of phosphates. Likewise, there are no controls over disposal of wastes from ships, except for prohibitions on the dumping of oil into the lake. Shipping tonnage has nearly doubled on Erie in the last 10 years. Agricultural chemicals have been ignored because it is thought that agricultural runoff is largely uncontrollable.

Even with the $1.2-billion program that is supposed to clean up Erie's biological pollution, the largest cities on the lake will continue to dump inadequately processed sewage with high phosphate concentrations into the lake during periods of heavy rain. Both Detroit and Cleveland have combined sanitary and storm sewers that carry untreated waste effluents into the lake along with storm runoff. In Cleveland, two of the overflow storm sewers enter the lake at bathing beaches.

At the moment, most of the talk about the eutrophication around Erie appears to be nothing more than a lot of warm air that is being used to sail incriminating charges back and forth across the lake. In view of the funereal pace at which the problem is being studied, Erie may have passed into its death throes before the doctors are even sure of the disease—let alone the cure.—KATHLEEN SPERRY

Air Quality Act of 1967: A Step Forward, But Don't Expect Immediate Improvement of Your Air

"The Air Quality Act of 1967 . . . serves notice that no one has the right to use the atmosphere as a garbage dump, and that there will be no haven for polluters anywhere in the country."—Senate report on the Air Quality Act.

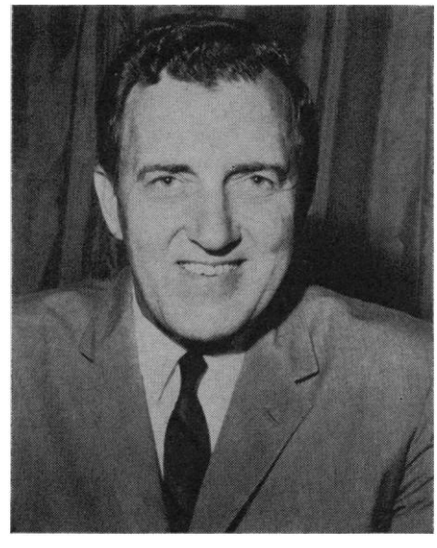
Don't hold your breath, hoping that the polluted air around you will soon turn fresh, even after you read the hard-hitting rhetoric quoted above.

Although many who are concerned about air pollution feel satisfied that Congress is passing a significant piece of control legislation this year, there is also some fear that additional years may pass before widespread enforcement action will be conducted under the provisions of the bill.

As of this writing, the Air Quality Act of 1967 (S. 780) had almost cleared its way through Congress. On 3 October, the bill was reported with little dissent from the House Committee on Interstate and Foreign Commerce; committee members expect House passage at any moment. The bill passed the Senate by an 88–0 tally on 18 July. It is reasonable to expect that the bill will become law before the end of this year.

When the Air Quality Act passed the Senate, Senators engaged in a good deal of self-congratulation for passing a stringent air-pollution abatement measure. This somewhat jubilant mood does not characterize all those concerned with air pollution in Washington. Three blocks below Capitol Hill, a murky pall seems to hang over the air-pollution division of the Public Health Service. PHS officials seem to be bothered by at least two features of the bill as shaped by Congress: first, the Administration's request for the setting of national emission standards for industrial polluters has been eliminated; second, in place of the national standards, the Congress has established complicated provisions for the setting of state standards in air-pollution areas designated by the Secretary of the Department of Health, Education and Welfare (HEW). Testifying before the House Commerce Committee in August, HEW Secretary John W. Gardner said that the bill, as changed by Congress, "could result in a slowdown in control efforts for at least 2 and perhaps more years."

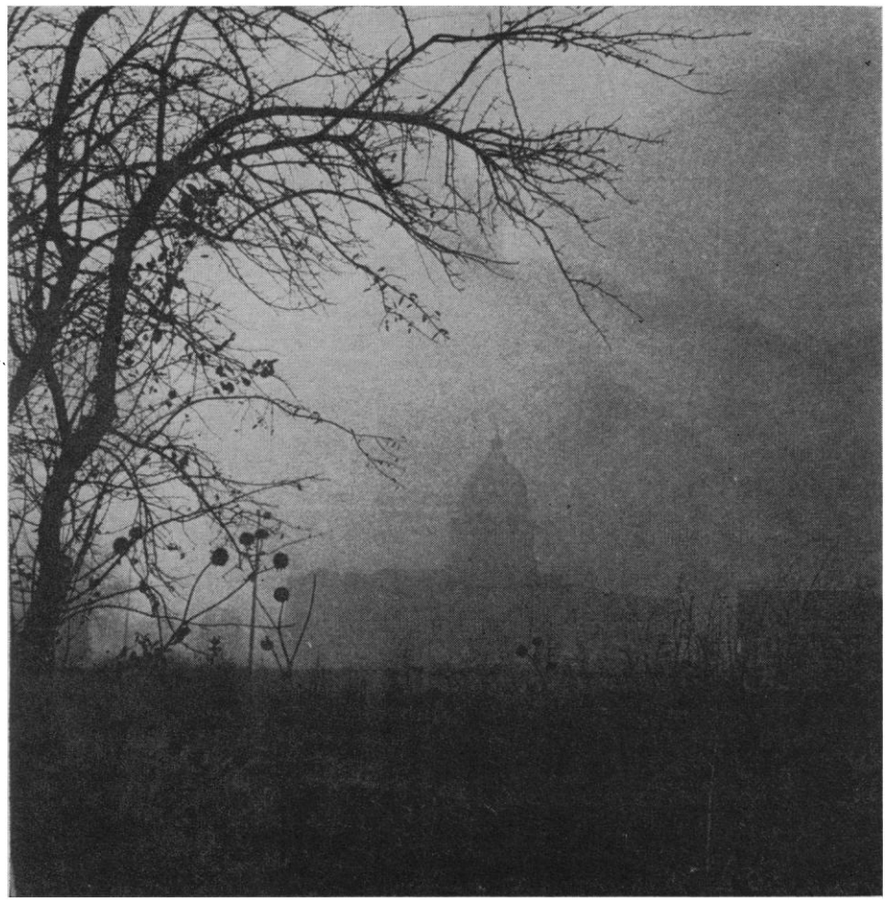
The course of the Air Quality Act this year illustrates a crucial political fact about Congress: the approval of Senator Edward S. Muskie (D–Maine) is almost essential for any legislation on pollution. Muskie does not hold this power because he throws his weight and seniority around. As a matter of fact, he is only completing his 9th year in the Senate and is not yet a committee chairman. He does, however, head the Senate Public Works Subcommittee on Air and Water Pollution, a position which gives him a key institutional role in dealing with this subject in the Senate.



Edmund S. Muskie (D–Maine), chairman of the Subcommittee on Air and Water Pollution of the Senate Public Works Committee.

More important than this subcommittee chairmanship are Muskie's personal characteristics. He is truly concerned about pollution and does his homework on the details of the legislation. He is intelligent, personable, and objective enough so that his colleagues defer to his judgment on this subject. (Muskie is the Senator most frequently mentioned as a possible successor to Majority Leader Mike Mansfield, if Mansfield decides to resign from his leadership post.) It is obvious that no congressman swings the weight that Muskie does on pollution matters. His influence even carries over to the House of Representatives, partly because few Representatives seem to be as concerned about air pollution as Muskie is. This influence on the House can be seen by the fact that the House Commerce Committee did not hold hearings on the Air Quality Act until the Senate had already passed the bill; the committee reported out basically the same bill which the Senate had passed, except for cutting the money for research.

Considering Muskie's well-known influence on pollution legislation, it is surprising that the White House did not confer with him before it sent the Air Quality Act to Congress. Since Muskie had expressed his opposition last December to national emission standards for nonmoving sources, perhaps the White House figured that it was impossible to convince him. But it is reasonable to expect that the White House should have tried, for



Air pollution obscures the Capitol of Utah, which is located in Salt Lake City.

chances of including such standards in the bill were nil without Muskie's backing. One concerned Administration official deplored the secretive White House refusal to consult with the proper congressional leaders before sending the bill to Congress. He faulted the White House for being concerned more with "hoopla and headlines" than with substantial legislative achievement.

After the White House sent the bill to Congress, Muskie and other members of the Public Works Committee began rewriting the legislation to suit their perception of the pollution problem. In hearings early this year, the Senators heard from a variety of witnesses. Those representing industries such as coal, steel, chemicals, and electrical power expressed their opposition to national emission standards, a viewpoint with which many of the Senators were sympathetic. Several members of the Senate Public Works Committee, including Chairman Jennings Randolph (D–W.Va.), represent major coal-producing states. Although many members of the Public Works Committee have a real interest in air-pollution control, it is safe to say that the viewpoints of various industries, including the coal industry, will not be ignored. (In the House, the authorizing committee for legislation on air pollution is headed by Randolph's fellow West Virginian—Harley O. Staggers.) In support of its measure, the Administration argued that, without national standards, polluting industries could move to escape stringent controls in one locality.

Muskie and his supporters opposed national emission standards for several reasons. They argued that the standards would have to be so low to meet varying conditions that they would not be effective. They said that it was inappropriate to apply the same standards to industries in rural smog-free areas as to those in heavily polluted urban locations. They argued that air pollution was basically a regional problem, rather than a national one, with regions having distinctive air-pollution problems of their own. By placing the emphasis on regional standards for air-pollution control, the Congress is implementing the same philosophy which guided the water-pollution legislation of 1965.

The Senate bill requires HEW to establish and publish criteria of air quality which describe the effect on health and welfare of contaminants under varying atmospheric conditions and also to publish information on technological control. The Secretary of HEW is to designate "air quality control regions" wherever he determines it necessary to preserve the public health and welfare. Guided by the federal criteria which have been established, the state or states affected must then set the standards for air quality in the control region. In the absence of action by the affected states, the HEW Secretary has the power to set standards for such regions, to enforce such standards, and to establish interstate air-quality planning commissions. In shaping the law in this manner, the Congress has reemphasized its desire to place primary responsibility for air-pollution standards and enforcement on state and local governments; the bill does not concern itself specifically with the abatement of individual sources of pollution. The federal government does, however, retain the powers it possessed under the Clean Air Act of 1963, as amended, which the 1967 bill expands.

One power given to the Administration under the Air Quality Act is the authority for the HEW Secretary to ask for an immediate court injunction to abate pollution which presents "an imminent and substantial endangerment to the health of persons anywhere in the country." An example of a time when such power might be used occurred last November when severe air pollution blanketed the New York City area. Chairman Randolph called this emergency authority the most significant enlargement of existing powers. This increased authority was not requested by the Administration.

The Senate also expanded the Administration's request by providing a 3-year $375 million research and development program to advance technology for controlling pollution from fuels and vehicles. This authorization of research money was cut by the House Commerce Committee, however. Altogether, the Senate authorized $700 million for a 3-year air-pollution program, $180 million more than the Administration said it needed to administer the Air Quality Act. The House Commerce Committee however, authorized only $428.3 million for the program, considerably less than the Administration said it needed.

Whatever one thinks of the merits and strength of the Air Quality Act of 1967, it is apparent that the nation is moving toward setting standards to define the acceptable limit of pollutants in the air. In the past, enforcement efforts of the air-pollution division of the Public Health Service have been directed more toward individual polluters and individual situations. The Air Quality Act of 1967 will require a much more systematic approach, both by the Public Health Service and by the various state and regional officials.

Although Administration officials praise the Air Quality Act of 1967 as a major step forward, there is worry behind the scenes about the effectiveness of abatement programs in the next few years. The new regulations are complex and time-consuming, and there is some doubt about the willingness of the authorities in many states to move on setting pollution standards. Meanwhile, the nation's air pollution is growing worse. In his House testimony last August, Secretary Gardner said, "It is now clear that the problem will not yield to anything less than a full-scale concerted attack by both the private and the public sectors."

The widespread acclaim given to the Air Quality Act of 1967 proves one thing: there are few federal politicians who believe that they can afford to oppose control of air pollution. However, the willingness to learn the details of these complicated pollution problems and to battle for substantial new federal powers for abatement are quite different matters. This year, neither the White House nor the Congress as a whole showed itself willing to devote anything like a significant part of its time and resources to working for a highly stringent air-pollution control measure. The nation is acquiring the technological capacity to abate its air pollution; so far, it has not felt the problem urgent enough to mount a full-scale effort to do so.—BRYCE NELSON

Money for NSF: The Odyssey of a Research Agency's Budget

The following is the political odyssey of a science budget. It is worth following in some detail—from the National Science Foundation, to the White House, to Congress, to Cambridge, Massachusetts, and back to Congress—for the ups and downs of this budget tell a good deal about the contemporary politics of science.

In the annual budget proposals that the President sent to Congress last January, NSF was listed for $526 million—an increase of $46 million over the then-current budget. Why was the figure set at $526 million? The answer lies in the administration's response to congressional practice and preference, rather than in any carefully formulated research policy or master plan. Those who run NSF felt they could profitably spend a good deal more, especially for project research, institutional development, and laboratory equipment. But the congressional committees that handle NSF funds have never accepted the poor-mouth talk that witnesses from the scientific community frequently present. Thus, in 1963, when President Kennedy's science advisers persuaded him to attempt to jump the NSF budget from $322 million to $589 million, Congress balked, and NSF emerged with no more than a $31-million increase. Since then, NSF, with the firm guidance of the Bureau of the Budget, has framed its growth plans in the 10-percent range, and this practice, of course, has been reinforced by the general financial restrictions emanating from the Vietnam war. So, it was $526 million that the President sought for NSF in the budget for fiscal 1968.

In mid-March the budget came up for consideration before the 11-member House Appropriations subcommittee on Independent Offices and Department of Housing and Urban Development, chaired by Joe L. Evins (D–Tenn.). Traditionally, this subcommittee has been a crucial checkpoint in NSF's budgetary affairs, for the full Appropriations Committee rarely dissents from the findings of its subcommittees, and the full House almost invariably goes along with the Appropriations Committee. Added to this is the fact that the Senate generally votes out a bit more money than the House does, which, in effect, means that the House subcommittee sets the minimum for the budget.

NSF was present in full force, with Director Leland J. Haworth accompanied by 26 staff members, plus Philip Handler, chairman of the National Science Board, and three other board members. Since Evins's subcommittee handles the budgets of 21 federal agencies (for a total of about $15 billion), including NASA, the Veterans Administration, and the Department of Housing and Urban Development, it might be thought that NSF would not figure large in its considerations. But the House takes seriously its constitutional mandate to originate money bills, and the appropriations subcommittees, which are the chief instruments for fulfilling this mandate, are, on the whole, the most industrious of congressional committees. The NSF hearing went on for 2 days, and the testimony that resulted, along with some prepared papers, added up to a printed record that covers 298 pages. By and large, the proceedings were harmonious. And now and then there even were moments when the members' seeming enthusiasm for science in general and NSF in particular somewhat overwhelmed the NSF representatives.

At one point Representative Louis C. Wyman (R–N.H.) said to Handler, "Well, Doctor, would it be fair, or reasonably accurate . . . if you were looking for a description of the National Science Foundation's ultimate role, it would be the CIA of intellectual progress in America?"

Replied Handler: "Can't we just be the National Science Foundation?"

"I didn't intend that facetiously," Wyman said. "You are the catalytic agency in which you try to bring together, and help and assist the best brains and the best qualified young people to have the opportunity through the money you have made available to you to produce the best good, and learning about the common cause and