

AAAS (I): Facing the Questions of What It Should Be and Do

The American Association for the Advancement of Science (AAAS) is approaching its 125th birthday in 1973 with no real consensus as to just what the association is. Its more exuberant leaders have sometimes described it as a "mighty organization" whose mission could be no less than providing "a new moral leadership for mankind." Its more vociferous detractors, on the other hand, tend to characterize it as a narrow, even "pernicious," self-interest group which is out to further the welfare of scientists with little regard for the larger interest of mankind. But to the vast majority of the AAAS's 133,000 members, the organization is neither noble nor ignoble, and it is certainly not mighty. For most members, the AAAS is an empty shell—little more than a magazine subscription and a peripatetic annual meeting which periodically ventures close enough to an individual's home to permit easy attendance. "AAAS membership doesn't mean a lot," says Alan McGowan, a young scientist who heads the AAAS Youth Council. "You pay your money and you get your magazine. Big deal."

Just what the AAAS *should* be and *should* do has become a matter of considerable debate and speculation over the past year or so. The debate has been fueled by a feeling that the AAAS currently stands at a potentially important crossroads in its institutional development. The organization gained a new executive officer last year when William Bevan, Jr., then 48, former provost at Johns Hopkins University, succeeded Dael Wolfle, then 64, who had been the association's adroit executive officer and power behind the scenes for 16½ years. The association has been given an incredibly sweeping mandate, approved by the board of directors and the Council in 1969, which calls for more intense involvement in public affairs and for a tenfold boost in membership by 1980 (although where an additional million or so members are going to be found has yet to be revealed). And it has a slew

This is the first of three articles on the AAAS by Philip M. Boffey, who has recently left the news staff of Science to undertake a year-long study of the National Academy of Sciences. The articles are based on extensive interviewing and review of available documents, but are intended to be a reporter's impressions and not to be an "official" profile of the association or to convey the views of particular officers, members, or staff. The first article deals with the establishment and growth of the AAAS to its period of major expansion in the 1950's and 1960's.

of committees cranking out suggestions as to how the AAAS might exert greater influence on the public, on its elected leaders, on the scientific and educational communities, and on anyone else who might be susceptible to a word of advice from the AAAS savants. Change tends to come with glacial slowness at the AAAS—indeed, progress is measured by decades rather than by years—but there seems little question that the association is currently undergoing its most intense self-examination since the early 1950's, when an earlier generation of AAAS leaders nudged the association in new directions which have yet to be fully implemented.

Any attempt to chart future directions for the organization must deal with the accumulated burden of some 123 years of institutional history, so that this discussion of where the AAAS is heading must necessarily start with a bit of background. This week's article will deal with some aspects of the historical development of the association. A second article will describe the major AAAS activities as they exist today. And a third article will discuss possible developments for the future.

One difficulty in attempting to chart

just what the association has been up to for the past century and a quarter is the relative paucity of historical material available. The association has almost nothing in the way of archives, and it has never bothered to compile a detailed history of its activities. Perhaps the leading authority on the early years of the AAAS is Mrs. Sally Kohlstedt, a young University of Illinois graduate student who is writing a thesis on the association's first 12 years (1848–60). Mrs. Kohlstedt complains that it is "very hard to get hold of" the AAAS. This is partly because the organization had no permanent headquarters and thus continually died, in a sense, after each meeting and was revived at the time of the next. Mrs. Kohlstedt says she has been forced to rely heavily on collections of letters of long-dead scientists scattered in libraries around the country. She has found some of the most revealing comments in letters that scientists attending AAAS meetings sent back home to their wives, but just what these tidbits might be will have to await publication of the thesis, for Mrs. Kohlstedt is understandably jealous of her hard-won knowledge.

Nevertheless, enough historical bits and pieces have been published to allow some feel for the broad changes that have occurred over the association's lifetime. And undoubtedly the most central point to make is that the goals of the association have changed significantly. The focus of the organization's concern has shifted from a preoccupation with the needs of the scientific community to a broader interest in society at large.

The AAAS was originally formed in 1848 as an outgrowth of an earlier association of geologists and naturalists, and it seems to have been patterned largely on the British Association for the Advancement of Science. One chronicler of the AAAS's early days describes the geology group as the "parent" and British association as the "godfather" of the AAAS. At the start, the AAAS was unabashedly promotional in nature. In fact, it was even known, for a brief transitional period, as the American Association for the *Promotion* of Science. The association was born at a time when scientists were still relatively few in number in the United States. Those who did pursue science, on either a professional or amateur basis, felt isolated and neglected. Thus one of the key reasons for

establishing a new national association (the existing scientific societies were largely local in nature) was to provide a sense of community, as well as a lobbying voice that could push for wider use of science and better conditions for scientists. As the first constitution of the AAAS expressed it:

"The objects of the Association are, by periodical and migratory meetings, to promote intercourse between those who are cultivating science in different parts of the United States; to give a stronger and more general impulse, and a more systematic direction to scientific research in our country; and to procure for the labors of scientific men, increased facilities and wider usefulness."

So intent were many of the early AAAS leaders on the goal of advancing science that they generally downgraded the importance of communicating its wonders to the public at large. Indeed, there was considerable feeling among early AAAS leaders that there was already too much popularization of science and that what was needed was a professional emphasis on increasing the store of knowledge. One early AAAS president was said to believe "that the association was for the advancement or increase of science, not for its diffusion or promotion." And even as late as 1923, on the association's 75th birthday, a brief historical review had to admit: "The educational function, the advancement of science by diffusion of knowledge, has not been undertaken in an active and systematic way."

Sharp Conflict

The early years of the AAAS were apparently marked by sharp conflict between the leadership and some of the members. The leaders tended to be the most prominent "movers and shakers" of American science—men such as Alexander D. Bache, Joseph Henry, Benjamin Pierce, James D. Dana, Benjamin Silliman, Jr., and Louis Agassiz. The membership, on the other hand, was the most democratic and broadbased of any existing scientific society. From the start, the AAAS apparently opened its membership to all who were interested in science, something such existing groups as the American Philosophical Society and the American Academy of Arts and Sciences did not condescend to do. But the alliance between the elite of the scientific community and the rest of the members was uneasy at best.

George H. Daniels, director of the Center for the Interdisciplinary Study of Science and Technology at Northwestern University, reports finding letters that indicate displeasure on both sides. The scientific elite, concerned about the need to lift professional standards and ever mindful of the image they presented to European colleagues, were continually distressed that amateurs and fools were allowed to sound off at AAAS meetings. Thus, Benjamin Silliman, Jr., in 1860 expressed amazement that a "crazy man from New York" had been allowed to read his "foolish speculations on the Atomic theory," at a AAAS convention, a blunder of the kind that Silliman felt could taint the whole meeting "as a single dead rat a house." The membership at large, on the other hand, including those scientists who were not part of the ruling clique, were convinced that the AAAS leaders were simply using the organization to boost their careers. Daniels cites one letter which alleges that Henry, Bache, Pierce, and the others were using the AAAS "to keep them before the political men of the country as the greatest scientific men of the republic for the purpose of continuing their situations and securing the government pay."

The tensions between leaders and led apparently reached the proportions of a minor crisis in connection with the 1853 meeting of the AAAS in Cleveland, Ohio, as is chronicled in some detail by John D. Holmfeld in the *Proceedings of the American Philosophical Society* for 16 February 1970. The crisis was sparked when a local amateur geologist presented a paper that challenged established geological theories. The paper was denounced by the nation's most eminent geologist, and a special AAAS review committee urged that it be suppressed from the *Proceedings*. The upshot of the controversy was that the AAAS professional leadership disavowed a volume of proceedings put together by local amateurs and put out its own official version minus certain offending papers. The leadership also took firmer control over future meetings and proceedings. Holmfeld advances the rather intriguing hypothesis that, in doing this, the AAAS may have inadvertently harmed the development of science. "The strong veto on speculation and unconventional approaches exercised by the Association may well have contributed to the tendency toward em-

piricism at the expense of bold conceptualizing and theorizing which characterized American science in the nineteenth century," he writes. "Their policy may thus ultimately have had the effect of retarding rather than promoting that maturing of American science which the Association's leadership so earnestly pursued." However, the AAAS leaders would no doubt have retorted that one does not advance science by spreading nonsense about.

As it turned out, the elite never did quite reconcile themselves to hobnobbing with the common folk at the AAAS, and such AAAS leaders as Bache, Pierce, and Agassiz became active in the maneuvering that led to formation of the National Academy of Sciences in 1863 as a more appropriate preserve for scientific savants. To this day, the Academy remains an elitist institution, a sort of House of Lords of the scientific community, while the AAAS tends to think of itself as what some have called "a lower house" of science.

Thoreau Declined

According to an article published in 1898, those scientists who reached the "inner circle" of the Academy tended to disappear from AAAS activities. Not everyone would have lamented their departure, however. For while some of the original AAAS founders had been looking down their snoots at the members, that New England mystic, Henry D. Thoreau, was looking down *his* snoot at *them*. Thoreau's *Journal* reveals that he was asked to send a description of his work to the AAAS in 1853 but declined, feeling that the small minds then running the AAAS could not possibly understand his transcendentalism. "If it had been . . . an association of which Plato or Aristotle was the president," he explained, "I should not have hesitated to describe my studies at once and particularly."

The early AAAS leaders had some rather grandiose aspirations for the association. Some hoped it could become an influential adviser to government; others thought it might become an important vehicle for channeling funds in support of scientific research. But the AAAS has never come close to fulfilling either of these functions, and there is no real agreement that it should.

What the AAAS has primarily done, and done well, for its entire existence is to hold annual meetings and to pub-

lish scientific papers, first in the *Proceedings*, then, after 1900, in *Science*. Oddly enough, *Science*, though it has long been the official journal of the AAAS, was not owned by the association until 1944. The magazine was first started in 1880 by a long-forgotten editor named John Michels, and it was chiefly bankrolled by Thomas A. Edison, but within 2 years it died of financial malnutrition. In 1883 another famous tinkerer, Alexander Graham Bell, tried to revive the magazine. He bought its name and goodwill from Michels for the overly generous price of \$5000, but the magazine continued to lose money—more than \$80,000 in a decade. Despite an emergency appropriation from the AAAS and further financing by Bell, the magazine died again in 1894. Finally, another rescuer—James McKeen Cattell, head of the department of psychology at Columbia—came along and picked up the magazine that had originally cost Bell \$5000 for a mere \$25. Cattell, who seems to have been something of a publishing genius (his empire eventually included seven scholarly journals plus *American Men of Science*), succeeded where the others had failed. In 1900 the AAAS made an agreement with Cattell whereby *Science* became the official journal of the AAAS. Cattell agreed to provide every AAAS member with a subscription, and the AAAS agreed to pay Cattell so much per head. This arrangement continued until 1944, shortly after Cattell's death, when the AAAS bought the magazine from the Cattell estate at a cost of \$270,000 over a 10-year period—a price that many AAAS leaders felt was exorbitant.

The arrangement between Cattell and the AAAS seems to have been mutually beneficial. Cattell got a guaranteed circulation base and a source of items for his journal, while the AAAS was able to attract members more effectively by offering the magazine as an inducement to join. The fact that *Science* was for so long independently owned even though it served as the AAAS journal probably accounts for the flavor of the journal even today. Dael Wolfe, long-time executive officer of the AAAS, observes that *Science* has not changed fundamentally from the early days to the present—he says it has served more as a “news magazine of science” than as a “mouthpiece for the AAAS.”

Over the course of its first century of existence, the AAAS's perception of

Nader Group Sees “Water Wasteland”

A Ralph Nader task force has come up with a harsh and apparently accurate assessment of the government's efforts at cleaning up water pollution. After 15 years (the National Water Pollution Control Act was passed in 1956), seven laws, and the expenditure of \$3.5 billion, says the report, the level of filth has not been reduced in a single major body of water. Industry's share of pollution—now four to five times as much as that from domestic sources—continues to rise. The country's ranchers, loggers, and farmers, who form the agricultural pollution sector, continue to be the “worst polluters in the entire nation.”

The report, *Water Wasteland*,* was compiled over an 18-month period by a team of 26 graduate students, headed by Harvard law student David Zwick. It combines the brisk élan and meticulous documentation characteristic of Nader products, and no bureaucratic inhibitions mark its plunges into the politics, legalities, economics, and unsavory facts of water pollution.

The Federal Water Quality Administration, now the Water Quality Office (WQO) of the Environmental Protection Agency (EPA), has been distinguished by passivity and “perennial listlessness,” says the report. It points out that in only one case has the agency brought court action against an offender (St. Joseph, Mo., in 1960), and that 22 states are still delinquent in formulating federally approved water quality standards, 3½ years after the final deadline.

The main problem, as the task force perceives it, is in the “weakness of basic federal laws regulating pollution.” Abatement conferences and hearing boards are required to look for solutions before the government can ask for court injunctions against polluters, and the administrator of EPA is allowed broad discretion on whether or not to investigate and act on suspected violations. The federal law, says the report, leaves too much responsibility to the states, which, subject to local political pressures, have less stringent codes on pollution and are often even less willing to take action than the federal government is.

The task force feels that the WQO will have to give up the idea of trying to solve problems in a chummy “partnership” atmosphere with polluters and state officials. Instead, the WQO should adopt an “adversary” stance that will not tolerate endless compromises, empty assurances, and the repeated pushing back of cleanup deadlines.

The 700-page report not only catalogs the government's errors of omission, but is critical of what it does do. The WQO's research and development program has produced no solutions worthy of widespread application. The resurrection of the 1899 Refuse Act, which forbids discarding waste into public waterways without a permit, may turn out to supply “licenses to pollute.” The massive amount of federal subsidies for the construction of municipal sewage treatment plants only “encourages industrial waste output . . . at the taxpayer's expense.”

Water Wasteland has been praised not only by public interest groups, but by government pollution officials. William Ruckleshaus, EPA administrator, termed it an “important report” and called on the WQO to “analyze its contents in depth.” Senator Edmund Muskie (D-Maine) called it “revealing” in its insights and “disturbing” in its revelations. Bills submitted by Muskie and President Nixon take steps to deal with many of the ills described in the report, by extending WQO jurisdiction to intra- as well as interstate waters, strengthening and simplifying abatement procedures, and making provisions for citizen lawsuits against polluters. But the task force feels the proposed legislation still falls short of giving the EPA administrator and the public adequate leverage against the powers of Big Pollution.—C.H.

*The report will appear as a book at the end of this year. It is now available in two mimeographed volumes for \$25 from the Center for the Study of Responsive Law, 1156 19th Street, NW, Washington, D.C. 20036.

its mission gradually changed. Whereas the original goal had been to advance science in a rather narrow professional sense while giving only lip service to the need for educating the public, the organization's mission by the mid-20th century focused increasingly on activities aimed at the public and its leaders.

The turnabout occurred largely because the mission of advancing science was preempted by more specialized societies which grew up to serve the needs of narrow disciplines. Indeed, the AAAS has served as something of a spawning ground for other professional societies. The typical pattern has been that a group of specialists will meet with the AAAS until they grow large enough to break the umbilical cord, form their own societies, hold their own meetings, and publish their own journals. The chemists broke off and founded their own American Chemical Society in 1876; the physicists founded the American Physical Society in 1899; and some of the biologists founded the American Institute of Biological Sciences (AIBS) in 1948. Other groups are continually forming and "graduating," as it were. Today, if a scientist wants to know the latest developments in his own discipline—the red hot advances that set his colleagues buzzing—he generally reads his specialty journals and goes to the meetings of his specialty society. The AAAS, meanwhile, has tried to develop into a broader, multidisciplinary society, which considers matters of interest to more than one discipline, or to the scientific community as a whole, or to the public and its elected leaders.

Process of Change

The process of change occurred gradually over decades and is not yet complete, but it seems to have first been given formal recognition in the years following World War II. In 1946 a new constitution was adopted which listed four goals for the AAAS. Two of the goals involved improving the work of scientists (essentially the original mission of the AAAS), but two of them, significantly, called for greater interaction with the public. The four goals, which remain the organization's stated purpose today, were described as follows:

"The objects of the American Association for the Advancement of Science are to further the work of scientists, to facilitate cooperation among them, to improve the effectiveness of science in the promotion of human

welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress."

The change of emphasis was further underlined in a 1951 document that has become the "Bible" of the present-day AAAS. In that year, the leaders of the association met with several consultants at Arden House in Harriman, New York, to help define what role the AAAS should play. The upshot of that conference was the so-called Arden House Statement, which was shaped largely by Warren Weaver, the eminent foundation executive who for many years was influential in AAAS affairs. What seems to have happened is that the conferees batted around ideas until a consensus developed; then Weaver, known for his ability to synthesize and distill the essence of a situation, disappeared and wrote up a statement, which was fussed over a bit and then approved. The thrust of that statement was that the AAAS should leave those tasks that are of narrow professional interest to the specialized societies and should concentrate instead on those tasks that are of interest to more than one discipline or are important to society as a whole. As the statement expressed it:

"In view of the present size and complexity of science, in view of the seriousness and importance of the relation of science to society, and in view of the unique inclusiveness of the AAAS, it seems clear that this organization should devote less of its energies to the more detailed and more isolated technical aspects of science, and devote more of its energies to broad problems that involve the whole of science, the relations of science to government, and indeed the relations of science to our society as a whole."

The statement particularly emphasized that (i) AAAS meetings should move away from the presentation of detailed results in chemistry, physics, or other disciplines, and (ii) the AAAS should take seriously a neglected goal enunciated in its constitution—namely, it should strive to "increase public understanding" of the importance of the methods of science in human progress.

The Arden House Statement was approved by the AAAS Council, the organization's governing body, "as a guide in the formation of policy," and it has affected virtually all of the association's activities since, but the pace of change has been less than meteoric. Initially, the Arden House concepts got

nowhere because they were opposed by the incumbent AAAS staff. "I was always opposed to the idea of generalization," recalls Howard A. Meyerhoff, the association's administrative secretary at the time (1949–53). "The executive committee kept coming back to the notion that the AAAS should be emphasizing general meetings of interest to all disciplines. But in those days there was damn little that science as a whole was interested in." Meyerhoff also felt that, although the Arden House conference provided "spiritual uplift," there were other matters that rated prior claim on the association's limited energies and funds, including the erection of a new headquarters building on the present site at 15th Street and Massachusetts Avenue, NW, in Washington, D.C.

Organizational Concerns

Thus, while the concepts of what the AAAS should do were clearly changing in the 1940's and 1950's, the ideas that had been put down on paper were not actually put into practice. The chief accomplishments of both Meyerhoff and his immediate predecessor as AAAS chief executive, the late F. R. Moulton, seem to have involved organizational matters rather than new program directions. Meyerhoff, who is still active as a consultant in Tulsa, Oklahoma, takes most pride in putting the AAAS on a sound financial basis by streamlining operations. And he credits Moulton, his predecessor, with making the AAAS "an entity, not an orphan" by acquiring *Science* (as well as the now-defunct *Scientific Monthly*) from Cattell and by presiding over successful fund-raising drives, which subsequently enabled the association to build a headquarters of its own to replace the previous quarters at the Smithsonian Institution.

(A little-known footnote of the AAAS effort to build its own headquarters is that the association, in acquiring land for the new building on the present site, inadvertently became the owner of a house of dubious repute. Meyerhoff recalls that one of the buildings on the site was a questionable rooming house. Temporarily, he says, the AAAS set up shop in another old building on the site and collected rent from the rooming house, which "kept up business as usual"—thus the ladies of the house, in a sense, were financing the advancement of science.)

(Continued on page 458)

Though the AAAS was building up its organizational strength in the 1940's and 1950's, there are some who, with the benefit of hindsight, regard the association's leadership—the board of directors and staff—as unduly timid. The AAAS in the early 1950's had a chance to pick up the then deficit-plagued *Scientific American* through an arrangement proposed by Gerard Piel and his colleagues, but the AAAS board backed away from the opportunity and Piel's group went on to build *Scientific American* into one of the major success stories in recent magazine history. You can hear arguments both ways as to whether the decision was wise, given the conditions, and whether the decision was or was not ultimately in the interests of science as a whole. But even many of those who

support the decision agree that it shows a less than venturesome spirit.

There seems to have been considerable friction between both Meyerhoff and Moulton and their boards during the 1940's and 1950's. Indeed, Meyerhoff had one row of such intensity with his executive committee that he ended up resigning in 1953. He was ultimately succeeded by Dael Wolfe, a superb and tactful committeeman, who ushered in an era of relative peace. Wolfe describes his relations with the board over 16½ years as “a honeymoon,” and there would seem to have been few, if any, conflicts between them.

In a gradual and piecemeal fashion, Wolfe, who came to the AAAS full time in late 1954, began implementing some of the Arden House concepts. He

got foundation support for new programs in science education and the public understanding of science, he slowly began to change the focus of the annual meeting, he launched the News and Comment section of *Science* and merged *Scientific Monthly* into *Science* so as to strengthen the association's major magazine, and he brought in Philip H. Abelson, a distinguished geophysicist, as editor of *Science*. By the end of Wolfe's tenure, which largely coincided with the golden growth years of American science, the AAAS had grown substantially, had gotten involved in a number of new activities, and had mapped out goals even more ambitious than those delineated at the Arden House conference, as will be described in subsequent articles.—PHILIP M. BOFFEY

Health Care: What the Poor People Didn't Get from Kentucky Project

Floyd County, Kentucky. In 1967, the Office of Economic Opportunity (OEO) funded a “Comprehensive Health Care Program” for the poor people of this coal mining county in Appalachian Kentucky. As in most of eastern Kentucky and other parts of Appalachia, the poor in Floyd County are afflicted by staggering social, environmental, and medical problems. Over half the county's population of 34,000 falls below the poverty line. Most of these people live in small houses or shacks in the rural hollows along creeks filled with garbage and sewage.

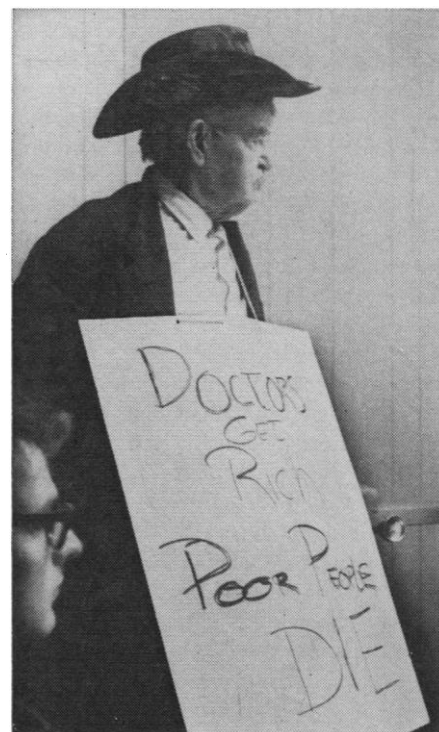
Coal no longer provides jobs for everyone, so for years young people have been leaving the hills to find work in the cities to the north. Those who remain tend to be the very young, the middle-aged, and the elderly. Often the men have worked in the mines for years and are unable to work any longer, suffering from such occupational disabilities as pneumoconiosis, the dreaded Black Lung disease that can turn a man at age 50 or 55 into a wheezing, coughing derelict.

After spending more than \$5 million, the OEO program has yet to provide anything resembling comprehensive health care. It has, however, been the

source of a major political battle involving most of the county's doctors and politicians, a welfare rights organization, and eastern Kentucky's powerful Democratic congressman, Carl D. Perkins. The Floyd County situation in itself is worthy of notice, but it has a more general relevance since it could be repeated time and time again if Congress enacts some form of national health insurance.

The OEO went into the health business during the Johnson Administration because of the realization that poverty and ill health reenforce each other. At the time the health projects were established, OEO planners intended to provide alternatives to existing health services for the poor and, in doing so, to establish models that might influence the direction of American medicine. Indeed, such facets of OEO health care as family-centered preventative medicine, salaried group practice, training of paramedics, and consumer participation in decision making, have become elements in the debate over national health insurance.

The Floyd County project, however, was a striking exception to OEO policies. Funded as a “research and demonstration” project, it attempted to improve the health care of isolated, rural



An 85-year-old welfare rights demonstrator. [Photo by M. Kenny]

poor people by working within the existing health care structure.

The medical facilities in the county, while sparse by national standards, are average or better for eastern Kentucky. There are 15 physicians in private practice. The only specialists are surgeons; there are no obstetricians, pediatricians, or internists. The county has 126 beds in three hospitals, and the doctors practice primarily in those towns that have the hospitals. But very little “charity medicine” was offered.