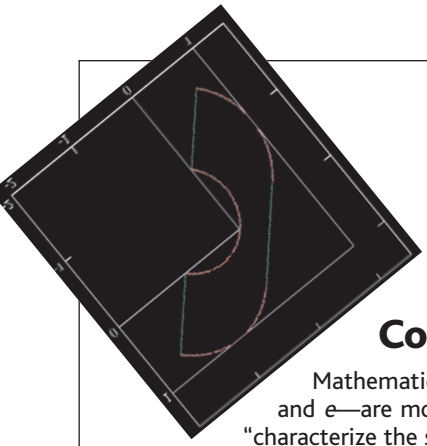
NETWATCH

edited by MITCH LESLIE



EDUCATION

Constant Companion

Mathematical constants—numbers such as π and *e*—are more than just strings of digits. They "characterize the structure of mathematics," according to Steven Finch, a Boston-area mathematician. His Favorite Mathematical Constants Web site describes the derivation of more than 100 common and obscure constants. For example, Finch wrestles with the "moving sofa" constant (2.21953...), the area of the largest two-dimensional shape that can be slid around the bend in a "hallway" of constant width (above). Finch hopes visitors will contribute to the site, as more facts about constants remain to be discovered, he says: "We simply haven't examined them all with sufficient care."

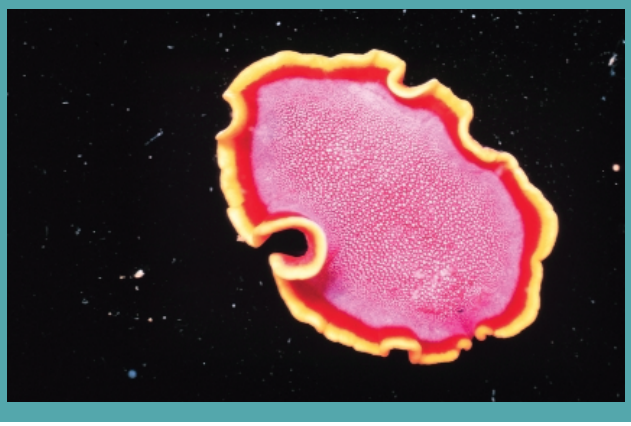
pauillac.inria.fr/algo/bsolve/constant/constant.html

IMAGES

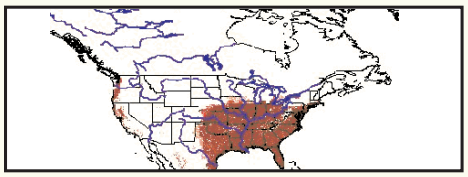
Hooked on Worms

"Beautiful worm" might sound like an oxymoron—until you see the Technicolor creatures on display at the Web site Marine Flatworms of the World. Molecular biologist and flatworm maven Wolfgang Seifarth of Heidelberg University in Germany has written an informative primer on these habitués of warm seas, some of which can grow to the size of a dinner plate. Taxonomy pages give a genus-by-genus breakdown of the group. You can also probe the details of their anatomy, learn about their mating habits (most are hermaphrodites), or get the low-down on their diet and how they avoid becoming a meal. Because tender-bodied worms are a delectable mouthful for a fish, some species have evolved to closely resemble poisonous sea slugs. Others sport their own toxins: Their gaudy colors might warn potential predators. The site's biggest draw is a gallery packed with underwater shots of Day-Glo worms. Below, *Pseudoceros ferrugineus*, a native of the Pacific Ocean.

www.rzuser.uni-heidelberg.de/~bu6/flatintr.htm



CREDIT: (BOTTOM) PHOTO COLLECTION OF DR. JAMES P. MCVEY/NOAA SEA GRANT PROGRAM



RESOURCES

Cartography of Life

How will global warming shift the distribution of tropical diseases such as malaria and dengue fever? How much should we worry about the spread of the Amur snakehead, a land-crawling, predatory native Asian fish that recently turned up in a Maryland pond? Join the Lifemapper network, and your computer can help ecologists crack questions like these in its spare time.

The distributed computing project at the University of Kansas, Lawrence, amasses data on specimens from museums and other biodiversity databases, along with environmental variables such as climate, elevation, and tree cover. Lifemapper then determines the actual and possible range of particular species or subspecies, delegating the number crunching to idle desktop machines running the project's screensaver. This Lifemapper analysis (above), for example, shows ample habitat for the Amur snakehead in the United States. Get the beta version of the screensaver here.*

If you want to create your own maps instead of donating computer time, try this interactive atlas† from the United Nations Environment Programme. Chart an assortment of variables, from freshwater fish diversity to photosynthetic activity, as well as characteristics of the human population that affect biodiversity, such as density and dietary staples. The maps are an online complement to the U.N.'s *World Atlas of Biodiversity*, a huge encyclopedia of life released in August.

* beta.lifemapper.org

† stort.unep-wcmc.org/imaps/gb2002/book/viewer.htm

SOFTWARE

Get Your Chips in Order

Thanks to microarrays, or gene chips, measuring the activity of hundreds or even thousands of genes is routine. Thanks to microarrays, researchers often bog down in a morass of data, says Lao Saal. To help out, Saal and colleagues at the University of Lund in Sweden crafted BASE, database software that lets you store, categorize, and analyze information from gene-chip experiments. BASE works with commercially available and custom-made chips and can handle a range of data, from experimental protocols to images. Because BASE is open-source software, users can download it for free, make their own modifications, and share their improvements with other scientists through the Web site, says Saal, who is now a medical student at Columbia University.

base.thep.lu.se

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

SOFTWARE: Get Your Chips in Order

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