

### Programs in Education

#### Anthropology in Educational Research

Howard F. Hjelm and Lloyd K. Johnson of the U.S. Office of Education have arranged a symposium for the afternoon of 26 December, with Ralph Tyler, former director of the Center for Advanced Study in the Behavioral Sciences, as chairman. Michael Cole and Sylvia Scribner of the Rockefeller University will discuss "Theoretical Frameworks for the Anthropological Investigation of Formal Learning." Peggy R. Sanday, University of Pennsylvania, will describe "Emerging Methodological Developments for Research Design, Data Collection, and Data Analysis." Francis A. J. Ianni, Teachers College, Columbia University, will present a paper on "Social Organization, Socialization, and Cultural Mediation in Formal Learning Situations." Howard Hjelm will offer a paper on "The Federal Interest in Research on the Anthropology of Education."

#### Education and Population Stabilization

On 27 December, in the afternoon, Wayne W. Welch of the National Science Foundation will arrange a symposium on "Educational Implications of Zero Growth," seeking to appraise the changes likely to occur in American education as a result of the stabilization of population. Robert H. Beck, University of Minnesota; Herbert J. Walberg, University of Illinois; Walter W. McMahon, University of Illinois; John K. Folger, Tennessee Higher Education Commission; and Hendrik Gideonse, University of Cincinnati, will consider the topic from the standpoint of a number of disciplines.

#### Students of Exceptional Promise

On 28 December Julian Stanley of Johns Hopkins University will arrange a symposium on "Discovery of Mathematically Talented Youth." Some seventh graders are able to equal the performance of the upper 1 or 2 percent of high school seniors. Unless given study opportunities on a par with their exceptional abilities such students are likely to develop below their optimum capacity for growth. Julian Stanley will summarize the results of his current studies of highly promising

mathematics students in Baltimore junior high schools, "What Do We Know about Intellectual Brightness and Precocity?" His colleague Daniel Keating will present a paper, "The Study of Mathematically Precocious Youth." Another of his associates, Mrs. Lynn Fox, will talk about "Facilitating the Educational Development of Mathematically Precocious Youth." In the afternoon, Helen S. Astin, University Research Corporation, will appraise "Sex Differences in Mathematical and Scientific Precocity." A paper will be offered on the subject of scientific creativity, following which Anne Anastasi, Fordham University, will offer a summary discussion.

#### Computer-Assisted Instruction

On the afternoon of 28 December, a symposium arranged by Duncan N. Hansen of Florida State University will appraise "Alternative Computer Systems in Instruction." Donald Bitzer, University of Illinois, will report on "Plato IV in the '70's"; Louis Bright, Western Institute for Science and Technology, will describe "A Networking Service for Computers in Education"; Roger Grossel, Air Force Human Resources Laboratory, will discuss "Advanced Instructional Systems"; and Kenneth Stetten, The Mitre Corporation, will describe "Ticcit—A Small Company Approach to Instruction." Robert J. Seidel, Human Resources Research Organization, will offer a summary discussion.

#### Non-Formal Education

On the afternoon of 28 December, a symposium on "Non-Formal Education" will be arranged by Gordon I. Swanson, University of Minnesota. Non-formal education has gained wide currency as an educational pattern with unexplored potential for enhancing lifelong learning and for accelerating the process of development in the third world. It has not been extensively studied. This symposium will review the state of the art in non-formal edu-

cation and report on two large research projects currently under way. Bernard Wilder, Michigan State University, will contribute a paper on "Non-Formal Education: Conceptual and Operational Variations"; Manzoor Ahmed, International Council for Educational Development, will discuss "Non-Formal Education: Problems and Processes." Patrick Ralston, U.S. Department of Agriculture, and Robert Worthington, U.S. Office of Education, will offer summary discussion.

Most of the above programs have been developed through sponsorship of AAAS Section Q.

#### Traditional Cultures

On the morning of 28 December, a symposium will be offered on "Science Education in Traditional Cultures," arranged by D. Park Teter, a Ph.D. candidate at Princeton University. The advent of modern technology has rendered obsolete the skills that traditional societies in Asia, Africa, and Latin America know how to teach. Developing countries are experiencing a revolution whose scope exceeds anything that either they or the West have previously experienced. Where educational systems have too rapidly embraced new knowledge they have failed to communicate the spirit of inquiry which is its essence. This symposium will examine opportunities for and difficulties of introducing new approaches to early science education in societies without established scientific traditions. Teter will introduce the symposium with a paper, "Scientific



Two students [Jonathan Edwards (right, with computer) and Joseph Bates] skipped grades 9 through 12 and enrolled as college freshmen at age 13 at Johns Hopkins University. [W. L. Klender, *Baltimore Sun*]



New approaches to science education are being carried out in societies without established scientific traditions. [African Education Program, Education Development Center, Newton, Mass.]

**Revolution in Traditional Cultures—Some Questions**”; Robert Carlisle, Education Development Center, will discuss “The African Primary Science Program”; Arthur H. Livermore, AAAS, will report on “Science Education in Southeast Asian Cultures”; Henry G. Walbesser, University of Maryland, will appraise “Science Education in Latin American Cultures”; and Mary Budd Rowe, University of Florida, will describe “Science Education in U.S. Minority Cultures.” In the afternoon there will be an informal discussion.

#### **American Projects in the Middle East**

On 29 December, in the morning, establishing a sequence of programs on education and the developing world, a symposium on American educational projects in the Middle East will be arranged by Frank X. Sutman, Temple University. Kenneth Martin, U.S. Agency for International Development, will discuss “AID Activities in Turkey and Other Areas of the Middle East”; Lily Brown, director, American Research Center in Egypt, will report on “Research and Fellowship Activities in Egypt”; Milton O. Pella, University of Wisconsin, will describe “Science Education Activities in Arab Middle East Countries”; Joseph Belmonte, Institute of International Studies, will discuss “Middle East Activities and Their Effect on U.S. Citizens”; and Robert MacDonald, U.S. Department of State, will describe “Exchange Programs in the Middle East.”

#### **Science Education and Urban Minorities**

On 29 December, the AAAS Committee on Minorities in Science will sponsor a symposium, “Turning on with Science: Education Programs for Minorities.” The Committee’s efforts are aimed at increasing the representation in scientific activities of blacks, women, Spanish-speaking Americans, and native Americans. One important determinant of career interest is science education. The symposium will focus on innovations in education designed to present science effectively to children representing ethnic and other minorities. It will be arranged by Rhoda Baruch, consulting psychologist, Newton Center, Mass., and Walter D. Knight, University of California at Berkeley.

In the morning session Arnold E. Ross, Ohio State University, will discuss “Voluntary Programs Fostering Mathematics Interest: Engaging Peer Group Support”; Mary Ellen Hillaire, Evergreen State College, will offer a paper, “Relating Science to a Cultural Life Style Including Aquaculture among the Lummi”; Janice Cutler, New York University, will describe “A Hands-on Approach to Science Education: The COPES Program”; and Miguel A. Nevarez, Pan American University, will describe “Concept Formation with Relation to Bilingual Education.”

In the afternoon, Henry L. Morrison, University of California, Berkeley, will offer an appraisal, “Motivating Urban

Students toward Science and Engineering; Problems and Successes at College and College Prep Levels”; Walter Massey, Brown University, will discuss “Preparing High School Science Teachers: High School–University Cooperation”; and Rita Peterson, California State University at Hayward, will describe “Approaches to Evaluating Programs for Motivating Disadvantaged Students to Study Science.” Following these papers a summary discussion will be led by Harry L. Morrison, Mary Lila Sherburne, Associates for Renewal in Education; Sylvester Webb, Principal, Tanner-Duckery Elementary School, Philadelphia, Pennsylvania; Rueben Pierce, Washington, D.C. Schools; and Herbert Thier, Science Curriculum Study, Berkeley, California.

#### **Assessing Educational Achievement**

On the afternoon of 29 December, a symposium arranged by J. David Lockert, University of Maryland, will describe methods for “Assessing Achievement in School Science.” Robert Carleton, executive secretary, National Science Teachers Association, will serve as chairman. The National Assessment of Educational Progress obtains data representing the output of the American educational system in ten learning areas, one of which is science. Objectives in science were defined, assessment exercises were developed, and a national sample of youth of ages 9, 13, and 17 years and young adults (ages 26 to 35) took the tests in 1969–70. Results have been tabulated, analyzed, and reported. The second national assessment in science is taking place during 1972–73. J. Stanley Ahmann, staff director of the National Assessment, will describe “Assessment of Science Achievement in the United States”; James D. Rath, University of Illinois, will offer a paper, “NAEP Findings in Science: Some Interpretations”; and Leopold E. Klopfer, University of Pittsburgh, will discuss “The International Study of Educational Achievement in Science.”

#### **Education and Social Indicators**

On 30 December, in the morning, a symposium on “Educational Achievement and Social Indicators” will be arranged by Boyd Ladd and Iris Garfield of the U.S. Office of Education. Wilbur J. Cohen, Dean of the University of Michigan School of Education, will chair the session, which will include a paper on “National Assessment and Social Indicators,” by Selma J. Mushkin, Georgetown University.