NETWATCH

edited by JOCELYN KAISER

COOL IMAGES

To Kill (and Paint) a Mockingbird

This diving arctic tern was migrating between the Arctic and the Antarctic when John James Audubon shot it, painted it, and made it a star. Twenty paintings from his 1827 *The Birds of America*, along with masterpieces by Alexander Wilson, Elizabeth and John Gould, and 38 more 18th and 19th century ornithologist-artists are on virtual display at a Cornell University Library exhibit called Beautiful Birds.* The art and science of bird studies developed in tandem during this period, particularly in the Americas, where the rush to discover (and name) new species lured ornithologists out into the wilderness to collect and paint specimens. The Cornell site guides visitors through different eras and techniques, and includes links to bird songs.

* rmc.library.cornell.edu/ornithology/frames/exhibit.htm

NET NEWS

Search Engines Fall Short

To find that one snippet of information hidden in the thicket of data on the Web, most users turn to search engines. But a survey of the 11 most widely used search engines, reported in last week's issue of *Nature*, suggests that these trailblazers are losing the scent. No single search engine, the study found, covered more than 16% of the Web's contents (see table).

Computer scientists Steve Lawrence and C. Lee Giles of the NEC Research Institute in Princeton, New Jersey, first carried out a "census" of the Web's contents. By checking out what was behind 3.6 million randomly chosen IP numbers—the unique number for each Web address—the researchers calculated there to be about 3 million servers hosting 800 million pages. Next the duo ran 1050 queries on the 11 search engines and compared them to the results for Northern Light, which produced the most hits and, at 128 million pages in its index, covered about 16% of the Web. The other engines ranged from 15.5% to a measly 2.2% coverage.

This situation won't last forever, Lawrence predicts. The "growth rate [of the Web] will presumably slow down, so the search engines should catch up," he says. Meanwhile, the 11 engines combined cover about 42% of the Web, making software tools like MetaCrawler that harness together several search engines "the way to go" for exhaustive searches, says Lawrence.

SEARCH ENGINE COVERAGE

Company	Percent
Northern Light	16.0
Snap	15.5
AltaVista	15.5
HotBot	11.3
Microsoft	8.5
Infoseek	8.0
Google	7.8
Yahoo!	7.4
Excite	5.6
Lycos	2.5
EuroSeek	2.2

SOURCE: (BOTTOM LEFT) S. LAWRENCE AND C. L. GILES/*NATURE*

HOT PICKS

Bank of Iceland. A controversial plan for a private database of genomic and health data on the people of Iceland is the focus of this site, set up by two anthropologists. In addition to discussion forums on the social, scientific, and ethical issues raised by the deCode Project, Mapping the Icelandic Genome offers reams of background reading, including a list of 700 news articles. sunsite.berkeley.edu/biotech/iceland/index.html

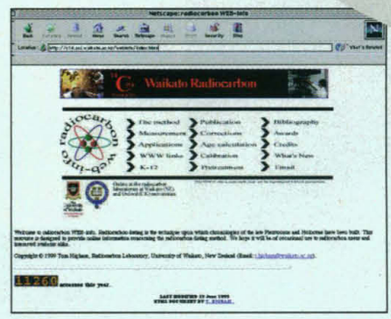
Telescope troubleshooting. Mysterious blobs and streaks in optical telescope images often result from mundane things such as a dusty lens, scattered starlight, or even a dead ladybug in an instrument's filter. This site, called "Observational Mishaps," offers astronomers examples of faulty images and fixes.
www.astro.lsa.umich.edu/users/kaspar/obs_mishaps/mishaps.html

SITE VISIT

Dating Game

Ever since chemist Willard Libby invented it after World War II, radiocarbon dating has been a boon to science. The technique has helped experts debunk the Shroud of Turin that supposedly covered Christ, for example (the cloth is only 650 years old), and date the 5300-year-old Ice Man found frozen in the Italian Alps in 1991. A wealth of information on this versatile test can be found at the Radiocarbon Web-info site.

c14.sci.waikato.ac.nz/webinfo/index.html



There's something here for everyone, from kids curious about how radiocarbon dating works (by calculating how long it would take carbon-14 in samples of plants or animals to have decayed to current levels) to archaeologists who need to know what can throw off a sample's date (like a nearby CO_2-belching volcano). Web master Tom Higham of the Radiocarbon Lab at the University of Waikato in New Zealand wrote many of the 50-some pages himself, covering topics such as the method's history and how to decontaminate samples. An applications section leads to sites on dating the Dead Sea scrolls, reconstructing the ancient vegetation of the Americas, and much more. Other outside links include the world's 130 radiocarbon labs and a primer at Oxford University on how tree rings are used to calibrate dates.

Science ONLINE

Commentaries in *Science* are often thought-provoking, and now you can add your own 2 cents online. This month *Science* Online launches dEbates, an electronic system for responding immediately to Editorials, Policy Forums, and Essays on Science and Society. E-mailed comments that contribute to the discussion will be posted within roughly 3 days. Look for dEbates links on the Editorial, Policy Forum, and Essay pages at www.scienceonline.org

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