response to pressure from creationists." In addition, noted Mattox, "The 'meaning of human existence' is not the stuff of science but rather, the province of philosophy and religion. By its injection into the rules language which is clearly outside the scope of science, the board has revealed the non-secular purpose of its rules."

The attorney general's opinion is, as State Board of Education chairman Joe Kelly Butler is quick to point out, only that—an opinion. There is no statutory requirement that agencies must follow attorney general's opinions, though there is substantial precedent. The board would, however, be in a difficult position if it chose to ignore it. From a very practical point of view, if litigation were brought against the board, the attorney general would not be in a position to defend, as would normally be the case. In which case the board might incur considerable expense in hiring outside lawyers, in addition to attracting a great deal of political unpopularity. Hudson says that People for the American Way will bring suit if the board fails to repeal the rules at its mid-April meeting.

The state textbook committee begins hearings on possible adoptions in July, but texts will be available several months earlier. If the rules have been repealed, Hudson expects committee members, who are drawn from state educators, to be in a strong position to reject offerings that are considered weak on evolution, just as the New York committee did. And, unlike in previous years, committee hearings will not be restricted to protests against books, which process has been dominated by the Gablers; positive comments from scientists and educators will be heard too, a change in procedure secured by intense lobbying by People for the American Way. If the rules are not appealed, People for the American Way will file for delay of textbook selection by injunctive relief, until the merits of the case are settled in court.

Even if the rules are taken off the books, says Hudson, the board's activities will have to be closely monitored. Chairman Butler has been a strong proponent of the rules, in spirit and letter. According to board procedure, decisions to accept or reject the textbook committee's recommendations can be made without explanation. "If we want to reject a book because we don't like the way someone parts his hair, that's our prerogative," said Butler at a hearing last May. "We've never had to tell anyone why we don't like a book and that's the way it's going to be as long as I'm chairman."—**ROGER LEWIN**

Reagan Intends to Resist Congress on ASAT Treaty

Last fall, there was surprising unanimity when the Senate approved legislation requiring the Reagan Administration to certify, by this spring, that it is "endeavoring in good faith to negotiate with the Soviet Union a mutual and verifiable ban on antisatellite [ASAT] weapons." As a result, a good many legislators will be disappointed when the Administration formally responds that no such negotiations are anticipated because an ASAT ban is unverifiable.

This statement, which is due by 31 March, has not yet been officially released, but the latest draft is said by informed sources to reflect the Administration's unanimous view that the difficulties of verifying compliance with a ban on ASAT possession are so great as to render negotiations useless. As Richard Perle, an assistant secretary of defense for international security policy, recently told the Senate Armed Services subcommittee, "we cannot now foresee the means of verification" primarily because the diminutive size of an ASAT makes it easy to conceal, either on the ground or in space. Even a ban on ASAT testing would be too difficult to monitor, he said, because various components of a full-fledged system could be tested surreptitiously.

This position puts the Administration at odds with a panel of expert scientists convened last year by the Union of Concerned Scientists (*Science*, 28 October 1983, p. 394), and with the Senate Committee on Foreign Relations, which concluded last November that "the failure to pursue space arms limitations could be a catastrophic mistake" and that verification was a difficult problem which "can only be resolved at the bargaining table." Various committee members say they intend to seek the elimination of funds for production and testing of the existing U.S. ASAT during congressional deliberations on the annual defense authorization and appropriations bills.

The Administration, of course, has different plans, as evidenced by the latest annual report issued by Richard DeLauer, the Pentagon's top scientist. "Ambitious tests are planned this year" to demonstrate the capability of the present ASAT, his report says, adding that "we have directed a comprehensive study to select a follow-on system with additional capability to place a wider range of Soviet satellite vehicles at risk."—**R. JEFFREY SMITH**

House Panel Denies Exception for Drug

The House version of the National Organ Transplant Act (H.R. 4080) has emerged from the Ways and Means health subcommittee minus what has come to be called the "cyclosporine amendment." The deleted provision would have extended Medicare coverage to include payment for long-term use of immunosuppressive drugs that are deemed essential to transplant patients' survival. One of the leading immunosuppressants is cyclosporine.

Transplant patients require immunosuppressant therapy indefinitely. Opponents of the cyclosporine amendment argued that it would break the prevailing precedent under which Medicare pays for drugs only while a patient is in the hospital. There is a statutory prohibition against payment for self-administered drugs.

Cyclosporine became the focus of dispute largely because it is substantially more costly than many other immunosuppressant drugs. One estimate put the cost of use of the drug by a kidney transplant recipient at $6000 a year. Representative Henson Moore (R–La.) in opposing the proposal said it would cost the government $120 million over 4 years for all Medicare recipients who have received transplants.

In addition to objections based on precedent and cost, opponents of the change also question whether cyclosporine, which is made by Sandoz, is clearly superior to other immunosuppressant drugs. Subcommittee staff members cite three reports indicating that kidney transplant patients using the drug showed only marginally better results.

The matter is far from settled, however. Cyclosporine has made a substantial impact in the organ transplant field in the past 2 years, being credited by some, for example, with a near doubling of the 1-year survival rate of

liver transplant patients (*Science*, 1 July 1983, p. 40). Committee sources say that pressure for revival of the proposal to change the law is building. Testimonials from physicians who endorse the drug's efficacy and appeals from patients who ask that Medicare and Medicaid pay for the drug are rolling in. It is conceiveable that in the full committee vote on the bill, scheduled for 25 March, or in later action, cyclosporine could suppress the congressional rejection syndrome.

—JOHN WALSH

West Germany Plans Major Technology Investment

Following the examples set by Britain, France, and, most recently the commission of the European Economic Community in Brussels, the West German government has approved a $1.2-billion, 5-year plan to boost research and development in microelectronics, advanced computers, and communications technologies.

Announcing the plan in Bonn, the West German minister for research and technology, Heinz Riesenhüber, said that several of Germany's major electronics companies had agreed to cooperate with the government program, adding funds of their own to turn research results into commercial products. Riesenhüber added that he is also taking various steps to increase contacts between federal ministries, industry, and universities.

The plan includes a number of indirect measures which are aimed at making the German computer industry more competitive with those in Japan and the United States. These include the development of a long-term communications strategy, moves to encourage the creation of venture capital, and additional training places in a range of high technology fields.

Government officials in Bonn say that the development of information technology is now their "highest priority" in the research field. Of the total amount of money being made available by the federal government, almost $200 million will be spent on research into microchip memories, and $240 million on advanced computer systems.

The German government's decision comes soon after it had lifted previous reservations and agreed to support a 5-year, $1.5-billion program of research into the same type of areas financed jointly by the EEC in Brussels and 12 major European electronics companies—the European Strategic Program for Research and Development in Information Technology (16 March, p. 1159).

In addition Siemens, one of the world's largest manufacturers of electronics components and whose annual R & D budget is almost $1.4 billion, has recently opened a basic research laboratory near its headquarters in Munich with two other major companies—Bull of France and International Computers Ltd. of Britain.

Last week, the 12 companies involved in the European strategic program took a step further toward the creation of an integrated European marketplace, considered one of the main long-term goals of the research program, by agreeing to accept common standards for data transmissions in order to allow their hardware to communicate more easily.

The companies have asked the ten member countries of the EEC to endorse the standards, which they intend to introduce next year, and to agree that they will be used as the basis of all future government purchases.—DAVID DICKSON

Delaware Bay on the Rebound

In contrast to the documented decline of many American estuaries, a recent progress report* on Delaware Bay is cautiously upbeat. By the common indicators, the Delaware River and its bay have made a comeback from seriously polluted conditions.

One of the findings of the 3-year study, for example, is that a marked increase in dissolved oxygen levels has occurred in the upper estuary at Philadelphia, which was the most heavily polluted area of the system. Credit for the turnaround is accorded a cleanup effort extending over three decades in which federal, state, and local authorities cooperated. The success is mainly attributed to the obvious—improved sewage treatment plants and tougher controls on industrial effluents.

The Delaware also enjoys some natural advantages that facilitated recovery. Delaware Bay differs hydrographically from the neighboring and larger Chesapeake Bay which is currently considered to be on the environmental degradation serious list. The Chesapeake has a deep channel running for much of its length, contributing to temperature stratification of bay waters and relatively slow flushing. The resulting buildup of phosphorus and nitrogen nutrients increases algal production that leads to oxygen depletion and the decline of aquatic vegetation and fauna. Delaware Bay is relatively shallow and flushes itself in about 100 days, an estimated three to four times faster than the Chesapeake.

Major impetus for the cleanup in the 1970's has come from the interstate Delaware River Basin Commission with federal support, particularly funding for sewer treatment facilities under the Clean Water Act passed in the early 1970's.

Although the estuary has evidently rallied, the new study, carried out by researchers of the Delaware and New Jersey Sea Grant programs, emphasizes that all the problems are not yet solved nor are all the questions about the estuary answered. Jonathan H. Sharp, the University of Delaware oceanographer who managed the study, notes, for example, that the reasons for the sharp declines in fisheries yields in the bay since the turn of the century are not fully understood. It has been assumed that overfishing and a decline in water quality were to blame. But Sharp says that, while fish population overall now seems to be steady, some important species continue to decline and it is necessary to seek a better understanding of the relation of water quality to fisheries.

Among the other phenomena which the report notes need watching are the continued high nutrient levels in the estuary and the buildup of trace metals in bay sediments and the contamination of tributaries with toxic organic compounds. So, while the bay is on the rebound, close vigilance, continued research, and careful management are prescribed.—JOHN WALSH

**The Delaware Estuary.* Study sponsored by the National Oceanic and Atmospheric Administration and the Delaware River and Bay Authority.