RANDOM SAMPLES

edited by CONSTANCE HOLDEN

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Living color. This green darter (member of the Aeshnidae family), a predatory central Texas dragonfly, is now preserved in all its luster on the Internet, in a gallery of dragonfly pictures (www.our-town.com/dragonfly/Welcome.html) developed by Forrest Mitchell, an entomologist at Texas A&M Agricultural Research and Extension Center in Stephenville.

Mitchell studies fluctuations in insect populations along streams as a way of assessing water quality. As the top predator among bugs in central Texas streams, dragonflies are susceptible to perturbations lower in the food chain brought about by pollutants. But Mitchell has been struggling with a problem that has long plagued bug collectors: Within minutes of death, dragonflies' distinctive markings fade. So he chills them to slow them down, takes their pictures digitally while they are still alive, and scans them into the computer. Cornell University entomologist Thomas Eisner, a renowned bug photographer, calls the images "extraordinary."

Scholars' Group Defends Cloning

The cloning of Dolly the sheep in Edinburgh, U.K. (*Science*, 7 March, p. 1415) has evoked cries of moral concern from religious activists and some ethicists. But a group of well-known scholars and artists issued a statement on 16 May lauding the Dolly achievement and dismissing fears about its implications.

Thirty members of the International Academy of Humanism, based in Amherst, New York, in a "Defense of Cloning and the Integrity of Scientific Research," said they hoped to stave off what they call a "Luddite rejection" of the technology. Among the signers are Oxford University zoologist Richard Dawkins, Nobel laureate Francis Crick of the Salk Institute in La Jolla, California, Harvard biologist Edward O. Wilson, philosopher Paul Kurtz of the State University of New York, Buffalo, and novelist Kurt Vonnegut Jr.

The academy, an 80-member body of "secular humanists," warns that "advocates of supernatural or spiritual agendas" may be trying to railroad governments into banning biological research that could be useful in everything from conserving endangered species (see p. 1329) to improving animal models for medical research. "We believe the danger is very real that research with enormous potential benefits may be suppressed solely because it conflicts with some people's religious beliefs," the authors write.

Contrary to President Clinton's blue-ribbon bioethics panel, the authors say the cloning of any higher animals, including humans, would not raise "moral issues more profound than those faced in connection with any previous scientific or technological development."

They acknowledge that regulatory authorities will need to sort out some ethical issues, and "guidelines need to be developed which will prevent abuses" in research.

DEREK BRIGGS

Skinhead. Skin magnified 15 times.

No Feathers on Spanish Dino

Last year, Chinese paleontologists stirred up an ongoing controversy when they suggested that the fossil of a birdlike dinosaur found in China had a feathery mane (*Science*, 1 November 1996, p. 720 and 21 March, p. 1731). But since then, there has been no further evidence to support the theory that some dinos had feathers. Now a birdlike dino found in Spain offers some negative evidence: A detailed mold of skin from its head suggests that this particular creature was featherless.

Relatively little is known about the skin and soft tissue of dinosaurs, apart from information gained from some skin impressions found in sandy rock in North America. But a small theropod—a two-legged carnivore—discovered by Spanish paleontologists in 1993 in Cuenca Province, has yielded an unusually fine skin impression. The first birdlike dino to be found in Europe, the animal had a pelican-like throat pouch and a soft tissue crest on its head. Microscopic examination of the skin showed that its surface was wrinkled and "bore no evidence of any structures such as feathers or enlarged scales," according to paleontologist Derek Briggs of Bristol University, who, with José Luis Sanz of Universidad Autonoma de Madrid, has been studying the fossil.

The scientists surmise that when the animal died 116 million years ago, its body was washed into a freshwater lake at Las Hoyas and sank into the mud. Bacterial films grew over the skin in the quiet bottom waters, abetting the deposition of fossilizing minerals by trapping phosphorus released from the decaying carcass. The mineral formed a thin sheet under the bacterial mat so that in areas where it was in direct contact with the skin, the outline of the body and fine detail of the skin surface is preserved.

The research, to be published in the July issue of the *Journal of the Geological Society, London*, "is an extremely important check and balance to some of the wilder theorizing set in train by the tantalizing, but as yet unsubstantiated, Chinese reports," says paleontologist David Norman, director of the Sedgwick Museum of the University of Cambridge. He adds that the find shows that environments like the Las Hoyas lake are good prospects for future dino-skin hunters.

Japanese R&D Expenditures, 1996

This chart, from the Japanese government's latest R&D survey, shows that the Japanese private sector spends 3.4 times as much as does the government on research—somewhat more than in the United States, where the federal government provides one-third of the total ($184.3 billion in 1996), according to the National Science Foundation. Within sectors, Japanese universities are less dependent on federal funding than their U.S. counterparts: They receive 51% of their R&D money from the government, while U.S. universities get about two-thirds of their funds—which totaled $27.8 billion last year—from the feds.