SCIENCE NEWS of the week

Scientist Says Greenhouse Warming Is Here

As the interior of the United States was sweltering through what may be the worst drought in a half-century, a NASA scientist told Congress last week that 1988 is rapidly becoming the warmest year on record and that the earth has warmed enough over the last decade for rising global temperatures to be attributed to atmospheric pollutants known as "greenhouse" gases. While scientists say the greenhouse effect may not have specifically caused this year's drought, they testified that droughts in the North American interior are probably becoming more frequent because of global greenhouse warming.

James Hansen, a climate expert at the NASA Goddard Institute of Space Studies in New York City, told the Senate energy committee that the average global temperature so far this year has risen 0.4°C relative to mean temperatures for the period 1950 to 1980, and said he is 99 percent certain the accumulation of greenhouse gases is responsible for the warming trend. In the past, scientists have hesitated to be so definitive.

"There's no time at which you're 100.0 percent certain," Hansen told SCIENCE NEWS. "But if we look at the record, I think it's beginning to get pretty darn clear that something is going on. And in my opinion, it's time to say that."

For the years 1950 to 1980, the standard deviation in global temperatures is 0.13°C. The temperatures for the first five months of 1988 have exceeded three times the standard deviation of that 30-year period, which means there is less than a 1 percent chance that natural climate fluctuations are causing the temperature rise, Hansen says. According to records going back about a century, global temperatures have increased by 0.6 to 0.7°C, and the five warmest years in the last century have occurred in the 1980s (SN: 4/30/88, p.282).

Such patterns agree with computer models that simulate how the climate should react to increasing concentrations of greenhouse gases — principally carbon dioxide, methane, nitrous oxide and the ozone-destroying chlorofluorocarbons. Produced through burning fossil fuels, leveling forests, fertilizing fields and many other natural and industrial processes, these gases trap infrared radiation emitted by the earth's surface. As the gas molecules concentrate in the atmosphere above their natural levels, they knock the world's climate out of balance, sending it reeling toward a warmer equilibrium temperature.

Other scientists are not as confident as Hansen in heralding the greenhouse warming. "We cannot at this time categorically say that this [warming] is due to the greenhouse gases," says climatologist Syukoro Manabe of the National Oceanic and Atmospheric Administration in Princeton, N.J. Manabe, who also testified at the Senate hearing, says the rising temperatures in the last 100 years match predictions for the greenhouse warming. Yet the temperatures are still within range of the often poorly understood natural variations in the climate, he adds.

Manabe told Congress that computer models suggest the interior regions of North America, southern Europe and Siberia will become drier as global temperatures increase. Climate models predict the earth will warm 1.5 to 4.5°C by 2050 as a result of greenhouse gases.

"Congress is beginning to open its eyes," says Sen. J. Bennett Johnston (D-La.). The hearing, he says, "convinced me that there is a greenhouse effect giving us a global warming. . . . But it's not enough evidence upon which you undertake a massive federal change in policy." In Toronto this week, scientists and diplomats meeting at an international conference discussed the need to stem the increase of greenhouse gases in the atmosphere. — *R. Monastersky*

Eat right and avoid loneliness

The American Heart Association (AHA) this week launched a new program to help consumers identify heart-healthy foods. Processed foods meeting AHA standards for low levels of total fat, saturated fat, cholesterol and sodium will carry the association's seal of approval. In advocating product approval, the AHA cited the "increasing clarity" of scientific evidence linking diet modification with reduced risk of cardiovascular disease.

Many Americans have adopted healthier eating habits since the AHA issued its first dietary recommendations in the early 1960s and this "played a part in the welcome decline in heart attacks and stroke death rates that we have seen during the past two decades," board chairman W. W. Aston says.

The new AHA effort was prompted by nationwide surveys showing Americans want more specific information about the fat and cholesterol content of foods. The program, supported entirely by fees assessed to participating companies, won't begin for at least a year. Independent laboratories will evaluate the content of foods submitted for analysis, and product approval will require verification by two laboratories.

A consumer education program will provide health professionals and the public with information on nutrition and cardiovascular-disease risk factors, including smoking and high blood pressure. The AHA says it wants to combat the confusing claims made about foods in labeling and advertising, and to improve the quality of those claims.

While AHA's logo on approved foods may prove helpful to those who do not want to add up the grams of fat and milligrams of sodium on labels, some caution is advised. "I'm afraid people will look at the approved foods and assume they are flawless, and not realize they are only okay if you follow the whole heart association plan," says Bonnie Liebman, director of nutrition at the Center for Science in the Public Interest in Washington, D.C. "Someone might see the seal on a margarine or oil and think they can eat as much as they want."

Other food for thought comes with a long-term Swedish study that points to social isolation as a risk factor in fatal heart disease. Kristina Orth-Gomer of the Karolinska Institute in Stockholm collected data on 150 middle-aged men, including clinical symptoms of coronary artery disease, marital status, education, occupation, social activities, smoking, alcohol consumption and personality. Three groups emerged: apparently healthy men, symptomless men with recognized risk factors and men with signs of heart disease.

Twenty of the men died of coronary artery disease during the 10-year study. Orth-Gomer analyzed factors having independent effects and determined that those most likely to die either suffered from arrhythmias or were socially isolated; smoking, alcohol and exercise did not appear to be factors. Survivors, she observed, also took part in a social activity — such as card playing or bowling — at least once a week. A report on the findings will be published in ACTA MEDICA SCANDINAVICA.

Previous study has linked social isolation with increased mortality from heart disease, but that work included only post-illness data. It remains to be explained specifically how isolation affects mortality. The Swedish researchers plan next to study the relationship between behavior, hormones and cardiovascular disease. — *C. Eron*