Stem Cell Research Needs United Support

THE CONTROVERSY OVER THE USE OF HUMAN embryonic stem cells has received renewed public attention as the current administration debates whether to allow federal funds for this biomedical research. Scientists naturally worry that federal guidelines will be overturned and researchers will be barred from the use of federal money. In their Editorial "Disappearing stem cells, disappearing science" (27 Apr., p. 601), Irving L. Weissman and David Baltimore address the implications that such a reversal would have and highlight the reasons for scientists' concern.

> **"Together, we can find support for [stem cell] research and forge policies that recognize the moral, ethical, and societal concerns..."**

As the Editorial indicates, this research has vast potential with regard to human health issues. On the policy side, however, there is room for improvement. Clear National Institutes of Health guidelines are crucial to allow scientists to proceed with pluripotent stem cell research, which offers hope to millions of U.S. citizens who suffer from debilitating and deadly diseases. Such guidelines would provide appropriate public oversight for stem cell research and offer the best assurance that the research will be of the highest quality. Congresswoman Carolyn Maloney (D-NY) and I have introduced a resolution expressing the sense of Congress that federal funding for pluripotent stem cell research should be allowed to move forward (*1*).

As a community, scientists have a great deal of influence, but only if they choose to wield it. Both politicians and the public need to hear from the scientific community: I urge you to speak out. Together, we can find support for this research and forge policies that recognize the moral, ethical, and societal concerns without handicapping the science.

REP. CONSTANCE A. MORELLA (R-MD)
U.S. House of Representatives, Washington, DC 20515, USA. E-mail: please address to jonathan.dean@mail.house.gov

References and Notes

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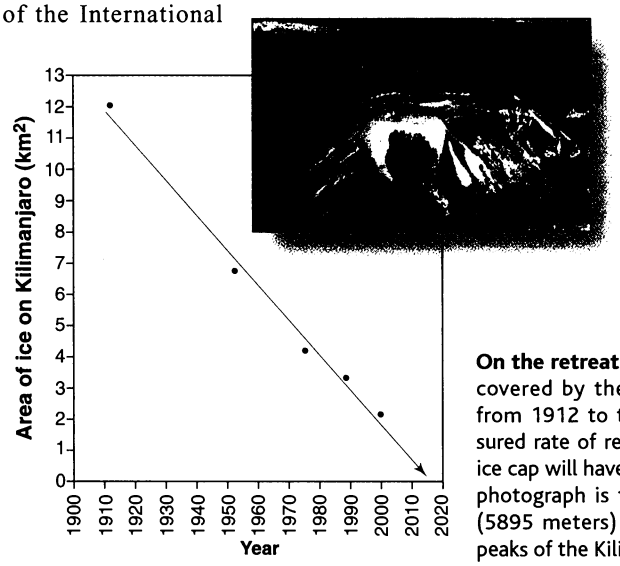
A Global Paleoclimate Observing System

A MAJOR OBSTACLE TO PRODUCING RELIABLE predictions of climate change and its impacts is a lack of data on time scales longer than the short instrumental record. Recently initiated climate observation programs will need to be continuously operated for at least 50 years before they begin to provide information that is relevant to this problem. In contrast, natural archives of past climate variability can provide relevant information now. Unfortunately, some of the most valuable paleoclimate archives are being rapidly destroyed, largely as a result of human influences (see the related News of the Week article in this issue by Koenig). We cannot afford such an irreversible loss. The Past Global Changes (PAGES) program of the International Geosphere–Biosphere Programme therefore calls for scientists, funding agencies, and institutional partners to establish immediately a coordinated international Global Paleoclimate Observing System (GPOS) to complement the Global Climate, Terrestrial, and Ocean Observing Systems (GCOS, GTOS, and GOOS, respectively) that focus only on contemporary observations.

An example of the loss of paleoarchives is the rapid retreat of alpine glaciers in the tropics and temperate latitudes. Ice cores from such glaciers have been used to reconstruct temperature, precipitation, and atmospheric dust levels, and to provide records of changes in the strength of the Asian monsoon and El Niño–Southern Oscillation (*1*). As shown in the figure, the total area of the summit glacier on Mt. Kilimanjaro decreased by 82% between 1912 and 2000. Soon, the only information left from the Kilimanjaro ice will be what is contained in the cores extracted last year and stored in freezers at Ohio State University. The situation on Kilimanjaro is not unique. Tropical warming is causing the rapid retreat of ice caps and glaciers at high elevations in the tropics and subtropics around the world (*2*).

A second example of paleoarchives that are being lost is the widespread damage to tropical corals. Measurements in corals have been successfully used to reconstruct sea surface temperature, salinity, and the surface circulation of the tropical oceans for the past several hundred years, and for isolated windows in the more distant past (*3*). Large living corals (more than 100 to 200 years old) suitable for climate reconstruction purposes are relatively rare in most reef areas of the world. These



On the retreat. The plot shows the total area covered by the ice cap on Mt. Kilimanjaro from 1912 to the present. Should the measured rate of retreat continue unchanged, the ice cap will have vanished by around 2015. The photograph is the view southeast over Kibo (5895 meters) and Mawenzi (5149 meters) peaks of the Kilimanjaro massif.

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