Seminar Series Honors Blacks in Science and Technology

Black American scientists and engineers have made a wide range of contributions from the discovery of blood plasma to the invention of gas masks and traffic signals. During Black History Month, in February, a series of four seminars was held at the AAAS to recognize the accomplishments of black scientists and engineers—past and present.

Through biographical anecdotes, panels of distinguished black scientists reviewed the harsh circumstances under which black men and women obtained their education, found work related to their training (though seldom at the level their credentials would suggest), conducted research, and imparted knowledge and guidance to their students.

Samuel Massie, professor of chemistry at the U.S. Naval Academy, described the frustrations of Edward Bouchet, who was denied the opportunity to conduct research in his field after earning the Ph.D. in physics from Yale in 1876 (Phi Beta Kappa). Bouchet spent most of his career teaching high school physics or working as a customs inspector. Percy L. Julian, who earned the Ph.D. at the University of Vienna in 1911, was noted for his significant research contributions despite repeated incidents of discrimination in his pursuit of education and employment. Julian's work included the development of a synthetic drug for glaucoma, the discovery of an economical way to extract sterols from soybean oil, and the development of an improved method of producing cortisone.

Speakers noted the historic denial of the opportunity to learn, to exercise one's abilities in research, and to assume leadership roles in the scientific community. Of those individuals who have made significant contributions to their scientific fields, few are well known among black Americans and many are not known to be black by their fellow scientists. In the past, racial anonymity made it possible for some to do research, publish, and advance professionally, so long as their positions did not require public visibility. Within the black community, the accomplishments of all but a few black scientists have gone unnoticed. Thus, it is not well known that the individuals who developed the astrotelescope used by American astronauts, and the self-lubricating machine, for example, were black.

As a result of this invisibility, thousands of black Americans have shared the doubts of the larger society about their own ability to excel in the sciences. Public access to the evidence which refutes these doubts has been limited at best.

The number of universities that have graduated black doctoral scientists is relatively small. Within each specialty there appears to be a select list of schools that are training black Ph.D.'s. In some instances, individual professors can be credited with the "track record" of a particular department or institution because of their dedication and skill as mentors.

Critical factors in the education of black Americans, said seminar speakers, include the teachers' assumptions regarding the ability of students to learn and the willingness of teachers to try innovative methods.

In comparing the teaching of chemistry at predominantly black colleges and at the predominantly white Naval Academy, Massie noted that some of the approaches and techniques commonly applied in black colleges, although not widely used in other institutions, are effective with students at the Academy. These approaches center on working from the individual student's level of knowledge of a subject rather than from an assumption that all students come to the subject equally prepared. Instilling a positive attitude toward one's abilities is also a part of this technique. Massie described his own class of Naval Academy students who had previously done poorly in chemistry. At the beginning of the semester Massie told the class that they were all "A" chemistry students, and would be treated accordingly. Many of the students did, in fact, earn "A's" by the end of the term.

In a discussion of employment issues, Henry N. Williams, University of Maryland, described what he calls the traditional route to acceptance within the community of black scientists. In this scenario, the young black Ph.D. scientist

Bettman Archive

George Washington Carver in his laboratory at Tuskegee Institute.

Report on Science and the Media Available

A collection of annotated bibliographies describing mass media science programs and publications, as well as research in the field of science communication, is now available. The report covers the science programming of local and network radio and television, science in general circulation magazines and newspapers, and specialty science publications.

Science, The Media, and The Public: Selected Annotated Bibliographies was compiled by Carol L. Rogers, head, AAAS Office of Communications and Membership, and Sharon Dunwoody, assistant professor, School of Journalism and Mass Communication, University of Wisconsin, Madison.

For a free copy, write the Office of Communications at the AAAS address.

returns to a black college to teach. Here, he or she gains the respect of other black scientists by putting an emphasis on the teaching of science. But, situated at a (traditionally) small school with a heavy class load, the young scientist often finds that this route does not lead to research funds, graduate students, the time to do research and publish, or to recognition within the majority scientific community.

Seminar participants discussed the historic, and to some extent continuing, reluctance of major universities to employ as science faculty even their own black graduates, the need for black faculty at majority and minority institutions, and the insufficient numbers of persons qualified to meet these needs. At majority institutions black faculty members serve to reduce the sense of isolation felt by minority students and to dispel some of the misconceptions and prejudices held by white students and colleagues. Their presence in this respect is an important tool in the effort to remove attitudinal barriers to equal opportunity.

The panelists and other seminar participants suggested a range of goals and strategies for improving the access of black Americans to science. Among them are: (i) improved communication among faculty at minority and majority institutions to increase the flow of black college graduates to and through graduate programs in the sciences; (ii) increased awareness among black scientists of the political aspects of science careers and of the professional alternatives and consequences of various decisions in professional life; and (iii) strengthening of the associations and caucuses which are concerned with access of minorities to science.

In the discussion of characteristics of various kinds of organizations (for example, associations of minority scientists), Gloria Gilmer, National Institute of Education, proposed a kind of organizational mentorship where an established scientific society would foster the development of a younger minority association which has similar goals and interests. At some point the minority association should either become sufficiently strong and independent to function without the mentor or cease to be necessary due to attainment of equity in science.

James M. Jay, professor of biology at Wayne State University in Detroit, began the series with an overview of black Ph.D.'s in the natural sciences. Jay, who authored *Negroes in Science: Natural Science Doctorates 1876–1969* (Balamp, Detroit, 1971), maintains a file identifying over 1600 black Americans who have received Ph.D.'s in the natural sciences.

The second seminar featured Henry N. Williams and Shirley Malcom discussing "Black Americans in the Biological Sciences." Williams, a 1981 AAAS–American Society for Microbiology Congressional Science and Engineering Fellow, is currently teaching and conducting research at the University of Maryland. Malcom, an ecologist who heads the AAAS Office of Opportunities in Science, has experience in teaching, research, federal grants administration, and advocacy for groups underrepresented in science, as well as in program management.

The program on "Black Americans in the Behavioral and Social Sciences" featured Margaret C. Simms, senior research associate and director of the Minority and Social Policy Program at the Urban Institute, and Doris Wilkinson, professor of medical sociology at Howard University. Wilkinson, who was for 3 years executive associate for Careers, Minorities, and Women at the American Sociological Association, is president-elect of the Washington, D.C., Sociological Society. Simms is past president of the National Economic Association.

Gloria Gilmer, an associate on the Mathematics Learning Team of the National Institute of Education, and Samuel Massie, professor, Department of Chemistry, U.S. Naval Academy, addressed the topic of "Black Americans in the Mathematical and Physical Sciences." Gilmer, formerly a member of the Board of Governors of the Mathematical Association of America and past director of its blacks and mathematics program, is administering federal research grants and conducting research into the teaching and learning of mathematics, especially among black youth. Massie, who received his baccalaureate degree in chemistry at the age of 18, is a former college president and chair of several university chemistry departments.

As the series ended, participants were reminded that in scientific research success is not always reaching one's goals. It is more often in understanding what has occurred and going from there.

PAULA QUICK HALL
Office of Opportunities in Science

For more information about the activities and publications described in "AAAS News," write to the appropriate office, AAAS, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036, unless otherwise indicated.

SWARM Annual Meeting to Highlight Science Education

The 58th annual meeting of the Southwestern and Rocky Mountain Division (SWARM) of the AAAS will focus on topics of particular interest to the region, as well as national scientific issues. SWARM will meet on the campus of the University of Texas at El Paso, 28 April through 1 May 1982.

The meeting's theme of "Excellence in Science Education" will be addressed at the opening session by AAAS chief education officer F. James Rutherford. Discussions of innovative approaches to science education will include the "Saturday Programs" of the New Mexico Academy of Science, and "Science Bazaar" programs.

Several of the meeting's sessions will center on the special concerns of the SWARM area states. These will include symposia on desert ecosystems, the role of research in the management of our national parks, and research priorities for the Chihuahua Desert. The John Wesley Powell Memorial Lecture will feature Harvey Banks, project director