

Bush holds cautious course on global change

While several European nations stressed the need to stabilize and even reduce greenhouse gas emissions as soon as possible, President Bush took a more restrained position on global change at a 17-nation conference last week in Washington, D.C.

Bush called for internationally coordinated research programs to address the scientific and economic uncertainties surrounding global environmental problems and the impact of proposed mitigation strategies. He denied using research to forestall action to reduce global change. At the same time, he did not follow the European lead by voicing an intent to adopt stringent U.S. limits on carbon dioxide emissions.

The White House, which convened the conference in anticipation of formal negotiations for an international climate treaty later this year, called it the first meeting to focus on both economic and scientific issues regarding global change. At the conference, Bush repeatedly stressed that nations must find mitigation policies that do not limit economic growth. "Environmental policies that ignore the economic factor, the human factor, are destined to fail," he said.

At times, the administration drew criticism for emphasizing scientific and economic uncertainties. That emphasis was explicit in a set of "talking points" drafted by administration staffers to brief members of the U.S. delegation. Under the heading of "Debates to Avoid," the internal memo warned that it is "not beneficial to discuss whether there is or is not warming, or how much or how little warming. In the eyes of the public we will lose this debate. A better approach is to raise the many uncertainties that need to be better understood on this issue."

The document created problems for the administration when the Sierra Club obtained a copy and distributed it at the conference. EPA Administrator William Reilly told SCIENCE NEWS, "I think we had a couple of glitches in this conference and I have the sense that this was one of them." He added that he hadn't paid attention to the talking points.

Lucien Bouchard, Canada's environmental minister, commented that the U.S. delegation gave the impression of over-emphasizing the uncertainties on the first day of the conference, but that on the second day Bush made clear his commitment to act even in the face of the uncertainties.

The administration cited its support for a number of policies that would slow the accumulation of atmospheric greenhouse gases while at the same time addressing more immediate problems. Expected worldwide phaseout of chlorofluorocarbons, strengthening the Clean Air Act and planting 1 billion trees a year

will reduce by 15 percent the amount of U.S. greenhouse gas emissions otherwise predicted for the end of the century, Bush told the conference.

Such steps, though, will not stabilize emission levels. Even with the reductions, U.S. carbon dioxide production will rise by roughly 35 percent in the next 10 years, Reilly notes.

In contrast, West German environmental minister Klaus Töpfer announced he will urge his government to reduce Germany's current carbon dioxide produc-

tion by 25 percent by the year 2005. The Netherlands has already adopted a policy to stabilize its emissions by 1995, with further reductions by 2000.

Reilly praises such goals but downplays the split between European and U.S. strategies. "Those who talk about the differences between our position and the Europeans' miss the enormous difficulties we have with how many of the top emitters of carbon dioxide we have yet to engage in this," he says. "The Soviet Union and China are second and third behind the United States, and neither has indicated any readiness to cut back."

— R. Monastersky

Giant turtles built for comfort, not speed

It's not easy to measure the metabolism of a 1,000-pound turtle. But three researchers who took pains to do so have characterized a mechanism that allows these large reptiles, traditionally considered "cold-blooded," to stay warm in chilly environs. Their findings support the controversial proposition that cold-blooded dinosaurs could have lived comfortably in the Cretaceous Arctic, about 100 million years ago.

Frank V. Paladino of Purdue University at Fort Wayne, Ind., working with Michael P. O'Connor and James R. Spotila of Drexel University in Philadelphia, studied the leatherback turtle, *Dermodochelys coriacea*, one of today's largest reptiles. Biologists classify turtles as ectothermic, or unable to adjust their body temperatures significantly using metabolic reactions. But somehow, leatherbacks range from the tropics to the Arctic and can maintain internal temperatures of 25°C in 7°C seawater.

The researchers put respirators over the snouts of six leatherbacks, then suspended the animals in tripod-supported hammocks for a few hours before measuring oxygen consumption rates. They also measured these rates in active, nesting leatherbacks and used mathematical models to predict heat-exchange rates through turtle tissues and blood. The bottom line, they report in the April 26 NATURE, is that although leatherbacks feature metabolic rates far lower than those in mammals, their insulating bulk lets them retain heat efficiently in cold environs. (In warm climes, they note, leatherbacks apparently enhance heat loss by increasing blood flow to their extremities.) The researchers suggest a new term for large reptiles' use of body mass to stay warm in the cold: gigantothermy.

Fossils verify that dinosaurs spent time in the Arctic, but scientists remain divided over whether these huge reptiles simply migrated through the region — which was cold in the winters but not permanently frozen — or lived there year-round. Paladino says gigantothermy

could have allowed dinosaurs to survive the chilly climate even without the high metabolic rates or hyperactive behaviors that others have proposed. — R. Weiss

CPR: Inflatable investment

The sight of emergency medical personnel pushing against the chest of a heart attack victim may become a thing of the past if a new method of cardiopulmonary resuscitation (CPR) proves successful in expanded trials.

In traditional CPR, rhythmic pressure applied to the chest decreases chest volume. That increases pressure in the thoracic cavity, forcing blood to the heart and brain during the critical minutes before spontaneous respiration and heartbeats can be restored. But the intense local pressure near the sternum also can cause life-threatening trauma to the rib cage and lungs.

Joshua E. Tsitlik, Henry Halperin and their colleagues at the Johns Hopkins University School of Medicine in Baltimore have devised a computer-controlled, inflatable vest that distributes bursts of pressure equally around the circumference of the chest and back. The vest provided a 100 percent survival rate in seven dogs suffering from cardiac arrest, without causing any of the CPR-induced injuries observed in dogs getting traditional CPR. In experiments with human patients who had failed to respond to standard CPR, the vest increased blood pressure to nearly double the levels achieved using classical chest compressions.

Those results "give us a real strong feeling" that resuscitation success rates can be significantly improved and that the degree of brain damage due to short-term oxygen loss can be reduced, Tsitlik said at the Biomedical Engineering 25th Anniversary Symposium, held at Hopkins last week. The team recently received FDA permission to use the vest in initial resuscitation attempts on victims of cardiac arrest. □