RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Missing Link for Miocene Apes

Skeletal bones from apes that lived during the Miocene—a period stretching roughly from 22 million to 5 million years ago—are a good deal rarer than hen's teeth. Apes went into that period as quadrupeds but came out as long-armed creatures that swing, hand over hand, through the trees—but the dearth of fossils has left the details of this transformation in the dark.

Scientists in Spain, reporting in this week's issue of *Nature*, now believe they may have filled in part of the puzzle. They have found a 9.5-million-year-old collection of skeletal bones that appear to belong an ape known as *Dryopithecus laietanus*. Salvador Moyà-Solà and Meike Köhler of the Institut de Paleontologia Miquel Crusafont in Sabadell, Spain, state that while recent literature leans to the view that Miocene apes were primarily monkeylike quadrupeds, *Dryopithecus* is now looking distinctly apelike, with spinal, hip, shoulder, and arm bones well suited to suspension and climbing. The hand in particular was very large and the fingers were long and strong, the authors state. The bones, they believe, are somewhat like those of a modern orangutan.

Paleoanthropologist David Pilbeam says that while he's skeptical of the claims of orangutan affinity, the skeletal pieces definitely suggest adaptation for a swinging lifestyle. "I think it's a wonderful find," he says. Anthropologist Steven Ward of Northeastern Ohio Universities College of Medicine, an expert on Miocene apes, adds that "to date all known hominoid Miocene genera [look like] Old World monkeys.... If in fact the new Spanish material turns out to be more apelike than monkeylike, then this is a very significant finding."

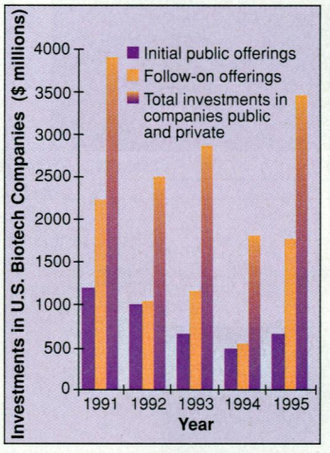
Biotech on a Roll

The U.S. biotechnology industry, which underwent a recent slump after a period of inflated expectations and overvalued stock, rebounded spectacularly in 1995. Last year was the "hottest in a decade" for raising money and forming new partnerships, according to Carl B. Feldbaum, head of the Biotechnology Industry Organization (BIO) in Washington, D.C.

New England, which ranks second only to California's Bay Area in biotech-intensity, did particularly well, according to *Bioline*, the newsletter of the Massachusetts Biotechnology Council. "This summer sizzled" in Massachusetts, it says: Whereas only $23 million was raised in public stock offerings (by one company) in the first half of 1995, eight companies raised $279 million in the third quarter alone.

The nation is following suit, says *Bioline* editor Robert Gottlieb of Feinstein Partners Inc., a Cambridge, Massachusetts, consulting firm. "By 1994, after a string of disappointments in the clinic [such as the failure of Synergen, valued at $1 billion in the early '90s, to get approval for septic-shock treatment Antril], the investment community sort of walked away wholesale," says Gottlieb. But 1995 saw the "largest amount of fund raising for biotech since 1991."

Gottlieb attributes that surge in large part to the fact that while the venture capital providers have become more picky, the pharmaceutical industry has become a major financer of biotech, to the tune of $4.5 billion in 1995. Pfizer, for example, last year sank $115 million into four biotech companies. And some companies, such as Glaxo, which bought Affymax for $533 million, are buying whole biotech concerns. What's more, there have been some major advances, including good news from clinical trials of drugs to treat angina and multiple sclerosis. Finally, adds Dan Eramian of BIO, there was a "key advance" on the regulatory scene in 1995, with the Food and Drug Administration adopting changes that will expedite approval of bioengineered drugs.



SOURCE: FEINSTEIN PARTNERS INC.

Biomoney. Public financing of biotech companies picked up in the second half of '95. Pharmaceutical companies and private institutional investors are also playing a growing role.

VIRTUAL GRIDLOCK

"I believe the Internet network will crash and burn.... The Internet is very close to where the phone companies are on Mother's Day. They can just barely tolerate the traffic."

—Andrew Seybold, publisher of newsletter *Outlook on Communications and Computing*, quoted in *Investor's Business Daily*, 28 December 1995.

NASA

Catching some rays. XTE in orbit.

Black Hole Probe

On 30 December, after six launch scrubs, the $190 million X-ray Timing Explorer (XTE) satellite roared into near-earth orbit to begin, as its owner, the National Aeronautics and Space Administration (NASA), puts it, "taking the pulse of the universe."

The mission, explains Massachusetts Institute of Technology astrophysicist Hale Bradt, "focuses in on the end states of stars, the compact states"—including neutron stars, white dwarfs, and black holes. X-rays are the markers of those collapsing and dying bodies. They arise from high plasma temperatures generated by strong gravitational fields. "Understanding these exotic states of matter is very much at the heart of what goes on in our universe," says Bradt, one of the principal investigators.

The 3-ton satellite, which orbits Earth once every 90 minutes, will monitor x-rays at an energy range—2 to 250 thousand electron volts—wider than ever covered before, and will pick up events as brief as a microsecond with two extremely sensitive x-ray detectors, for low and high energies. An All Sky Monitor, sweeping 80% of the sky on each orbit, spots transient events.

Short flashes in the submillisecond realm are of great interest, notes project scientist Jean H. Swank of Goddard Space Flight Center, as these time scales are characteristic of the motion of matter near compact objects and thus yield "information about how matter behaves close to black holes." Says Swank: "Some previous experiments saw short flashes which everybody argues about whether they were real or not." Now, with XTE, they'll know.