

lose by making denial of the computer the politically necessary tit for tat for the Shcharansky trial and other untoward incidents.

In the wider context, restrictions on trade with the Soviet Union are of doubtful value. Conservatives have always been inclined to agree with Lenin, who observed in a well-known passage that "The capitalistic economy plants the seeds of its own destruction in that it dif-

fuses technology and industry, thereby undermining its own position." A different, and perhaps more sophisticated, viewpoint is that to deny specific items to a country as technically capable as the Soviet Union only compels it to build the product itself: better, on this view, to sell the Soviets whatever they desire in order to foster a technological dependence.

Theory apart, the facts are that the balance of trade with the Soviet Union has

been in the United States' favor. In 1976 the Russians imported the \$2 billion of goods from the United States, of which about 60 percent was grain, and exported only \$0.5 billion worth. Trade restrictions only assist the Russians to reduce this imbalance. But sale of the Sperry-Univac computer was not canceled for economic reasons. As a White House official explained, "This was a political call."—NICHOLAS WADE

Endangered Species Act Survives Senate Hunters

The U.S. Senate last week preserved the life of the Endangered Species Act for three more years. Although the act was widely criticized as a result of the controversy earlier this year involving the snail darter and the Tellico Dam in Tennessee (*Science*, 12 May), the Senate renewed the measure by a vote of 94 to 3 and by similar margins defeated a number of debilitating amendments. The strength of the support for the act is ex-

pected to carry over into the House of Representatives, where it will be taken up in mid-August.

The vote on the Senate floor was a victory for environmentalists, who had been lobbying feverishly in favor of the bill, and for the chairman of the Subcommittee on Resource Protection, Senator John Culver (D-Iowa). By permitting a series of minor changes and objecting strenuously to the major ones, Cul-

ver was able to shepherd the bill through several days of debate in almost exactly the form that his subcommittee had approved it. Important support was provided by Senator Howard Baker, a Republican member of the subcommittee and a representative of the state where the \$116-million Tellico project was bested by the 2-inch darter.

Together, Culver and Baker got the subcommittee, and ultimately the Senate, to pass the only major amendment to the act, one which removed the objections of development-oriented congressmen that the act was inflexible, and which would also prevent developers from slipping their projects through loopholes. Under the amendment, a Cabinet-level committee could be petitioned to exempt specific projects from the act's provisions, but only if an otherwise irre-

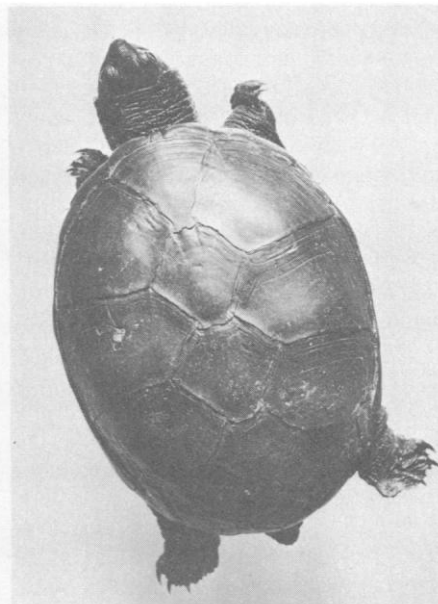
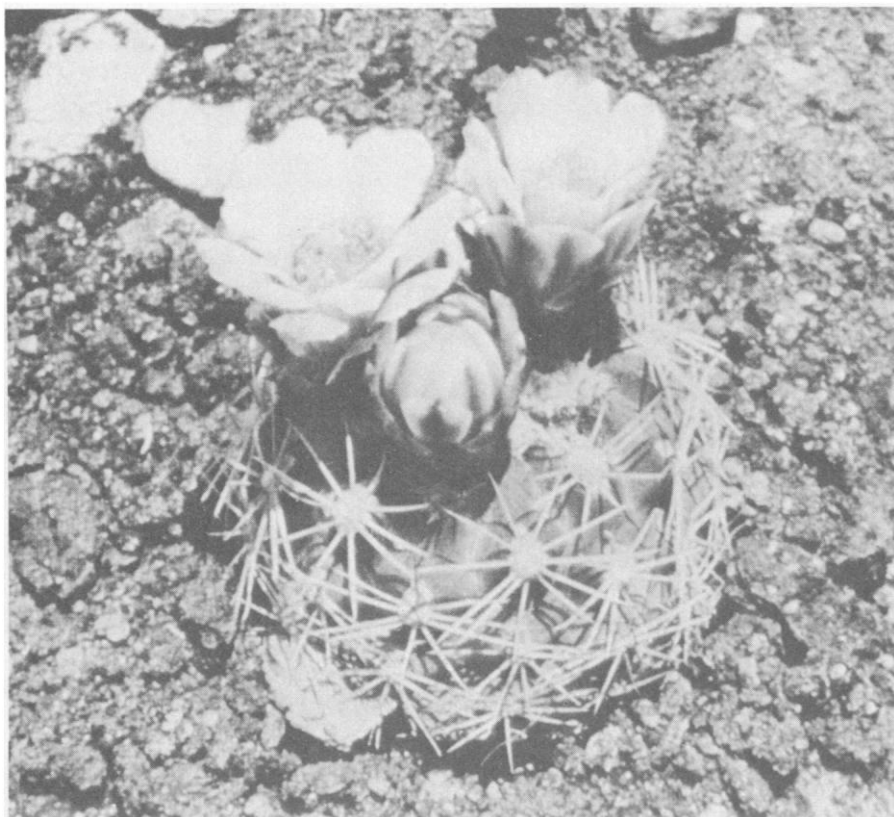


Photo by Illinois Natural History Survey

Renewal of the act will facilitate protection of the 2-inch mesa cactus (left), threatened by strip-mining in Colorado, and the Illinois mud turtle (top), a relict species with 200 surviving members threatened in the Midwest by the drainage of land for agriculture.

Photo by Gary Lyons

solvable conflict exists, if the project is of regional or national importance, and if the benefits of the project clearly outweigh the benefits of preserving a species or habitat.

Although environmentalists expressed a public preference for keeping the act as it was, they gleefully noted in private that under the Culver-Baker amendment, five of the seven Cabinet officials on the Endangered Species Committee would be required to vote in favor of an exemption for it to pass. In the present Administration, at least, four of the seven officials will be inclined to oppose an exemption: the Secretary of the Interior, the chairman of the Council on Environmental Quality, the administrator of the Environmental Protection Agency, and the head of the National Oceanic and Atmospheric Administration. (The other members are the Secretary of the Army, Secretary of Agriculture, and governor of the state where the project is located.) Despite this mostly favorable lineup, Senator Gaylord Nelson (D-Wis.) objected that the amendment would weaken the act and tried to block it. Although he was soundly trounced, he was able to get the budget of the Cabinet committee cut from \$2.5 million to \$750,000.

In a crucial vote, the Senate rejected by 76 to 22 a proposal by Senator John Stennis (D-Miss.) that would have prevented the act from applying to projects already under way at the time of its initial passage in 1973. The \$2-billion Tennessee-Tombigbee Waterway, which may endanger several natural species in Mississippi, would have been included in the exemptions, as well as several dozen other projects.

Most of the amendments that were passed would barely affect the act's operation. Senator James McClure (R-Idaho) cited the case of one of his constituents who was prosecuted by the government for killing a grizzly bear that had wandered near his home from an adjacent park; as a result, it will now be legal to kill a member of an endangered species in self-defense. Senator Jake Garn (R-Utah) claimed along with his friend Senator Malcolm Wallop (R-Wyo.) that not enough scientists and journalists were scrutinizing proposed endangered species designations; as a result, the listings will be made available to scientific journals. Senator William Scott (R-Va.) was concerned that the act could endanger a species dear to his own heart, the military installation: "Suppose a bird of some endangered species was in front of an intercontinental ballistic missile," he told the Senate. "They could not release that missile. To me that would be a ri-

diculous offense. . . . Any commander worth his salt . . . would go ahead and release the missile, but he would be disobeying the law and would be subject to

a fine of \$20,000 and imprisonment for up to a year." The Senate passed his amendment, which provides for the National Security Council to notify the Cab-

Efforts to Stop Paraquat Set Back

In a decision that neither of the contenders was particularly willing to crow about, U.S. District Judge Joseph Waddy on 8 June denied a request for an injunction against continued State Department funding for the spraying of paraquat, a herbicide, on marijuana in Mexico. The injunction had been sought by the National Organization for the Reform of Marijuana Laws (NORML), which based its suit on the premise that the State Department was required by federal law to file an environmental impact statement on the spraying and had not.

Judge Waddy accepted that argument but denied the injunction nevertheless. As part of its defense, the State Department had agreed to prepare a formal impact statement on the effects of the spraying in the United States, as well as an "environmental analysis" of the effects within Mexico—both by this fall. A letter from the Mexican attorney general claiming that the spraying program would continue without U.S. assistance "to the extent of Mexican capacities" was also placed in evidence. Thus, government attorneys successfully argued, an injunction against continued support while the statements are being prepared would not provide any particular remedy. Added to this, said Waddy, was the consideration that the use of marijuana is, after all, illegal; moreover, the decision to support the spraying involves foreign policy, an area where courts are traditionally loath to tread.

The upshot is that although the State Department was found to have been in violation of federal law since the inception of the program in 1973, funding for the spraying—as far as the court is concerned—can continue. Several congressmen, however, feel otherwise. In the next few weeks, two Democrats from California, Representatives Henry Waxman and George Miller, as well as a Republican from Illinois, Senator Charles Percy, intend to introduce amendments to the House and Senate versions of the Foreign Assistance Act that would prevent the use of U.S. funds to support the spraying. Currently, the act contains \$13.5 million in assistance for the program in 1979.

Waxman and Miller's amendment would cover only the use of paraquat in the eradication program, but Percy's would go further and prevent the use of any herbicides at all that "cause serious harm to the health of persons who may use or consume the sprayed marijuana." It also would require the Environmental Protection Agency, the Department of Agriculture, and the National Institute on Drug Abuse to advise the State Department of any possible risks to human health from herbicide spraying.

Consideration of the Foreign Assistance Act was delayed by the congressional leadership several times so as not to embarrass President Carter during his recently concluded economic summit in Bonn, West Germany; the Senate and House appropriations committees had drastically reduced the President's foreign aid funding request. Though the bill is expected to come up in the Senate during the week this goes to press, no one on the Hill is willing to predict whether the paraquat amendment will pass. The issue remains fairly volatile, despite the fact that 32 members of the House have signed a letter to Carter stating that "It is unconscionable, now that the potentially serious health implications of the current program are realized, for the spraying . . . to continue." There are some fears that favorable votes on the amendments could be exploited by conservative challengers in the elections this fall. "We're presenting it as a positive public health issue," said a congressional staff supporter. "Also, we'll point out—in the light of Proposition 13—that the eradication program has been a failure and a waste of taxpayers money as far as marijuana is concerned." Even if the amendments fail, the program will not have clear sailing: NORML is appealing its lawsuit to a higher federal court.—R.J.S.

inet committee when it believes an exemption to the act should be granted on the basis of military need.

Most of the debate, in contrast, was on a higher plateau. Opponents and supporters earnestly bantered back and forth about whether or not damage to the environment by humans should be counted as part of the evolutionary process. The value to man of the lesser known of more than 2 million species and subspecies of animals and plants was considered. According to Stennis, endangered life forms "have their place, but there are other activities of our human family. The people have to make a living, to maintain an economy, to make money to pay taxes . . . that part of our life must go on, too." Senator Patrick Leahy (D-Vt.), among others, supplied the rejoinder: "Ultimately, we are the endangered species. *Homo sapiens* is perceived to stand at the top of the pyramid of life, but the pinnacle is a precarious station. We need a large measure of self-consciousness to constantly remind us of the commanding role which we enjoy only at the favor of the web of life that sustains us, that forms the foundation of our total environment. . . . We exist on this orbiting globe locked and joined with the environment. We share the planetary gene pool with that snail darter in the Little Tennessee River."

Conflicts May Lie Ahead

On 19 July, the day of the final vote, the latter sentiments prevailed. Moreover, they prevailed despite Senate awareness that nearly 2000 species and habitats may soon be added to the endangered list, and that even the present listing will bring to a head several intractable conflicts over development versus species protection in the next year.

On the other hand, the supposedly intractable conflict that sparked the debate—involving the Tellico Dam, built by the Tennessee Valley Authority (TVA)—now appears to be less than intractable. In the face of a Supreme Court injunction against further construction, David Freeman, a newly appointed TVA Commission chairman, recently told Congress that several alternative uses are available and under consideration for the land purchased for the water backup and surrounding area. Times and values have changed since 1939, when planning for the dam began, Freeman said, and no estimate of the project's costs and benefits has been prepared in the last decade. He promised a new estimate by August 10, one which would include the values of lost farmland and sites of historical importance.—R. JEFFREY SMITH

APPOINTMENTS

Leonard Laster, dean, College of Medicine, Downstate Medical Center, State University of New York, to president, University of Oregon Health Sciences Center. . . . **Henry H. Bauer**, professor of chemistry, University of Kentucky, to dean, College of Arts and Sciences, Virginia Polytechnic Institute and State University. . . . **David Finkelstein**, professor of physics, Yeshiva University, to dean of sciences at the university. . . . **John D. Harries**, professor of anesthesiology, Eastern Virginia Medical School, to dean, Medical School, Mercer University. . . . **Gary W. Bogess**, associate professor of chemistry, Murray State University, to dean, College of Environmental Sciences at the university. . . . **Russell A. Primrose**, professor of chemical engineering, University of Houston, to dean, School of Engineering, University of Dayton. . . . **James N. Seiber**, associate professor of environmental toxicology, University of California, Davis, to chairman of the department. . . . **George P. Vennart**, acting chairman of pathology, Medical College of Virginia School of Medicine, Virginia Commonwealth University, to chairman of the department. . . . **James L. Kinsey**, acting head, chemistry department, Massachusetts Institute of Technology, to head of the department. . . . **Chris Quigg**, visiting scholar, University of Chicago, to head of theoretical physics, Fermi National Accelerator Laboratory. . . . **Robert J. Schultz**, associate professor of orthopedic surgery, Albert Einstein College of Medicine, to chairman of orthopedic surgery, New York Medical College. . . . **Samuel S. Stradling**, professor of chemistry, St. Lawrence University, to chairman of chemistry at the university. . . . **Larry N. Vanderhoef**, executive officer of biology programs, University of Illinois, Champaign-Urbana, to head of botany at the university. . . . **Clive L. Dym**, senior scientist, Bolt Beranek and Newman Inc., to head of civil engineering, University of Massachusetts, Amherst. . . . **Nicholas George**, professor of electrical engineering and applied physics, California Institute of Technology, to director, Institute of Optics, College of Engineering and Applied Science, University of Rochester. . . . **Albert Simon**, professor of mechanical and aerospace sciences, College of Engineering and Applied Science, University of Rochester, to chairman of mechanical and aerospace sciences at the university. . . . **Edmond E. Griffin**,

assistant professor of physiology, University of Texas Health Science Center, to chairman of biology, University of Central Arkansas. . . . **Daniel Offer**, acting chairman of psychiatry, Michael Reese Hospital and Medical Center, to chairman of psychiatry. . . . **Edward N. Lorenz**, professor of meteorology, Massachusetts Institute of Technology, to chairman of meteorology at M.I.T. . . . **David W. Hamilton**, associate professor of anatomy, Harvard University, to chairman of anatomy, University of Minnesota. . . . **Gergory A. Kimble**, professor of psychology, University of Colorado, to chairman of psychology, Duke University. . . . **Wesley S. Moore**, associate professor of surgery, University of California, San Francisco, to chairman of vascular surgery, University of Arizona. . . . **Charles E. Putnam**, associate professor of radiology and internal medicine, Yale University, to chairman of radiology, Duke University.

RECENT DEATHS

William K. Boardman, III, 52; professor of psychology, University of Georgia; 22 January.

L. Leo Campbell, 83; former plant pathologist, Washington State University; 3 January.

Kurt Godel, 71; professor emeritus of mathematical logic, Institute for Advanced Study; 14 January.

Emanuel J. Levin, 64; professor of radiology, Downstate Medical Center, State University of New York; 20 January.

Alvin Nason, 58; professor of biology, Johns Hopkins University; 29 January.

Armand J. Quick, 83; former hematologist, Marquette University; 26 January.

John H. Rietz, 97; professor emeritus of veterinary science and animal pathology, West Virginia University; 15 January.

Gertrude van Wagenen, 84; former professor of obstetrics and gynecology, Yale University School of Medicine; 8 February.

Phineas W. Whiting, 90; geneticist and consultant, Oak Ridge National Laboratory; 9 February.

Erratum: In the report "The moon in Heiligen-schein" by R. L. Wildey [200, 1265 (1978)], Eq. 2 should read:

$$\Phi(g, i, \epsilon) = [\Phi_0(g)] \sum_{n=0}^9 a_n \left(\frac{\cos \epsilon}{\cos i} \right)^n$$

Erratum: In the 30 June issue of *Science*, p. 1466 Mark Ptashne was incorrectly identified as a member of the faculty of Harvard Medical School. Ptashne is professor of biochemistry and molecular biology at Harvard University.