the International Association of Nautical Archaeology in evaluating requests for the fund's help. On an international scale the monetary requirements of the fund would be insubstantial. In view of the nature of the operations concerned it may be presumed that the fund's contributions could, to a large degree, if not entirely, be offset by income from newspaper, book, film, and television coverage of the work in progress.

The convention would enter into force on the deposit of the tenth instrument of ratification. The Director-General of Unesco or two-thirds of the parties to the convention should be empowered to convene a conference of all members of Unesco at any time after the passing of 5 years from the entry into force of the convention, to consider its revision in the light of technological, scientific, and other developments.

The present century has witnessed the rapid progress of technology which has far outstripped man's ability to control wisely the machines he has created. The Law of the Sea Conference offers a unique opportunity to preserve the artifacts still hidden in the deep sea. It is hoped that the proposed principles are acceptable to all nations and will offer the means of saving the cultural heritage of mankind in the oceans.

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NEWS AND COMMENT

President Ford: Main Street to Pennsylvania Avenue

When President Nixon nominated Gerald R. Ford for Vice President last fall, the nomination was generally acclaimed by Ford's colleagues in the Congress. But not all concurred in the nomination. For instance, Representative Michael J. Harrington (D–Mass.), though he shared the widely held view that Ford was an honest and decent man, said that Ford had not demonstrated the kind of leadership called for in one who might have to assume the Presidency at a time when the nation had just gone through a decade of "traumatic, convulsive, and divisive" events. Rampant inflation, the energy crisis, public mistrust of government, and unresolved racial conflicts at home and dangerous hostilities abroad—these represented a formidable array of problems which, in Harrington's judgment, required the attention of a leader of proven and extraordinary gifts.

The question Harrington and a few others raised about Ford has been temporarily lost in the enormous relief felt at Richard Nixon's departure from the White House. Ford's reputation for openness and fair dealing clearly has made him the man for this season. Whether he will effectively meet the challenges of the Presidency in all seasons remains anyone's guess. His choice of Nelson Rockefeller for Vice President suggests that, for better or worse, he may be tilting toward the eastern Republican establishment.

Ford has always stood for fiscal restraint in the adoption and implementation of domestic programs—but for generous treatment of military programs. During his first week as President, he was behaving true to character. In his address to Congress, Ford said that he would seek a balanced budget next year but that this was no time for "unwarranted cuts in national defense." Later, he issued a statement deploring the $5.1-billion reduction recommended by a Senate appropriations subcommittee in the $87-billion military budget proposed for the current fiscal year.

An important clue as to how President Ford will approach environmental issues was contained in a speech prepared by his staff and delivered by one of his closest advisers, Secretary of the Interior Rogers C. B. Morton, at Expo '74 in Spokane on 15 August. In essence, it said that, given human creativity and a "limitless" scientific frontier, economic expansion can be continued without sacrifice of goals of achieving a better environment. It was conceded that there would be some "stretching out of the timetable" of pollution abatement and some "trade-offs" between short-term goals of economic growth and long-range goals of environmental quality. Arguments for zero or slow growth were dismissed as unrealistic and contrary to human nature.

This display of a pro-growth attitude could not have surprised the several scientists in the Grand Rapids, Michigan, area who, during Ford's last year and a half in Congress, served on a science advisory committee that met with him regularly. The environmentalists on the committee found that, while Ford was willing to hear them out, he would not be shaken from his view that their priorities would have to yield to economic growth.

Although some say it is gradually becoming more liberal, Michigan's Fifth Congressional District, which Ford represented for 25 years, has more or less typified conservative midwestern Republicanism. Grand Rapids (population, 198,000) has a diversified industry and a stable economy. The Fifth District population is about 95 percent white, and minority politics have not weighed heavily in district affairs.

After first winning the Fifth District seat in 1948, Ford became well entrenched by faithfully reflecting the district's conservatism and establishing an exceptionally good record of serving—and flattering—his constituents. As for constituent service, he even inaugurated the practice of touring the district in an office trailer each summer to allow constituents to reach him more easily. In his Washington office a Polaroid camera was kept ready so that every visitor could have his picture taken with the congressman.

Ford came to be known by his colleagues, and by close observers of Congress, as an effective and hard-working member of the Defense appropriations subcommittee. Although in no sense an innovator, he performed well within the system as he found it. In 1961, the American Political Science Association conferred on Ford its Congressional Distinguished Service Award.

After winning the chairmanship of the House Republican Conference in

1963, Ford was one of only two congressmen who, after the Republican debacle in the 1964 election, were regarded by their colleagues as potentially serious candidates to take over the minority leadership. The other was Representative Melvin Laird of Wisconsin, a key member of the Appropriations Committee and, like Ford, a leader in House Republican councils. Representative Charles A. Halleck of Indiana, the incumbent minority leader, had his following chiefly among the older, more conservative Republicans in the House, which was precisely the element that had suffered the heaviest losses in the fall election.

Robert L. Peabody, a professor of political science at the Johns Hopkins University who did an exhaustive study of the leadership contest, has observed:

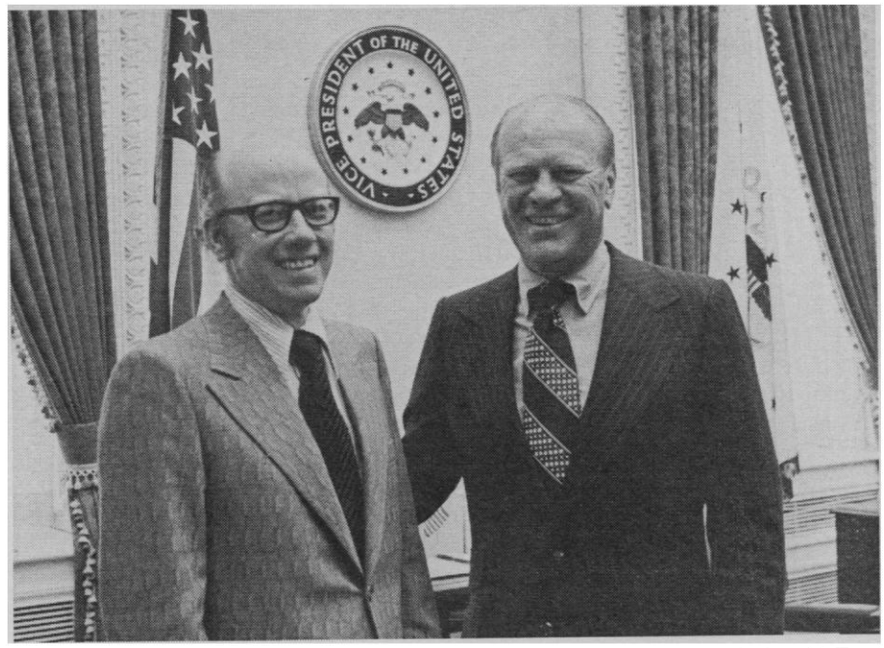
> The forthright and likeable Ford was respected by his colleagues [although] some of them felt he lacked initiative and had failed to exploit the potential of the Republican Conference. . . .
>
> Laird, on the other hand, was considered both more vigorous as a leader and more controversial as a candidate [in part because of his role as chairman of the platform committee at the 1964 Republican National Convention and his reputation as a maneuverer].

As things turned out, Laird gave unstinting support to Ford in the successful effort to overthrow Halleck, and he replaced Ford as chairman of the Republican Conference.

Ford's style of leadership was generally described as calm, forbearing, and pragmatic. As S. C. McElroy, of the Ralph Nader Congress Project, has said, "Ford listens to all viewpoints and has a reputation for evenhandedness. He tends to mediate impartially and has stayed neutral in ideological disputes and avoided recriminations against those who opposed him."

In 1972, Ford, consistent with his general tendency to engage in wide consultations, eagerly welcomed the offer of a few scientists in his district to form a committee to advise him on science policy issues. At the American Physical Society meeting in January 1972, Vernon Ehlers, a physics professor at Calvin College in Grand Rapids, had heard Representative Mike McCormack (D–Wash.), a physicist himself, suggest that APS members should seek out congressmen and advise them on science policy issues.

Acting on this suggestion, Ehlers wrote Ford to suggest that an advisory committee be established. Within 3 days he had received an enthusiastically affirmative reply from the congressman.



Vernon Ehlers, a physicist at Calvin College in Grand Rapids, shown with Gerald Ford last spring in the Vice President's office. Ehlers set up a committee that advised Ford on science policy during his last year in Congress.

In fact, the response came so quickly that Ehlers wondered if it merely represented yet another aspect of Ford's extraordinary program of constituent service rather than a genuine interest on his part in receiving science policy advice.

But Ford, who met with the Ehlers committee some eight times before he was nominated as Vice President in October of 1973, quickly convinced the five members of that group that he was indeed interested in their views. At the outset, Ford made it clear that he did not care whether all of the committee members were loyal Republicans, and, as it turned out, the committee functioned in a strictly nonpartisan manner. There were two physicists, two biologists, and one engineer on the committee, all from local colleges except the engineer (who worked for a local aerospace company).

The meetings took place on Saturday mornings when Ford was home on visits to Grand Rapids, and lasted from 30 minutes to an hour and a half each. They were conducted informally, with the members of the committee offering opinions individually without trying to develop agreed-upon positions.

A few of the meetings were initiated by Ford himself. In one instance, he solicited the committee's advice on budgetary priorities for science and technology. In another, he sought its reaction to the White House decision abolishing the President's Science Advisory Committee and designating the head of the National Science Foundation as science adviser. (In a statement issued in January 1973, Ford said—contrary to the opinion of many scientists—that the President's reorganization plan "seems to make a good deal of sense.")

In addition to the two subjects just mentioned, the topics discussed by Ford and the advisory committee included matters such as federal support of basic research, problems associated with nuclear power and the plutonium breeder reactor, and the regulation of strip mining. In general, Ford did not commit himself to particular points of view, but simply asked questions and listened. The committee members found Ford surprisingly well prepared for the meetings and quick to get at the essence of a problem. "He is very astute," Ehlers told *Science*. "He displayed a good grasp of the subtleties of scientific issues." (Although Lyndon Johnson used to privately make light of Ford's abilities—saying he played too much football without a helmet—Ford does not lack intellectual credentials. He was graduated from the Yale Law School in the top third of his class.)

It seems that, while he adopted a noncommital stance on most of the matters he discussed with the committee, Ford did reveal strong opinions of his own on environmental issues. "He was sympathetic to environmental attitudes," Ehlers says, "but I think he had trouble reconciling them with his tradi-

tional view that growth is good." Both Ehlers and one of the biologists on the committee have been on the board of the West Michigan Environmental Action Council.

In connection with the proceedings leading to Ford's confirmation as Vice President, the Congressional Research Service (CRS) of the Library of Congress prepared an analysis of his legislative philosophy and voting record. Some of its findings are of particular interest to the scientific community. For instance, the CRS report said that Ford's recorded votes through the years 1949 to 1973 "reveal a consistent pattern of support for various aspects of higher education, with especially strong support for student aid proposals . . ." Also, his record was one of support for the National Institutes of Health research and training programs.

Ford has been a supporter of big technology projects, such as the supersonic transport and the space shuttle. As for military R & D, Ford has actively supported controversial projects such as the antiballistic missile system, the B-1 strategic bomber, and the Navy's nuclear aircraft carrier program.

Whatever his current reservations about the environmental movement, Ford has generally supported legislation for the control of air and water pollution. Furthermore, as shown by past speeches, Ford has looked with favor on the establishment of the Council on Environmental Quality and the Environmental Protection Agency. He also appears to be committed to the concept of creating a new department of energy and natural resources.

At this point, the common judgment of Ford as having been a conscientious but conventional and quite cautious legislator and minority leader appears to be valid. The future will demand of him greater political creativity and independence than has been required of him in the past. Freed from the political constraints of representing only a conservative midwestern Republican congressional district, Ford now has the chance—and the duty—to show that he is more than a "good listener."—LUTHER J. CARTER

Fermi National Accelerator Lab: Progress on a Grand Design

On clear nights the lighted double tower of the central high rise at the Fermi National Accelerator Laboratory dominates the soybean and corn fields of the Illinois prairie west of Chicago for miles around. The new landmark is the central laboratory building for the largest proton synchrotron in the world, and, because the big machine was built at a time of declining faith in federal science, it can be regarded not only as a scientific but as a political wonder.

The laboratory, on 6800 acres near the town of Batavia, was formally dedicated in May, less then 6 years after the first ceremonial spadeful of dirt was turned. The $250 million job was done within the time schedule and budget, no small achievement in an era when overruns are seemingly automatic on major projects. An accelerator is not really a big machine, however, but rather a vast array of systems and subsystems. It may take years of fine tuning and even extensive modifications to bring an accelerator up to its potential. And certainly the new accelerator at Batavia has suffered through its own awkward age. From the beginning, the aim has been to build an accelerator with a beam of the highest possible energy and intensity for the money available. The design of the machine was of necessity adventurous, and critics blamed some of the bolder innovations for a time of troubles—particularly a period in 1970 and 1971—when the frustrations were proportional to the scale of the machine. The defects were ultimately mastered and, especially during the last half year, the performance and reliability of the accelerator have risen rapidly; it has begun to produce, in the parlance of the discipline, "good physics" (*Science*, 14 Dec. 1973).

The ultimate verdict on the new accelerator, the inevitable comparisons with work being done at CERN (European Organization for Nuclear Research), Serpukhov, and SLAC (the Stanford Linear Accelerator Center has the second-largest machine in the United States) will take time, probably several years. This article, and another to follow, will not attempt an assessment of the state of the art at the new accelerator, but rather, so to speak, will report on the state of the artists and seek to convey some sense of how the lab is developing as an institution.

If an institution is the lengthened shadow of a man, as Emerson said, then the man in the case of the Fermi laboratory is its director, Robert R. Wilson. Wilson was picked well before ground was broken by Universities Research Association, Inc. (URA), the consortium of research universities which operates the lab under contract with the Atomic Energy Commission (AEC). Wilson has taken the project through the design and construction stages, nursed it through the growing pains, and now presides over an operational facility.

Wilson, now 61, belongs to the generation of physicists present at the creation of American high energy physics at the Radiation Lab at Berkeley in the 1930's. He was a charter member of the influential club of physicists who knew each other at Los Alamos during World War II. After the war, Wilson went to Cornell and took the lead in building and improving a series of high energy machines that were looked upon by his peers as combining technical elegance with economy.

In the late 1960's, when negotiations over the next giant step in accelerator building broke down, it was Wilson to whom the URA and AEC turned. A design team from Berkeley had been heirs presumptive to the next accelerator project, but dropped out when the AEC reduced the allotted funds to build the machine, and Illinois rather than the West Coast was selected as a site.

At Batavia, Wilson has turned out to be a good deal more than a member of the high energy physics establishment with a talent for accelerator design. His influence at Batavia encompasses everything from architecture and landscaping to management style and general atmosphere.

Although concern for the environ-