

global warming may be occurring, "catastrophic predictions are unsupported by the scientific evidence." It will take years, perhaps a decade or more, before a definite climatic trend can be established with satellite data.

In the view of many scientists and most agricultural specialists, greenhouse warming may well be beneficial if it occurs, since crops need both warmth and carbon dioxide to flourish. Global warming would be especially welcome if, as some scientists expect, the current interglacial period, which began about 11,000 years ago, comes to an end relatively soon and the Earth enters a new ice age.

But what if the environmentalist doomsayers, despite the current lack of evidence, are right?

"Delaying action," Singer maintains, "is not an invitation to disaster, as [is] often claimed." Calculations by University of Illinois atmospheric scientist Michael Schlesinger, Singer says, "clearly demonstrate that postponing controls on carbon dioxide for even a decade would have no noticeable impact on the next century's temperature trends." By contrast, drastic steps to curtail carbon dioxide emissions, as an SEPP statement signed by more than 50 atmospheric scientists warned, could have "catastrophic" economic effects, "with the most severe consequences falling upon developing countries and the poor." That such steps were not taken in Rio, it appears, may not have been so terrible a failure after all.

The Pill's Precursors

"Oral Contraceptives in Ancient and Medieval Times" by John M. Riddle and J. Worth Estes, in *American Scientist* (May-June 1992), Sigma Xi, The Scientific Research Soc., P.O. Box 13975, Research Triangle Park, N.C. 27709.

Historians puzzling over sudden population declines in ancient and medieval times usually conclude that infanticide or other nonmedicinal methods of family planning were involved. But Riddle and Estes, historians of pharmacology at North Carolina State University and Boston University School of Medicine, respectively, contend that "the archeological and written record is sprinkled with evidence that drugs were a trusted way to prevent conception or induce early-term abortions."

Ancient medical authorities regularly prescribed antifertility preparations made from plant secretions. The sap from silphion, a plant grown exclusively in the hills near Cyrene, an ancient Greek city-state in North Africa, may have been the ancient world's most effective antifertility drug—it was finally harvested to extinction. As professional medicine developed during the Middle Ages, antifertility lore came to be almost exclusively the property of midwives; in time, much of it was lost.

Western scientists have long regarded the ancient antifertility prescriptions as belonging to "the realm of magic and superstition." But in 1960, chemists D. B. Bounds and G. S. Pope,

following up on a report that Thai women took an extract of the root of *Pueraria mirifica* to induce abortion, isolated an estrogenic compound from the plant. (It is by keeping estrogen concentrations in the blood at a high level that modern oral contraceptives work.) Subsequent reports in Indian and Chinese journals provided further evidence that crude traditional antifertility drugs made from indigenous plants were effective.

"It is possible . . . that women of ancient and medieval times were fooled by physicians, witch doctors, herbalists, witches, midwives, village wise persons and charlatan medicine-show salesmen into taking birth-control potions that did not work," Riddle and Estes write. If so, women were fooled for a very long time. "We've so many sure-fire drugs for inducing sterility!," said the Roman satirist Juvenal—and six centuries later, priests were asking women in confession if they had drunk any *maleficium* (herbs or other agents) to prevent conception. Modern scholars, in Riddle and Estes's view, have too quickly dismissed the possibility that the ancients' antifertility preparations actually worked.

The R&D Deficit

"Redesigning Research" by Elizabeth Corcoran, in *Scientific American* (June 1992), 415 Madison Ave., New York, N.Y. 10017.

U.S. companies long ago proved their excellence in basic scientific and technological re-

search. Back in the 1950s, they often advertised their scientific prowess. The Radio Corporation