

RESOURCES

Odorama

For a rose, it's degraded carotenoids; for wine and beer, it's esters; for bacon, phenolics from roasted wood. Those are just a few of the chemicals that underlie the science of smells, formally known as olfaction.

A great place to sniff out smell lore is a site created by organic chemist John Leffingwell, who heads a company in Canton, Georgia, that sells databases of odor and flavor chemicals. Scroll past the blurbs about food and perfume industry news to Special Features to learn about topics from tobacco to saffron. Especially

good is the review of olfaction, which covers everything from the anatomy of olfactory organs to receptor proteins to new research on how our brain senses so many smells: It uses a combinatorial approach, in which a few receptors mixed in various ways can detect a wide range of odors.

Other features include rotating molecular models of odor chemicals. And in the links section, Leffingwell runs down the Web's best olfaction offerings. You can reach a phytochemicals database, for example, or read up on the vomeronasal organ, the sensor that animals—and possibly humans—use to sniff out potential mates.

www.leffingwell.com

TOOLS

Palm Readings

Ever wish you had the half-life of radon-285 at your fingertips, or the fission products of uranium-235? If you've joined the Palm Pilot craze, you can now stock your handy device with such reference data. Download a periodic table, a database of x-ray emission lines, or even electronic versions of "wallet cards" showing properties of known nuclides at the Palm Physics Page.

www.tunl.duke.edu/nucldata/Palm_Pilot/Palm.shtml

CATALOGS

Going, Going, Gone

Primates, albatrosses, and freshwater turtles are all in a more parlous state than they were just 4 years ago. These endangered animals face threats from bushmeat hunting, long-line fisheries, and medical uses, respectively. Those are among the trends to be gleaned from the 2000 Red List, the world's most authoritative list of threatened species. Last produced in 1996 as a book by the World Conservation Union, this latest tally of 11,046 plants and animals has been published only on CD-ROM and as a searchable Web database (www.redlist.org). Log on to look up species such as the critically endangered Ethiopian wolf, *Canis simensis* (above), whose adult population numbers only 400.

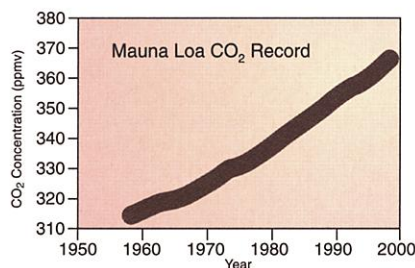


DATA

Global Change Digest

Just as the U.S. election news fades next month, expect the global warming debate to heat up as countries meet in The Hague to pin down details of the 1997 Kyoto climate pact. Climate change predictions and discussions of how to respond are based on a wide range of data, from recent stats on methane belched by rice fields to ice core temperature records going back more than 400,000 years.

Offering a good overview of these data is Trends Online, a compendium published by the Carbon Dioxide Information Analysis Center (CDIAC) at Oak Ridge National Laboratory in Tennessee. Here you'll find concise summaries of key climate change data sets, each accompanied by graphs and data tables.



For starters, the site is "the single best source" of fossil fuel emissions data for individual countries, says CDIAC's Tom Boden. You can also see the rising levels of carbon dioxide charted at Mauna

Loa, Hawaii, since the late 1950s or read about why recent temperature trends are so controversial: At the surface, temperatures are rising, while in the troposphere, weather balloon and satellite data show little or no warming trend. Boden points out that scientists may need to go elsewhere to get data that are more recent or of higher resolution. Still, a "phenomenal" number of people use the site, he says, from middle-school students to climate modelers.

<http://cdiac.esd.ornl.gov/trends/trends.htm>

Science ONLINE



To develop the next generation of magnetic memory devices, researchers need to grasp the dynamics of magnetization at vanishingly small length and time scales. This week on p. 492, Acremann *et al.* describe a new imaging technique that reveals magnetization moving through a thin cobalt disk. Go to *Science Online* to see a 3D video rendering of the out-of-plane (z) component of magnetization flashing across a few square micrometers of cobalt in less than a nanosecond. www.sciencemag.org/cgi/content/full/290/5491/492

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