Witches or Cannibals

Grisly human remains—broken, burned skulls and shattered bones with crude cut marks—have been found at sites inhabited by Pueblo Indians in the U.S. Southwest 1000 years ago. Last month, anthropologist Christy Turner published a book claiming that they were best explained by one behavior: cannibalism. But in the latest issue of the *American Anthropologist*, archaeologist Andrew Darling argues that the butchery is from witch executions.

Darling bases his case on bones and on folk tales of the Anasazi, Zuni, and Hopi cultures. The bones come from about 30 sites where skulls have been smashed in and brains removed, while other bones have been broken and the marrow removed. That evidence, he says, comports with 16th century accounts of witch trials by Spanish explorers, as well as folk tales later recorded by anthropologists. The body had to be completely destroyed so the witch could not return to it. This entailed "corpse pounding" with large rocks, mutilation, and cutting up the body, says Darling, who directs the Mexico-North Research Network in Chihuahua. Some of these events took place at "kivas," or ritual houses. Adds Darling, "There's actually a great fear of cannibalism throughout Pueblo society."

Old drawing of "corpse pounding" by Native American Joe Lente contains lettering that reads: "Block knocking the teeth off first then all over the body."

Turner counters that "we can't trust the ethnographic record. When the Spanish arrived, they dictated to the Puebloans what they should and shouldn't do." Besides, he says, "there's just overwhelming evidence of cooking. We've looked at the butchered remains of hundreds of small animals, and the bones show the same kinds of damage that we see at the Pueblo sites."

Debra Martin, a physical anthropologist and southwestern specialist at Hampshire College in Amherst, Massachusetts, is inclined to side with Darling. "It's hard to believe that if [witchcraft lore] is so pervasive throughout such a vast region, there isn't some truth to it," she says.

Manna From McDonnell

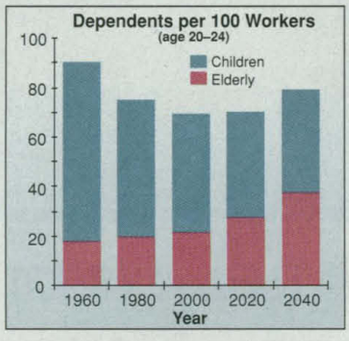
Ten young (or youngish) researchers in North America and Europe will each get $1 million for research from the St. Louis–based McDonnell Foundation, in celebration of the 100th anniversary of the founder's birth in April. The winners, chosen from 250 applicants, are:

Radio astronomer **John Carlstrom**, 39, University of Chicago; astrophysicist **Christopher William Stubbs**, 38, University of Washington, Seattle; ecosystems modeler **Mercedes Pascual**, 38, University of Maryland Biotechnology Institute; climate modeler **Stefan Rahmstorf**, 38, Potsdam (Germany) Institute for Climate Impact Research; philosopher of science **Kathleen Akins**, 40, Simon Fraser University (Canada); medical historian **Keith Wailoo**, 36, University of North Carolina, Chapel Hill; cognitive neuroscientist **Stanislas Dehaene**, 33, INSERM (France); chimp researcher **Daniel Povinelli**, 34, University of Southwestern Louisiana, Lafayette; human geneticist **Wendy Bickmore**, 37, Medical Research Council, Toronto (Canada); geneticist and physicist **Leonid Kruglyak**, 34, Fred Hutchinson Cancer Research Center, Seattle.

All applicants had to write long essays expounding on the significance of their work. Says McDonnell program director Susan Fitzpatrick, "We hope the recipients will become spokespersons in their respective fields."

A Lighter Load

The aging of the U.S. population will soon trigger a sharp rise in the number of "dependent" elderly for each worker. But projections show that because of lower birth rates, the total number of all dependents per worker will actually decline from levels in the 1960s and 1970s. Data are from a new report, *Demography Is Not Destiny*, from the Gerontological Society of America.



Looking for a Wink From ET

After years of cocking their ears for radio signals from extraterrestrial civilizations, astronomers are now turning their eyes skyward. Private funding for three new, low-cost "optical SETI" (Search for Extraterrestrial Intelligence) initiatives was announced last week by The Planetary Society, a space advocacy group in Pasadena, California.

Although most ongoing SETI searches use large radio telescopes, some SETI scientists have been arguing that flashes of laser light—both optical and infrared—would be a better way for extraterrestrials to communicate. Whereas radio waves travel farther, "lasers are clearly superior for direct, point-to-point interstellar communications out to ranges of several thousand light-years," says Stuart Kingsley, director of the small Columbus Optical SETI Observatory in Ohio, which began its work in 1992.

Now, three new efforts are mirroring Kingsley's on a much larger scale. One, begun last fall at Harvard University's Oak Ridge Observatory in Massachusetts, is watching stars for patterns in the form of repeated bright pulses lasting as briefly as a few billionths of a second. The second, at the Leuschner Observatory of the University of California, Berkeley, will begin regular observations next month with an automated telescope. In the third effort, also Berkeley-based, planet hunters will search for steady, bright signals of a single color—another possible means of intelligent broadcast—in thousands of stellar spectra they have collected.

If scientists do find a signal, says Berkeley astronomer Dan Wertheimer, it will likely be one intentionally directed toward Earth—"They would know about us." Any dialogue would be rather sluggish because of the great distances, but not out of the question—astronomers estimate there are hundreds of sun-like stars within 50 light-years.