 for stunning shots of planets, galaxies, and stars, then remove distortions and otherwise dress them up to produce one high-quality picture a month. Many beautiful Hubble shots weren't big enough news to make press releases, but "we don't have that same requirement," says team leader Keith Noll. The site has logged over half a million visitors since it debuted on 21 October. heritage.stsci.edu

Science ONLINE

Cells use proteolysis, or the cleavage of proteins, to dispose of old or damaged proteins. But new evidence summarized in the Enhanced Perspective on p. 1279 shows that proteolysis can be creative as well: It can liberate fragments on cell surfaces that stimulate receptors or help cells adhere to one another. Hyperlinks lead to resources on membranes and proteins. www.sciencemag.org/cgi/content/full/282/5392/1279

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