1971 by domestic and commercial use and industrial use, we obtained a breakdown for the 1960's from *Statistics of Energy, 1965–69* (Organization for Economic Cooperation and Development, Paris, 1971) and N. Guyol [*The World Electric Power Industry* (Univ. of California Press, Berkeley, 1969], and applied this to total electricity consumption for 1971. P. Ehrlich and J. Holdren [*Science* **171**, 1212 (1971)], suggest that per capita energy consumption is a function of population size. However, we obtained insignificant correlations between national population size and each of our four measures of per capita energy consumption.

4. Most of the indicators in Table 2 are straightforward. For most, technical definitions are in the main data source: *United Nations Statistical Yearbook, 1972* (United Nations, New York, 1973). "Calories in diet" refers to average daily supply per capita of foodstuffs at the retail level after deduction for animal feed, seed, industrial purposes, waste, and processing losses. Life expectancies are the average for males and females. We have taken "second level" education to be roughly equivalent to high school, and "third level" to college. Data on male suicides were taken from the *United Nations Demographic Yearbook, 1971* (United Nations, New York, 1972). Museum attendance data were taken from the *Unesco Statistical Yearbook, 1971* (Unesco, Belgium, 1972). "Manufacturing work hours per week" refers to the average number of hours worked per week by a wage earner in manufacturing. Sex discrimination in college (and high school) is represented as the ratio of male students to total students, which is always greater than 0.5.
5. We have used the United Nations designation of nations as developed market economies, developing market economies, or centrally planned (communist) economies, as in *United Nations World Energy Supplies, 1968–71* [see (*3*)].
6. Any summary statistic has the potential to be misleading. In particular, the product-moment correlations used here may be highly affected by a few extreme values of either variable [H. Blalock, *Social Statistics* (McGraw-Hill, New York, ed. 2, 1972), p. 381]. To illustrate, among the 19 developed market nations there is a correlation of .73 between per capita energy consumption and total land area. Among these countries, it is obvious that the United States and Canada are both very high per capita energy consumers, and both have very large land areas. This suggests that the high correlation may be an artifact of these two extreme cases. In fact, when the correlation is recalculated with the two large countries excluded, it becomes insignificant. In order to guard against this sort of artifactual inflation or deflation of a correlation, we have rechecked all correlations with the United States and Canada excluded. Correlations for eight indicators changed substantially (see Table 2); the remaining correlations were stable.
7. *Newsweek*, 11 Feb. 1974, p. 72.
8. Joint Committee on Atomic Energy, U.S. Congress, *Environmental Effects of Providing Electric Power*, part 2, vol. 2 (Government Printing Office, Washington, D.C., 1970), p. 1809.
9. As mentioned earlier, another interpretation is that energy consumption and the economic indicators are correlated because of their association with a third variable such as "level of urbanization." It seems likely that city dwellers use more energy (per capita) than rural dwellers do, and city dwellers also probably consume more manufactured goods. We calculated the partial correlations between energy consumption and the economic indicators while controlling on urbanization. If the original correlations are to be explained as largely an effect of urbanization, then these partials must be substantially lower than the original correlations [H. Blalock, *Social Statistics* (McGraw-Hill, New York, ed. 2, 1972)]. That was not the case.

NEWS AND COMMENT

OCS Oil: Mammoth Lease Plan Encounters Heavy Opposition

The Department of the Interior's plans to embark on a vast new leasing program in the allegedly oil-rich areas of the outer continental shelf (OCS) have generated one of the biggest environment- and resource-related battles now going on within the federal government. Critics of the plan, including environmentalists, congressmen, and government officials, appear to outstrip its adherents in number, if not in influence. Many feel Interior has really taken the bit in its teeth on this one, and has made a unilateral decision that takes little account of recommendations such as those made by the Council on Environmental Quality (CEQ) in its report on the OCS.

They believe the department's intent, which is to lease 10 million acres of OCS lands in the Atlantic, the Pacific off Southern California, the Gulf of Alaska, and the Gulf of Mexico, is hasty and ill conceived. They say that the department is not prepared to handle such an accelerated program, that environmental data are insufficient, that the states are not ready to deal with the onshore impacts of offshore development, and that oil companies themselves do not have the resources to properly exploit the huge menu of riches the government wants to lay before them.

Proponents of the accelerated leasing plan emphasize that the unexplored areas of the OCS contain the most bountiful sources of untapped energy that will be available in the United States within the next 15 years, and that it can be recovered with far less environmental damage than would be caused by, say, a crash program of coal extraction in the West.

Intense new interest in OCS possibilities sprang up in 1973 when President Nixon announced that the Interior Department would step up offshore oil leasing from 1 million to 3 million acres a year. Then in January 1974 Nixon announced a new jump—as part of the kickoff for Project Independence, Interior was aiming to triple the acreage again, this time to 10 million acres, all to be sold in 1975. It is still not clear whether Interior wants to make it a yearly practice to lease 10 million acres, but since the figure is generally acknowledged to have been arbitrarily chosen, it is enough to say that the department wants to get as much acreage as possible into exploration as soon as possible. The rationale for this is simply that it is essential to increasing domestic oil supplies, reversing inflationary trends, and ameliorating the balance of payments crisis, and in sum, to combating the extortive pricing policies of oil-exporting nations.

It should be emphasized that there is no unequivocal evidence that there are large recoverable amounts of oil in any of the frontier areas. The richest deposits are thought to be in the Gulf of Alaska, which is why Interior wants to hold early lease sales there despite the fact that CEQ (*Science*, 17 May) ranked Alaska exploration as high risk environmentally. But even there, estimates of recoverable supplies vary widely.

If the 10-million-acre leasing program is carried through in 1975, however, it means that as much acreage will be leased in 1 year as has been leased by the federal government since it got into that business in 1954. Obviously, the long-term cumulative environmental effects are impossible to calculate.

While expansion of OCS drilling operations is inevitable, the question is whether such a dramatic increase is what America really needs. President Ford, who has adopted the Nixon line on energy policy, evidently thinks so. Interior Secretary and newly appointed energy sheik Rogers C. B. Morton thinks so. And so does Interior Undersecretary John C. Whitaker, the chief mastermind of the program.

Government agencies are presenting a united front in support of Administration policy, but there are signs of breaks in the ranks. One of the most visible was the recent dismissal of John Sawhill, head of the Federal

Energy Administration, who believes that forceful energy conservation measures could decrease the need for headlong exploitation of fossil fuel resources. There are also reports of considerable uneasiness within the ranks at the Interior Department. The Bureau of Land Management (BLM) and the U.S. Geological Survey (USGS), the agencies chiefly responsible for selecting, granting, and monitoring leases, are barely able to handle the leasing of 3 million acres a year. Officials there are reported to have indicated privately that they think the 10-million-acre plan is unrealistic and that they do not have the manpower or the information to handle such a program effectively.

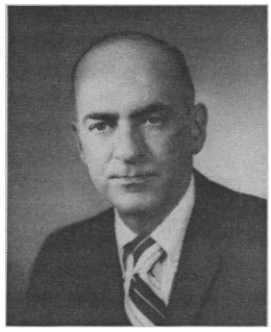
There is strong opposition to the plan, at least in its present form, in Congress, where members feel the Interior Department has failed to justify the need for such an accelerated program and are skeptical that any rationality went into the decision to peg the acreage figure at 10 million. Environmentalists, of course, have been deeply concerned, and the concern turned to outrage in October when they learned that Jared G. Carter, deputy undersecretary of Interior, had sent a memorandum to the BLM and the USGS in which he asked that a "firm leasing schedule" be laid out immediately, covering acreage not only in the well-drilled Gulf of Mexico but in the "frontier" areas of the Atlantic seaboard, the Pacific Coast, and the Gulf of Alaska. This was the first definite indication that Interior's near-term schemes involved the frontier areas. Carter says the memo merely asks for identification of "areas to study to see whether we can lease." His critics believe the memo is a clear indication that Interior has already made up its mind, and that the environmental impact statement on the 10-million-acre plan, the first draft of which started making the rounds of government agencies in late October, will be used to justify policies rather than guide their formation. The National Resources Defense Council is considering the possibility of a lawsuit alleging that Interior is not complying with the procedures required by the National Environmental Policy Act.

Accelerated leasing on the OCS involves a great number of issues, ranging from environmental uncertainties to the question of whether the public will be bilked as a result of the government selling leases cheap. Critics are convinced that the 10-million-acre plan

Carey to be AAAS Executive Officer

The new executive officer of the AAAS will be William D. Carey, who as a Bureau of the Budget (BOB) career official during the 1950's and 1960's played a leading role in managing the expanding federal R & D budget. Carey, now a vice president of Arthur D. Little, Inc., is scheduled to assume the post as AAAS top administrator on 1 January.

Carey, 57, succeeds William Bevan, who left the AAAS on 1 July and is now a professor at Duke. The process of recruiting a new executive officer began a year ago, when Bevan informed the AAAS Board of Directors of his intention to resign. In recent months the search has been conducted primarily by the three top elective officials of the AAAS, chairman Leonard M. Rieser, president Roger Revelle, and president-elect Margaret Mead.



William D. Carey

Rieser said the board is particularly pleased with the appointment because Carey has amply demonstrated that he fulfills two principal criteria set by the board. Rieser said Carey has "the ability to manage the enterprise in a time of fiscal difficulty," and "his experience would make him effective in furthering the purposes of the organization in [advancing] science and human welfare."

Asked what had primarily attracted him to the AAAS job, Carey, who has written extensively on science policy issues, said he felt that the current vacuum of initiatives provides an opportunity "to try to define more clearly where science and technology belong in the country's planning and priorities." He said he thinks there is "a potentially great role for AAAS" and feels that the Board of Directors is disposed "to search for ways to assemble the tremendous potential in the membership to focus on current issues and to participate fully in developing some strategies and some actions."

The board's appointment of Carey departs from previous practice, since earlier executive officers typically have been Ph.D. scientists with university ties. Bevan and his immediate predecessor, Dael Wolfle, were both psychologists with teaching and research experience. Carey is a 1940 graduate of Columbia and subsequently earned an M.A. in public law and government from Columbia and an M.P.A. in public administration from Harvard. His career in BOB extended from 1942 to 1969. During that period he served in a series of progressively more responsible posts mostly involving budgeting for such agencies as the Atomic Energy Commission, National Science Foundation, and National Institutes of Health. At A. D. Little, he has headed the firm's Washington office and directed its public affairs center, which deals with problems of government.

Carey has served on a number of major U.S. and international science advisory and policy bodies and is widely known in the scientific community and in government. He is currently a member of the Committee on Public Engineering Policy of the National Academy of Engineering and the Institute of Medicine of the National Academy of Sciences and is chairman of the U.S. Panel on R & D Management of the U.S.–U.S.S.R. Joint Commission on Science Policy.

Carey takes over the AAAS helm at a time of financial stringency caused by inflation and by the costs of the expansion of public interest programs. Last year a $350,000 deficit was incurred which included a large expenditure on a Mexico City meeting outside the regular budget. Board members say that the organization started the year "overextended," and the board ordered a review of all AAAS activities and a drastic program of cost cutting. Rieser says that as a result of efforts directed by *Science* editor Philip H. Abelson, who took over as acting executive officer when Bevan departed, the AAAS is now "living within [its] resources."—J.W.

has not been studied in the context of the nation's total energy strategy for the next 15 years—it is conceivable that if the Administration sought meaningful conservation measures with a fervor matching that applied by Whitaker in his pursuit of the OCS, the nation could be as close to energy self-sufficiency by 1985 as it would be under the Whitaker plan. (Under the full-steam-ahead program, Interior estimates that the OCS would be supplying 15 percent of the nation's oil needs by 1985. Oil from the Gulf of Mexico now supplies about 10 percent of the country's oil needs. One-third of the total is imported.)

Environmentalists and many members of Congress believe Interior's haste could be disastrous. First of all, they believe priorities for OCS exploration should not be set until the results are in from environmental baseline studies now being conducted by the National Oceanic and Atmospheric Administration. They also say that most coastal states are unprepared to plan for the onshore effects of offshore drilling which, with their social and economic as well as environmental aspects, are considered to be far more complex and significant than the matter of oil spills. They believe coastal states should be allowed more time to make plans, as provided for under the Coastal Zone Management Act of 1972, whose purpose is to aid states in integrated planning for economic development and environmental protection for their coastal areas and wetlands. The first planning grants were awarded only this year, and only one or two states are expected to be ready this year for second-stage grants to implement the plans. States have the power to prevent oil companies from laying pipelines within their 3-mile territorial limit, but not many are equipped to decide whether they want to participate in offshore development, much less how to plan for orderly adaptation to a coastal oil economy.

Even if the environmental picture were clearer, there remains the question of whether oil companies have the capital and equipment to buy leases and explore the tracts in a prompt and orderly fashion. Interior seems to think it is possible, but even Frank Ikard of the American Petroleum Institute thinks the department is being overly optimistic. Many companies would like to see a more gradual leasing schedule so they would have a chance to jump into the act later when they could better afford it.

Many critics say the availability of such a large quantity of undersea acreage will inevitably depress prices paid for leases, thus short-changing the U.S. Treasury. Interior insists it will not accept bids it considers too low, but it has a history of undervaluing tracts,

Ray's Shift to State Department Will

Secretary of State Henry Kissinger has been speaking in recent months about a need for upgrading science in the State Department and for making it an effective ingredient in foreign relations. The appointment of so prominent and vigorous a figure as Atomic Energy Commission chairman Dixy Lee Ray to head up the State Department's new bureau for oceans, the environment, and scientific affairs will put the Secretary's interest, and that of his senior associates, to a practical test.

According to one scientist who has spoken with Kissinger recently, the new relationship is likely to be a productive one. Kissinger is said to believe genuinely in the urgency of integrating science and technology with American foreign policy, and he is "expecting to do precisely the right things that need to be done."

So says William Nierenberg, the director of the Scripps Institution of Oceanography. A frequent adviser to the government on ocean affairs, Nierenberg may not be an entirely unbiased observer, but he is in a good position to know the Secretary's mind. In September, after months of delay, the White House picked Nierenberg to become the assistant secretary of state in charge of the new science and technology bureau. After an hour's talk with Kissinger, Nierenberg accepted the job. Then, for personal reasons, he withdrew his acceptance on 24 September.

Although he didn't know it at the time, Nierenberg's withdrawal helped the White House solve a potentially sticky political problem. The Office of Management and Budget had already decided that the new Energy Research and Development Administration (ERDA) would not be headed by the chairman of the soon-to-be-dissolved AEC. In bowing out, Nierenberg opened a perfectly respectable job for one of former President Nixon's more popular appointees and the government's best known woman executive. The White House announced Ray's appointment as Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs on 29 October (*Science*, 6 November).

Created by Congress last year, the new bureau was formed from a mélange of small and separate staffs that have dealt with such matters as population, environment, fisheries and wildlife, and general science policy. The bureau, with a staff of about 78, was regarded as a fresh start for science in the State Department—or at least it would be as soon as an assistant secretary arrived on the scene and brought it to life (*Science*, 13 September).

Nierenberg, among others, believes that the new bureau's fortunes will depend heavily on the bureaucratic skills of the new assistant secretary. "Absolutely superb relations" with the heads of the federal science and technology agencies, he says, will be an essential requirement to building systematic and consistent policy in five broad areas: oceans and natural resources; the triad of food, population, and environmental protection; energy; health; and technology transfer.

The last category is a catchall for issues centering on the controls and prices applied to American technological exports such as computers to the Soviet Union, nuclear reactors for the Middle East, or industrial techniques for Latin American nations.

The subject of technology transfer may be remote and unexciting to most Americans, but Nierenberg notes that it's an increasingly important part of Kissinger's agenda in his global travels. "It's coming up in almost every negotiation he faces."

For Dixy Lee Ray, moving from a multibillion dollar agency with 7000 employees to a bureau with 78 persons

which are later sold for far higher prices than the department has estimated. And if cheap bids are accepted, many fear that speculators will move in, then sit on their tracts until oil prices move high enough to make production outstandingly lucrative.

The Interior Department has ready answers for all these criticisms based on two premises. The first is that any delay in using domestic energy resources will contribute to inflation and economic deterioration. The second premise is that reduction of energy demand through conservation will have little or no effect on the nation's energy needs for years to come. Rapid OCS development, then, in the words of Carter, is "the only option." The critics' argument that we do not have enough information is a reason used by Interior for moving in. Environmental baseline studies will make a continuing input into leasing decisions, but we cannot afford to wait until they are complete, Carter says. And states will have time to complete their coastal zone management plans because no onshore developments will occur until oil has been found, and the minimum time between the leasing of a tract and the first oil production is 3 years. Critics argue that once oil is discovered, the pressure on states to accommodate onshore operations may become irresistible unless firm policies have been established beforehand.

Members of Congress most actively concerned with OCS development—the Commerce and Interior committees in the Senate, and the Interior subcommittee of the House Appropriations Committee—are not yet satisfied with Administration justifications which, according to a House staff member, consist largely of sweeping generalities.

Following the publication of Carter's memo, 21 senators, led by Ernest F. Hollings (D–S.C.), head of the Commerce Committee's Ocean Policy Study, wrote the President on 7 October to express their "surprise and dismay" that things seemed to be moving rather swiftly despite the fact that environmental baseline studies and coastal zone management efforts were "at a very early stage." They also requested a "factual justification" for the 10-million-acre plan. Around the same time, the Senate passed a resolution introduced by John V. Tunney, also of the Commerce Committee, echoing the same sentiments. Meanwhile the House interior subcommittee has asked Interior for a detailed justification of the 10-million-acre plan. Unless they get a good one, says a staff member, the committee will recommend that appropriations be made for leasing no more than 3 million acres in 1975. (The Administration is now preparing a request for a supplemental appropriation to cover the costs of

Test Kissinger's Interest in Science

may be something of a letdown. If it is, she hasn't indicated any disappointment with her new job and the White House hasn't indicated any with her. She is regarded as a quick learner, a competent administrator, and an effective advocate for nuclear energy, something the much-battered AEC badly needed.

But her effectiveness as an advocate aroused the enmity of environmental groups who saw Ray as accepting uncritically the nuclear industry's "line" that it wouldn't build reactors if they weren't clean and safe. Some of Ray's friends on Capitol Hill also believe her identification with nuclear technology might have been regarded as a liability for a new energy agency struggling to cultivate an image of technological neutrality.

One of Ray's achievements during her 2 years as AEC chairman was to establish for her agency a small but important new measure of independence from the domination of the congressional Joint Committee on Atomic Energy. In the long run, however, this victory may have worked to her personal disadvantage.

Long accustomed to holding the AEC on a short leash, the Joint Committee's old guard was surprised and infuriated in May of last year when Ray and two other commissioners presented the Joint Committee, as a kind of fait accompli, with a much needed reorganization of reactor safety research programs. Representative Chet Holifield (D–Calif.), one of the committee's dominant figures, was particularly angered, and his antagonism for the chairman persisted. At the end of last year, rumors circulated through the committee that Holifield had extracted an "understanding" from the White House under which he—as chairman of the all-important House Government Operations Committee—would expedite legislation to create ERDA if, among other things, the White House would not name Ray to head the new agency.

An aide to Holifield (who is retiring this term) said he doubted such an understanding had been reached. What Holifield did do was to ask 25 or 30 leading R & D managers in industry about the qualifications they considered desirable in an ERDA administrator. The answers, the aide said, supported Holifield's belief that Ray lacked the necessary experience for the job. The managers' letters were forwarded to the White House.

Ray's performance as an administrator is hard to judge from the outside. The five-member commission went about its business discreetly, but from time to time there were noises behind the curtain that suggested all was not serene. Ray was regarded as competent, and her assembly of a $10 billion energy R & D plan last year, under a difficult deadline, was considered more than creditable. But there were rifts and communication problems among the commissioners that damaged their effectiveness. As one close observer expressed it, "she sometimes acted more like the administrator of ERDA than the first among five co-equals."

Washington sophisticates have long since discarded the notion that Dixy Lee Ray, the lady biologist with the two famous dogs who lives in a mobile home, was simply a pleasant rustic from the Northwest woods. Her rise to and survival amid power in Washington was a noteworthy phenomenon in an administration otherwise notable for its colorlessness and corruption. Her continued survival, however, will depend on her diplomatic skills, both international and among fellow bureaucrats.

Nierenberg, for one, is confident that she'll succeed. Here again, though, he's not unbiased. It was Nierenberg, ironically, who recommended her to the Atomic Energy Commission two years ago.—ROBERT GILLETTE

the 10-million-acre leasing program.)

The Senate has already passed a bill authored by Henry Jackson (D–Wash.), chairman of the Interior Committee, that could put some crimps in Interior's long-term intentions, if not on the 1975 plan. Passed on 18 September by a vote of 64 to 23, the bill (S. 3221)—an amendment to the Outer Continental Shelf Lands Act of 1953—would require the Secretary of the Interior to concoct a 10-year leasing plan. The plan, which would have to be reviewed and revised annually, would, among other things, have to indicate the size, timing, and location of proposed leasing activity over the decade. All leasing after the beginning of 1978 would have to conform to the plan. The bill calls for a variety of additional mapping and surveying programs by the government and for establishing a liability fund for oil spills and a "coastal states fund" to reimburse states that are "impacted" economically and environmentally by offshore development. Government officials testified against the bill, saying it duplicated many actions already in progress, that annual review of the plan was a nuisance, and that the coastal fund would siphon off badly needed oil revenues from the U.S. Treasury. Environmentalists objected on other grounds—that the bill did not regulate leasing until 1978 and that the publicized surveys would be useless because they would not be allowed to contain proprietary data purchased by the government from industry.

More immediately related to the plan is the hefty draft environmental impact statement on it that is now making the rounds of government agencies. Comments on the statement are yet to be forthcoming, but Bruce Blanchard of

Briefing

Dietary Morality

Children told to clean their plates for the sake of the starving millions in Asia may be comforted to hear adults confronted with an equivalent version of the confusing reproof. Agricultural expert Lester R. Brown wants Americans to eschew beef, switch to a semivegetarian diet, and quit using fertilizer on their cemeteries and golf courses.

Such actions to help global food needs should be part of the U.S. proposals at this month's World Food Conference, Brown believes. For Americans to simplify their diet and reduce waste would free world food resources and hold prices lower for the poor and hungry in other countries, Brown argues in a new book.*

Brown's nostrum does not find favor with the Economic Research Service (ERS) of the Department of Agriculture. For citizens of rich countries to eat less, a new ERS world food study contends, would not transfer food to the malnourished; even if such abnegation lowered prices, it would also reduce farmers' incentive to produce. (The ERS study was summarized in the Washington *Post* but has not yet been officially released.)

Whereas Brown calls for "a dramatic increase" in support for increasing poor countries' food production, the ERS predicts a surplus of supply over demand for the next decade.

Demand, in the ERS's vocabulary, refers to ability to pay, not hunger, and Brown is quick to point out that poor countries may be priced out of the world food market. While this may be so, the ERS's forecasts at least imply that massive outbreaks of famine are not round the corner. World food supply does seem perilous—and Brown is expert and articulate in describing all the things that have gone and could go wrong—but the ERS, which has been trotting out essentially the same forecast for 10 years or more, has a long record of being right.—N.W.

* *By Bread Alone*, Lester R. Brown with Erik P. Eckholm. Praeger, New York, 1974. $3.95.

Plagiary and Piracy

Should scientists' applications for grants be secret? The Department of Health, Education, and Welfare (HEW) says they should be, on the grounds that like a trade secret, they contain information of potential use to a competitor, and trade secrets are exempt from disclosure under the Freedom of Information Act.

This position recently suffered a crushing blow in the District of Columbia Court of Appeals. "The government has been at some pains to argue that biomedical researchers are really a mean-spirited lot who pursue self-interest as ruthlessly as the Barbary pirates did in their own chosen field," the court observed.

"Whether this is the sad truth," the opinion continued, "or whether, as appellee suggests, 'secrecy is antithetical to the philosophical values of science,' is not, however, an issue in this case. . . . It is clear enough that a noncommercial scientist's research design is not literally a trade secret or item of commercial information, for it defies common sense to pretend that the scientists are engaged in trade or commerce."

The ruling, which HEW may well decide to appeal to the U.S. Supreme Court, rips away the veil of secrecy from the peer review system but leaves it with at least a fig leaf. The suit in question, brought by the Children's Defense Fund against the National Institute of Mental Health, refers only to 11 NIMH applications that have already been funded. Though the court held that the applications are not trade secrets—one of the nine exemptions in the Freedom of Information Act—it also ruled that the "pink sheets" (the summary of the peer review group's views and recommendations) may be withheld from public inspection under another of the nine exemptions which allows "inter- or intraagency memoranda" to remain secret.

It is not at all clear how this two-edged ruling will affect the activities of study sections. Hitherto these meetings have been closed by invoking the trade secrets exemption of the act. Since this contention would now seem to be invalid, HEW may have to grasp at the fig leaf left it by the court and argue that since the pink sheets are exempt, the discussions they embody should also be protected from the public gaze.

The Children's Defense Fund, a part of the Washington Research Project, Inc., sought access to the applications in order to investigate the ethics of the experiments in question, most of them to do with the treatment of hyperactive children. William C. Smith, of the Fund, believes that "it is essential for researchers to be held accountable, and the research process has to be something other than the closed society which it is now."—N.W.

the Interior Department's Office of Environmental Project Review explains that it is not designed to justify a leasing schedule. Rather it is a "macro," or "programmatic," impact statement whose purpose is to justify an accelerated leasing program covering the frontier areas. This is part of Interior's "two-tiered" impact statement system, in which the second stage consists of statements on particular areas designated for lease sales. According to Blanchard, though, different people at Interior have differing concepts about the purpose of the programmatic statement. The impact people in the department do not believe it is adequate as a justification for a leasing schedule—the timing, locations, and scope of areas to be offered. Such a schedule, they say, would require far more detailed region-by-region impact statements whose formulation requires considerably more data—including results of the ongoing baseline environmental studies—than they now have at hand. The top people at Interior, however, apparently believe that the programmatic statement, assuming it is approved in its final form, will be sufficient to move into implementation of the leasing program. This issue will probably gain more visibility in the future, and environmental groups can be counted on to latch onto it as a means of delaying the program.

The potential of energy conservation is central to the whole OCS leasing debate. The basic philosophy of the Nixon-Ford Administration is that energy supply must be increased to meet demand. Carter proclaims himself to be as dedicated as anyone to conservation, but he takes a cynical view. The American public is not about to slow down consumption voluntarily, he says, and Congress is not about to pass legislative measures that would compel industries to adopt more energy-efficient processes or consumers to drive under 50 miles an hour. Indeed, he says, "it's not our job to force the country to change consumption patterns," and it would be downright "irresponsible" for Interior to hold back on OCS leasing "to force people to use less oil."

There is a growing body of opinion that reducing energy demand is not only inevitable in the long run, but that it can be accomplished just as fast as oil can be obtained from frontier OCS areas. Environmental Protection Agency head Russell Train and CEQ chairman Russell Peterson have contended that, with proper conservation measures, the annual growth rate in energy consumption, which now hovers around 4 percent, could be reduced to around 2 percent by 1985. The Ford Foundation's Energy Policy Project (*Science*, 1 November) agrees. The Ford project's conclusions (which Carter calls "irresponsible and wrong") are that conservation, combined with more efficient recovery methods in existing oil wells and coal mines, would make increased reliance on imports unnecessary. They say there would be no need to lease more than 1.5 million acres per year on the OCS for the next decade, and there would be no need to plunge into the frontier areas until 1985.

The 10-million-acre leasing program (dubbed "drain America first" by Senator Hollings) may have been a quick public relations ploy by President Nixon to placate the seething hordes at the gas lines last winter. It also reflects the prevailing but disputed theory that a healthy economy is based on continuous growth, and considerable optimism that new energy sources—nuclear power and solar and geothermal energy—will be sufficiently advanced to take over by the time fossil fuels are exhausted.

Most observers *Science* talked to think it will be impossible for Interior to lease 10 million acres in 1975—even if all the environmental hurdles are jumped, they say, the department is simply not equipped to administer such a large-scale plan. But the plan has served to intensify interest in controversies over oil resource development that have been going on a long time, many of which will not be resolved until the nation commits itself to a strategy that takes into account the world's dwindling resources.

—CONSTANCE HOLDEN

NIH: Robert Stone Is in Trouble with HEW

The past 8 years have been hard on biomedical research and it is common to hear scientists say that research in the United States is in "deep trouble." Some of that trouble may be as much psychological as anything else, the research community having adopted a slightly paranoid attitude about everyone on the outside—the public, the Congress, the Administration. But there is no denying the fact that in recent years several things have happened that have had a real impact on the way researchers see themselves and the way research is conducted. Those things have to do with money and leadership and the mission of the National Institutes of Health (NIH).

In 1968, James A. Shannon gave up the directorship of NIH and, when he did, the biomedical community lost its acknowledged, if somewhat paternalistic, leader. Robert Q. Marston was Shannon's successor in title only. And Robert S. Stone, NIH director for the past 18 months, still lives under the old man's shadow. Stone himself has joked that when people are looking for him, he is sure they are sometimes told he can be found "in Dr. Shannon's office."

It is not a good time to be director of NIH. And, to make matters worse, Stone today is in very real danger of losing his job. It is no secret that he is not getting along well with the brass in the Department of Health, Education, and Welfare (HEW). His relations with assistant secretary for health Charles C. Edwards are strained; so are his relations with Edwards' deputy, former National Heart and Lung Institute Director Theodore M. Cooper, the man who surprised everyone by taking the HEW job after being passed over for the post of NIH director.

Genuine differences of opinion about how NIH, and all biomedical research, fits into the total national health scene are part of the problem. Personality clashes and management style exacerbate it. As one observer close to the