New Grants from Rockefeller

At least $50 million over the next 5 years will be spent by the Rockefeller Foundation to improve environmental research and management in developing countries.

The Global Environmental Program, headed by Rockefeller senior vice president Kenneth Prewitt, focuses on four areas: supporting the creation of a network of young scientists and policy-makers, advancing economic research on environmental decision-making, laying the groundwork for multilateral agreements on pollution research and environmental preservation, and "seeking innovative ways to help the U.S. public prepare for new environmental realities."

Most of the money is expected to be spent abroad. Anyone can apply. Rockefeller's "pie is getting larger," says a foundation spokesman. Last year it gave out a total of $78 million in grants and fellowships.

England Versus the World's Worms

More than one of every three humans is afflicted by parasitic worms, and many carry the debilitating infections throughout their lives.

The Imperial College in London has announced an expanded attack on the problem with the establishment of a new Parasitic Diseases and Helminth Biology Unit (a helminth is an intestinal worm). The unit is to be supported by £4 million ($6.8 million) over the next 5 years from the Wellcome Trust, a medical charity that derives its income of some £60 million a year from the pharmaceutical company Wellcome. The Trust is offering more than pure dollars: officials say that researchers won't have to spend so much time applying for grants, and referees will not have to assess the applications.

Roy Anderson is director of the new unit which will target three areas: the epidemiology and immunology of human worm infections, the interactions between hosts and parasites, and the molecular biology and development of the worms. "We want to understand how these parasites manage to survive in the face of a strong immunological attack," says Anderson.

Protecting Software

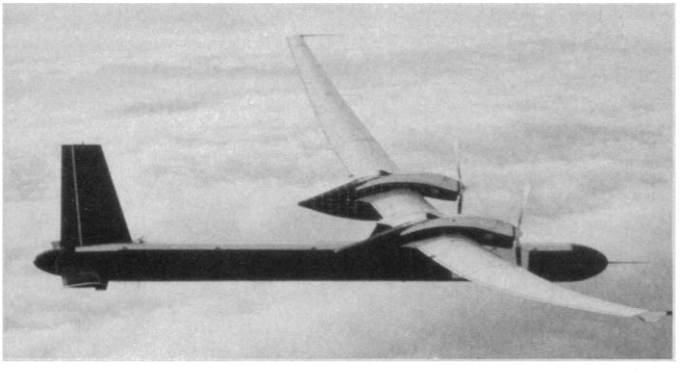
The U.S. has an overwhelming lead in the production of computer software around the world, commanding about 70% of the global market. But that lead may be threatened in the absence of effective intellectual property laws, according to a recent report from the Office of Technology Assessment (OTA).

Software may be protected via three routes: copyrights, patents, and trade secrets. Copyrights, the predominant form of protection, apply to the "expression" of ideas, whereas patents protect underlying ideas. Software, obviously, does not readily fit into either category.

The questions raised are almost unimaginably complex. For example, the Supreme Court has not ruled on whether software is patentable, but it has ruled that computer-implemented algorithms deemed to be "mathematical" are not. This ruling alone supplies fodder for a growing number of legal battles, which feature arguments over distinctions between "mathematical" and "nonmathematical" algorithms, mathematical algorithms and numerical equations, equations and "laws of nature" or "basic truths," algorithms and "mental steps," and so on and on.

Software pirating, which some companies claim robs them of more than half of their potential sales, raises more endless questions. For example, if a team uses "reverse engineering" to unlock the secrets of a program so it can design a new one just like it, does that violate copyright?

The report, "Computer Software and Intellectual Property," notes that rapid developments in software technology make the whole subject a moving target for regulation. And "since there is no agreement on common terminology, it is difficult even to discuss protection issues with precision." Yet, how these issues are resolved will have an important influence on the shape of global competition in the coming years.



A Big Bird in the Sky for Scientists?

Atmospheric researchers would like to get their instruments right into the heart of the Antarctic ozone hole and keep them there a while. But how do you do that without suffering the myriad launch and control problems presented by balloons or the limited range and duration of manned overflights? Perhaps you hitch a ride on a Condor.

Ozone researchers are eyeing the Boeing Condor, a prototype that is the world's largest unmanned air vehicle. With a wingspan of 61 meters, the Condor can climb 20 kilometers into the stratosphere, an altitude now only available to scientists with NASA's manned spy plane, the ER-2. And Condor can cruise for days rather than hours on a tank of fuel—all the while monitoring changing stratospheric chemistry, a growing hurricane, or the workings of the upper reaches of the climate system.

For researchers wanting the economy model, how about Perseus? Now under construction by John Langford, designer of the human-powered Daedalus that flew from Crete to Santorini (Thera), and James Anderson of Harvard University, Perseus is even slower than Condor but it should be able to fly on lithium batteries 26 kilometers up into the Antarctic ozone hole by early 1992.

Billions Needed for Child Care

A panel of the National Research Council has called for expanded public funding—an additional $5 billion to $10 billion annually—of child care and preschool programs. It also emphasizes the need for national standards to improve the quality of child care.

The study group, headed by John L. Palmer, dean of Maxwell School of Citizenship and Public Affairs at Syracuse University, reviewed research on maternal employment, child care, and mother-child attachment. Its report, "Who Cares for America's Children?" concludes that contrary to the implications of early research on the subject, there is nothing intrinsically harmful about child care. A secure attachment is what counts, whether or not this is with the mother.

Currently, about $16 billion annually is spent on child care by governments and private sources, including parents. By 2000, an estimated 70% of preschool-aged children will have mothers who work.