edited by S. L. BYRAND

An Alliance for Progress, 150 Years Young

In 1848, the United States stretched coast to coast for the first time and the electric telegraph was still in its infancy. The Association of American Geologists and Naturalists determined it time to convene individuals from all scientific fields, saying "more questions may be satisfactorily settled in a day by oral discussion, than in a year by writing and publication." Thus, nearly 90 men came together in Philadelphia to establish AAAS as a unified voice for the needs of science.

On 12 to 17 February 1998, the Association returned to its birthplace for its annual meeting and to launch the commemoration of its sesquicentennial. About 5000 gathered in Philadelphia to listen to 850 speakers—among them, President Clinton, who became the eighth sitting U.S. president to address a AAAS meeting in some way. As always, meeting content focused on science's cutting edge, but it also presented a historical context with such programs as 150 Years of Racial Thinking in American Science, How Astronomy Expanded into Astrophysics, and AAAS at 150—The Past as Prologue.

After the Association's inception, it was unclear if AAAS could survive 15 years, let alone 150. A book by science historian Sally Gregory Kohlstedt, *The Formation of the American Scientific Community*, details the early history of the Association. Debates about how members should be selected and who might present and publish papers made AAAS the first American forum for establishing fundamental rules for working scientists. However, the general membership expressed a growing dissatisfaction with what they viewed as autocratic leadership. After AAAS suspended its meetings because of the Civil War, Association leaders helped to draft the charter for the National Academy of Sciences, which some scientists thought might replace AAAS. However, at the end of the war, various AAAS members rallied for the revival of their Association and its democratic ideal. Wrote geologist William Rogers, "Whatever may have been its faults, its shortcomings, it was of great service and its free [and] unexclusive spirit ought I think to be perpetuated."

Since then, AAAS has grown into the world's largest federation for science, with its publications reaching a global audience in the millions. In a recent interview, Congressman George Brown (D–CA), former head of the House Science Committee, had high praise for its efforts: "AAAS is probably the foremost expounder of the scientific culture of any organization in the world." He added that he believes that role will become increasingly more important because of the need for scientists to become more involved with science policy-making and the application of research in the community at large.

Throughout its history, AAAS has not only explained the scientific culture, but also has shaped it. For instance, in 1851, the first major public address on professional standards for scientists was given at an Association meeting by AAAS president A. D. Bache. His speech is cited by science historians as a milestone in the improvement of the fledgling American scientific enterprise. While other AAAS presidents highlighted important issues in their meeting addresses, leading scientists presented their most important work, from evolution to thermodynamics. Early AAAS meetings worked to establish the metric system as the standard in American science.

Today, the Association continues to influence the course of science in a myriad of ways, including improving the education of future scientists through its efforts in school reform, national testing, and academic standards. "On all these issues, AAAS has been there," said New York State Education Commissioner Richard Mills, who has worked with AAAS staff on national policy efforts and on educational issues in his own state; last year, New York adopted more challenging standards to drive its curriculum for math, science, and technology.

AAAS's unique combination of programs, its flagship publication *Science*, and its annual meetings have cast attention on countless breakthroughs and issues, such as through an in-depth examination and attack of Nazi racial theories in 1938 and seminal research by Stanley Miller in 1953 that showed how life on primitive Earth could be created through non-supernatural means. In 1970, field research by a AAAS team in Vietnam uncovered that biological weapons like Agent Orange were being "considerably more destructive than anyone had previously imagined"; their report influenced the Nixon Administration to cease the spraying.

William Baker, retired chairman and president of Bell Laboratories, recalled when he and others, including C. P. Snow, spoke at the 1960 meeting on the "moral unneutrality of science" in the nuclear era. To Baker, the nationally broadcast address, which looked at the special responsibility of science to the world at large, reflected AAAS's ability to bring the scientific community together on issues of fundamental importance to humanity. "It was historic evidence of the enormous versatility and representation that AAAS has," he said.

With additional reporting by Mary Darby.

Showcasing AAAS's Heritage

The Dudley Observatory in Albany was conceived at one AAAS meeting and dedicated at another in 1856. The above painting depicts that inauguration and includes such AAAS leaders as Louis Agassiz, A. D. Bache, Asa Gray, and William Redfield. Former U.S. president Millard Fillmore, a AAAS member, is at the far left, third from bottom.

The composite portrait is one of about 400 items on display in a new exhibit that reveals AAAS's unique history. Other items include the 1848 signature book, with the original Objects and Rules for the Association and the "John Hancocks" of members who signed on to them. Clyde Snow, who in 1984 led the first AAAS team of forensic scientists to Argentina, loaned personal items from his time spent identifying the remains of the *Desaparecido*, those Argentineans who were presumed dead at the hands of a military regime. Also on hand are various meeting paraphernalia and fossils unearthed by AAAS members in the late 19th century, on loan from the Academy of Natural Sciences in Philadelphia. Among the exhibit's more than 200 photos is one of Albert Einstein at the 1934 AAAS meeting, where he made his first appearance before a U.S. scientific association.

Said the exhibit's curator Al Teich, director of AAAS's Science and Policy Programs, "Many people know what the Association does today but don't have a full appreciation for its long and distinguished history. This exhibit helps to highlight some of AAAS's accomplishments in nurturing the scientific community when it was young and fragile, helping to give birth to other institutions and societies, and taking a lead role in issues of social justice, diversity, and ethics." The exhibit was unveiled at the AAAS Annual Meeting in February and will be open for viewing at the Association's headquarters through 20 September.

Advancers of Science Earn High Praise

AAAS presented its 1997–98 awards for major contributions in scientific achievement at the annual meeting in Philadelphia on 16 February.

AAAS Philip Hauge Abelson Prize

One of the world's preeminent ecologists, Peter H. Raven, was recognized for his proven service to science and society as a leader in efforts to achieve sustainable agriculture and forestry in the tropics, as well as to preserve plant and animal species around the world. The director of the Missouri Botanical Garden since 1971, Raven is currently a member of the President's Committee of Advisors on Science and Technology and is the Home Secretary of the National Academy of Sciences.

Award for International Scientific Cooperation

Bert Richard Johannes Bolin was honored for both his leadership in international research programs for the study of global climate and his scientific contributions to that field. He has advised policy and science communities around the world on the critical issue of local, regional, and global climate change caused by human activity. Currently, Bolin is the chairman of the Intergovernmental Panel on Climate Change, which assesses the latest findings in the field of climate change.

AAAS Award for Public Understanding of Science and Technology

Barry T. Peterson won for his many efforts to communicate science to the public while simultaneously maintaining a productive research career as a professor of physiology at the University of Texas. In 1995, Peterson founded The PowerTools Project to develop creative ways to enhance students' understanding of basic scientific concepts; it grew out of his outreach activities with students and teachers in the Tyler School District. Currently, Peterson is collaborating with a local science museum to establish a clearinghouse of science resources for teachers, students, and their families.

AAAS Mentor Award

Given for showing in less than 10 years great leadership in increasing the participation of students who are underrepresented in science and engineering, this year's award went to Judy Goldsmith. An assistant professor in the department of computer science at the University of Kentucky at Lexington, Goldsmith was honored for her commitment to providing a wide array of mentoring services to meet the emotional and financial needs of her students.

AAAS Mentor Award for Lifetime Achievement

Richard Tapia, of the Department of Computational and Applied Mathematics at Rice University, was recognized for his long-standing commitment to reaching out to underrepresented students. With his Mathematical and Computational Sciences Awareness Workshop, Tapia has reached hundreds of K–12 educators from schools with large minority populations, updating them on current issues in mathematics and computational science. He has mentored 60 underrepresented students who went on to the doctoral level at another institution and 17 Ph.D. students from underrepresented populations. He also serves as the director of Rice University's Spend a Summer with a Scientist program, which has paired researchers with minority students for the past 8 years.

AAAS Scientific Freedom and Responsibility Award

JoAnn Burkholder was honored for her unflagging dedication in focusing public attention on how U.S. rivers and fish could be devastated by the aquatic microbe *Pfiesteria piscicida*. An associate professor of Aquatic Ecology and Marine Sciences in the Department of Botany at North Carolina State University, she identified *Pfiesteria* and its possible role in the deaths of millions of fish in North Carolina waters. Her research put her at the center of one of today's most contentious debates involving science and public policy. Although Burkholder's research is finally being recognized as both creative and credible, she had long endured challenges from her critics. Some denounced both her personal reputation and professional competency as she sought to link *Pfiesteria* to such pollutants as human and hog sewage and agricultural runoff. Her efforts are responsible for the current intensive research into the extent of *Pfiesteria*'s role in degrading the coastal environment and what that may mean to public health.

AAAS Newcomb Cleveland Prize

Two Research Articles from the 26 July 1996 issue of *Science* won this award for an outstanding paper that provides fundamental contributions to basic knowledge or technical achievements of far-reaching consequence: "Small Peptides as Potent Mimetics of the Protein Hormone Erythropoietin" by Nicholas C. Wrighton, Francis X. Farrell, Ray Chang, Arun K. Kashyap, Francis P. Barbone, Linda S. Mulcahy, Dana L. Johnson, Ronald W. Barrett, Linda K. Jolliffe, and William J. Dower; and "Functional Mimicry of a Protein Hormone by a Peptide Agonist: The EPO Receptor Complex at 2.8 Å" by Oded Livnah, Enrico A. Stura, Dana L. Johnson, Steven A. Middleton, Linda S. Mulcahy, Nicholas C. Wrighton, William J. Dower, Linda K. Jolliffe, and Ian A. Wilson. The coauthors share this award for their research.

Awards Salute Excellence in Science Writing

On 14 February, AAAS continued its 48-year tradition in honoring journalists for outstanding work in conveying news and information about the sciences, engineering, and mathematics. The Whitaker Foundation, which supports research and training in biomedical engineering, has sponsored the AAAS Science Journalism Awards since 1995.

■ **Newspapers with a circulation more than 100,000: Robert Lee Hotz** and **Julie Marquis** won for their *Los Angeles Times* series "The Brain: A Work in Progress" (3 October and 13 to 17 October 1996). Their comprehensive package of articles connected issues of neurophysiology and policy in a compelling way—shedding light on disease, trauma, emotions, and identity.

■ **Newspapers with a circulation less than 100,000: Jenni Laidman** of *The Bay City Times* was recognized for her series "Unnatural Resources: Playing God in the Great Lakes" (2 February to 2 July 1997), in which she documented the threat of vanishing species in the Great Lakes.

■ **Magazines**: The award went to **Fred Guterl** of *Discover* for "Riddles in the Sand" (November 1996). In his examination of sand grains and the unpredictability of their behavior, Guterl ambitiously tackled a novel topic and made it interesting to the reader.

■ **Television**: **Lee Carey** and **Doug Bolin** (with Kristian Berg, Lisa Blackstone, Kim MacDonald, Jeff Nielsen, Erin Rasmussen, and Kevin Williams) of Twin Cities Public Television were honored for an episode of *Newton's Apple*. Their show, broadcast on PBS, provided clear explanations with engaging methods on such subjects as cave formations and the human eye.

■ **Radio:** For their excellent presentation of complex concepts related to current brain research, **Joe Palca** and **Michelle Trudeau** (with Robert Stein, Peggy Girshman, and Jane Greenhalgh) won for their five-part series entitled "How the Brain Works," which aired on National Public Radio (16 to 18 September 1996).