RANDOM SAMPLES

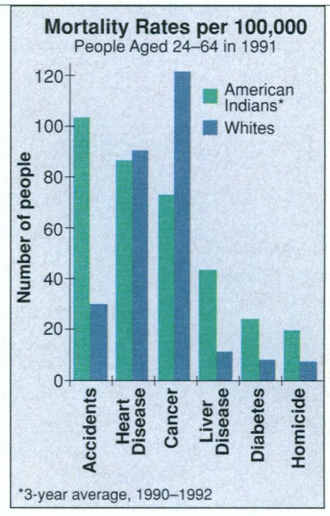
edited by CONSTANCE HOLDEN

Health of Native Americans

American Indians, with a population somewhere between 1 million and 2 million, have been increasing in number, but many health problems, especially diabetes and alcoholism, are as intractable as ever, according to a report on Indian demography and health from the National Research Council. NRC staffer Barney Cohen says the effort, requested by the Public Health Service, is meant to take the place of a report on Indian demography and health that was issued after the 1980 census but not, because of tight budgets, after the 1990 count.

The book, *Changing Numbers, Changing Needs*,* relates that although overall employment in the United States increased during the 1980s, the decline in low-skilled jobs meant a decline in economic well-being for Indians. It also documents "the overwhelming importance of the so-called social pathologies" in morbidity and death. Indians actually have lower cancer rates than the population as a whole. But alcoholism—although the incidence varies widely from tribe to tribe—is still a major scourge. Indians under 35 are about 10 times as likely to die from diseases directly associated with alcoholism as are other U.S. residents, and about three times as likely to commit suicide.

Diabetes rates also continue to rise, for genetic as well as dietary and lifestyle reasons. The Pima Indians of Arizona, for example, have the world's highest rate of adult-onset diabetes. It affects 50% of adults over 35—19 times the rate for citizens of Rochester, Minnesota.



SOURCE: NAS

* For purchasing information, call 1-800-624-6242.

Micromanaging Atoms

It's the equivalent of atom-scale earth-moving. Physicists already know that scanning tunneling microscopes (STMs) aren't just for looking at atomic landscapes; they can also manipulate foreign atoms bound to a surface (*Science*, 29 November 1991, p. 1319). Now a German group has found that it can dig into the substrate itself with an STM tip and push its atoms around. With this new ability, the physicists have built landmarks on a copper surface that enable them to gauge the position of foreign atoms bound to the metal.

In the 2 September *Physical Review Letters*, Gerhard Meyer and colleagues at the Free University of Berlin report picking up single atoms from a copper surface and moving them close to foreign molecules bound to the surface to see how the interlopers were interacting with the underlying copper. In this case, the scientists found that the spacing between the copper landmark and a carbon monoxide molecule implied that the CO was sitting on top of a row of copper atoms rather than in between them, following the normal copper stacking pattern. The authors say their new technique will be useful not only in making new nanostructures, but in gaining information from complex surfaces "not amenable to conventional surface crystallographic methods."

The technique, say other researchers, opens the way to resculpting a surface as needed to make nanostructures or create a setting for other experiments. Physicist Don Eigler of IBM's Almaden Research Center in San Jose, California, a pioneer in atomic-scale manipulations, sees the work as "a superb example of the real (as opposed to imagined) utility of being able to put atoms where you want them to go. Using their technique you can just grab an atom out of the surface when you need one … kind of like a drive-through for surface-physics experiments."

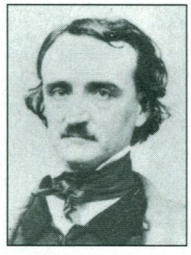
Rabies Death for Poe?

Science! true daughter of Old Time thou art!
Who alterest all things with thy peering eyes...
From *Sonnet—To Science*, Edgar Allan Poe (1809–1849)

Poe's words seem particularly apt now that prying science has peered into his medical records and come up with a tentative new explanation for his death 150 years ago: rabies.

Cardiologist R. Michael Benitez of the University of Maryland Medical Center in Baltimore came upon the writer's case during a seminar on the diagnosis of difficult cases. Benitez suspected that the anonymous patient, E.P., whose record he was assigned, was someone from the last century when he read that after being hospitalized for "observation," E.P. was encouraged to drink alcohol. Benitez later discovered that he was looking at the last days of the famous writer, whose death has been blamed on alcoholism.

According to the records, Poe appeared at a Baltimore hospital emergency room confused and lethargic, and had two periods of deliriousness before dying a few days later. Toward the end, he became combative and refused to drink either alcohol or water. None of the symptoms suggested trauma, tumors, or vascular or neurological problems in the brain, says Benitez. Nor was Poe's behavior typical of alcohol or cocaine withdrawal. Other causes such as poor nutrition or encephalitis can be ruled out because of the cyclical nature of Poe's delirium, Benitez reports in the September *Maryland Medical Journal*.



CORBIS-BETTMAN

Bitten? Poe.

Such relapses, however, are characteristic of the final stages of rabies, as was Poe's aversion to drinking, the hydrophobia associated with rabies. The virus attacks parts of the nervous system and can cause choking or difficulty swallowing. There is no record of Poe having been bitten by an animal, says Benitez. But according to the Centers for Disease Control and Prevention, only about 25% of those who contract rabies remember being bitten.

Jeff Jerome, curator of the Edgar Allan Poe House and Museum in Baltimore, says Benitez's analysis, by ruling out alcohol or drugs, "should make people think that there's another side of the story" of Poe's death.

OUT OF THE RAT RACE

"My morale has never been higher than since I stopped asking for grants to keep my lab going."

—Robert Pollack, professor of biology at Columbia University, speaking on the "crisis in scientific morale" at a 19 September symposium, Science in Crisis at the Millennium, at George Washington University