NETWATCH

edited by JOCELYN KAISER

SITE VISIT

Enchanting Garden

When he set up his own Web site 3 years ago, Dutch nature lover and amateur botanist Marco Bleeker says he wanted to "teach plant biologists about the use of software and nonbiologists about the love for plants." The result, Chez Marco's Botanical Diversity pages, boasts an interactive trip into the rainforest of Suriname, complete with chirping crickets and the haunting cries of howler monkeys. For contrast, it also offers an excursion to the Diemerzeedijk, a waste site named for an old dike near Amsterdam that is both botanical paradise and industrial nightmare: A blanket of flowers covers one of Europe's worst dioxin dumps.

www.euronet.nl/users/mbleeker

Chez Marco's has a large collection of software useful to taxonomists, ecologists, and collection managers. The site's most elaborate feature, however, is the "botanical sorting machine," where the user can click on hundreds of alphabetized plant names to find out that species' place in the taxonomic world order—along with pictures and many links to specialized sites or databases. Bleeker, who studied biology years ago but now works as a receptionist at the Netherlands' National Cancer Institute, says he'd like to expand the site: "I'm hoping that universities or educational organizations will lend a helping hand."

NET NEWS

Research Urged to Fortify Cyberspace

The Internet and other computer networks are unsecure, unreliable, and will remain that way with existing technologies, according to a new report from a National Research Council (NRC) panel. The report details a plan for a long-term, federally funded research effort to make networks "trustworthy."

The sprawling growth of the Internet has left it open to hackers and other disruptions, such as rats chewing through cables, according to the report, "Trust in Cyberspace." Among the vulnerable points where data such as passwords can be stolen are routers that direct data packets and the servers that convert Web page names (like www.sciencemag.org) to numerical addresses. Add-on technologies like "firewalls" that shield internal networks can't entirely solve these problems, the report says. "We couldn't make [systems] trustworthy even if we wanted to," says Cornell University computer scientist Fred Schneider, the panel's chair.

The research needed to plug these gaps is too long-range and risky to interest companies and thus must be supported by the federal government, the report says. Among other things, computer scientists need to study what the major weaknesses are in existing networks, and cryptographers need to develop encryption codes that work for entire networks, not just for individuals exchanging messages. "A surprising number [of these areas] will require revolutionary things," Schneider says.

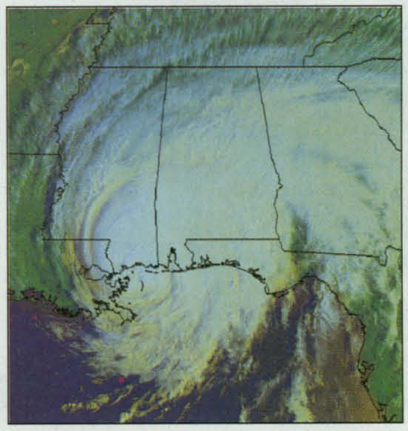
The report, requested by the Defense Advanced Research Projects Agency and the National Security Agency, is expected to provide a blueprint for research spending in the year 2000 budget, says NRC staffer Alan Inouye. But which agencies will spend exactly how much money, he says, is the "subject of ongoing debate."

HOT PICKS

One-stop crunching. Tired of hopping around the Internet to analyze your DNA or protein data? Try the Biology Workbench 3.0, a Web program that draws on a host of biology databases to let users compare genetic sequences, predict protein structures, and more. biology.ncsa.uiuc.edu

By Jove. The Galileo spacecraft has churned out stacks of data on and gorgeous images of Jupiter and its moons Ganymede, Callisto, Europa, and Io since June 1996. Now NASA has put together a searchable compendium on Galileo's first nine orbits of the planet. www.jpl.nasa.gov/galileo/sepo/fulldata.html

Creative process. You can leaf through the digitized lab notes, letters, manuscripts, and other papers of great 20th century biomedical scientists at a new Web archive called Profiles in Science. The collection debuts with Oswald T. Avery, who proved in 1944 that the genetic material in cells is not protein but DNA. www.profiles.nlm.nih.gov



IMAGES

Furious Georges

This puffy swirl of clouds belies the destruction below as Hurricane Georges barreled into the coast of Louisiana on the morning of 28 September with 160-kilometer-an-hour winds. You can follow storms as they wax and wane between tropical depressions and hurricane-force gales at the Tropical Cyclone Web page of the Cooperative Institute for Meteorological Satellite Studies (cimss.ssec.wisc.edu/tropic/tropic.html). The institute, whose main job is to provide satellite-based wind data to forecasting and research centers, posts images and movies showing the latest cloud, water vapor, and wind-speed data for tropical storms in all parts of the world, as well as their projected tracks. If hurricane images don't blow you away, check out wildfires and tornadoes in the GOES satellite gallery at cimss.ssec.wisc.edu/goes/misc

Science ONLINE

Einstein's theory of general relativity forced physicists to grapple with this fundamental question: Since the space-time continuum is itself changing, how do you define energy and momentum? In this week's Enhanced Perspective (p. 249), Matt Visser explains a recent paper that at last offers a proper definition of angular momentum, which is carried by rotating objects like stars and black holes. Hyperlinks point to info about general relativity, astrophysics, and fundamental physics. www.sciencemag.org/cgi/content/full/282/5387/249

Send Internet news and great Web site suggestions to netwatch@aaas.org

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