western University and then joining the Center for Nuclear Studies at the University of Texas.

Shugart has two sons, each born on a return to Austin. The older is now 10 and may be a future physicist: He enjoyed accompanying his father to the nuclear laboratory. The younger, just 3, has not yet indicated any career preferences.

What are Shugart's impressions after almost a year of travel? Despite widespread concern over declining student interest in physics, he has found quite the opposite. Smaller schools have more and better physics programs, he told PHYSICS TODAY. In many cases better physicists are staffing the colleges than was the case a decade ago.

Where are the problem areas? Shugart is concerned about college curricula designed only for students going on to graduate school. He wants more flexibility for terminal-degree students going into industry or high-school teaching. Another problem is providing students with better information on employment prospects.

"The kids in college don't know the real job situation," he said. "This is something the physics community will have to face." —JPW

AIP Information Division Asks $4.2 Million over Three Years

After several years spent studying the criteria for a national physics information system, the American Institute of Physics is asking the National Science Foundation for $4.2 million, spread over a period of three years, to begin implementation of its recommendations for such a system. The AIP Information Division submitted its proposal to NSF on 27 June; a decision is expected at the 22 Nov. meeting of the National Science Board. If approved the grant will be effective 1 March 1970.

The grant will provide funds for the start of new services to be offered to the physics community. Scheduled for early 1970 are pilot versions of a new current-awareness journal and physics information on magnetic tape. The switch to a production operation will mean a major increase in the activities of the division.

New products developed are expected to become a permanent part of AIP efforts to improve communication among physicists.

RESONANCES

Physicists consolidated their White House influence when President Nixon announced his intention to nominate Hubert B. Heffner, professor of applied physics and electrical engineering at Stanford, to be deputy director of the Office of Science and Technology. Heffner, 44, would serve under Lee A. DuBridge, who is also presidential science advisor.

Named to head the National Bureau of Standards is Lewis M. Branscomb, now director of the Joint Institute for Laboratory Astrophysics at Boulder, Colo. On 1 Sept. Branscomb will replace Allen V. Astin, who is retiring after 17 years as director and 37 years with NBS.

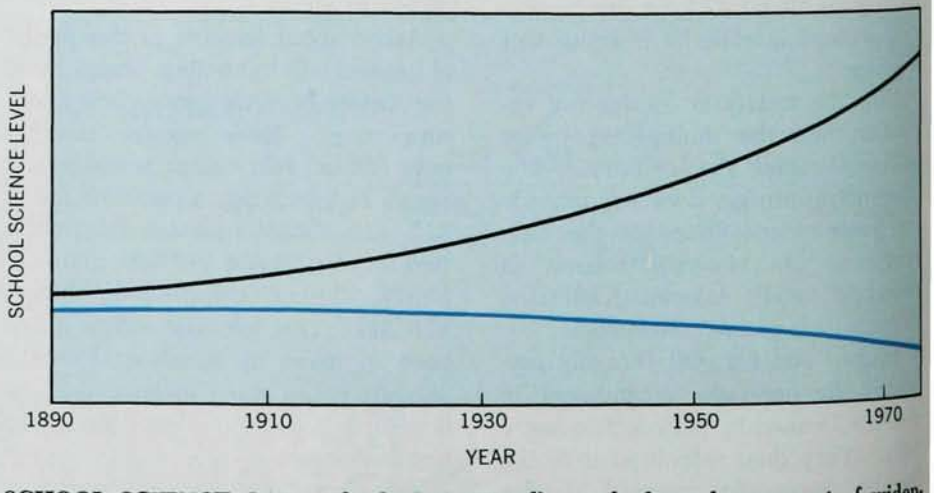
Political upheaval has caused cancellation of the 11th Latin American School of Physics. José Leite Lopes, professor at the Centro Brasileiro de Pesquisas Físicas and director of the 1969 school, reports he has been excluded from his university and forced into retirement. In a letter to Peter G. Bergmann at Syracuse, Leite Lopes wrote, "I am sorry to tell you that under the circumstances I do not believe there is any atmosphere for holding the school in this country as planned." He added that he and others plan to leave Brazil.

AIP Study Offers Solutions to School Science Problems

After a year of talking to teachers, students and administrators in interviews lasting up to two hours, a researcher for the American Institute of Physics has come up with 27 recommendations for improving US precollege science teaching.

She found the science teachers "overworked and tired, eager and enthusiastic, frustrated and angry, in anguish for the students they want to help and can't, and . . . surprised and pleased that someone will listen."

The interviewer was no stranger to the subject. Elizabeth A. Wood, a PhD crystallographer at Bell Telephone Laboratories until her retirement in 1967, has been associate director of the Physical Science for Non-science Students program (PSNS). The AIP study grew out of meetings 18 months ago of representatives of the American Association of Physics Teachers, the Commission on College Physics and the AIP Division of Education and Manpower. Arnold A.



SCHOOL SCIENCE GAP. Elizabeth A. Wood's graph shows her concept of widening gap between level (background, vocabulary, sophistication) of school texts and courses (black) and that of the average student and teacher (color).

Strassenburg, division director, called the meetings.

Wood interviewed 116 persons, among them curriculum designers, teacher educators, local and state school officials and staff members of national education organizations. Most of all she talked to those on each end of the pedagogical log: science teachers and science students.

What did she find? The gap between the level of the courses and texts used in the schools and the abilities of both the average teacher and the average student has widened steadily (see figure). Science curricula have been upgraded. As one rural teacher put it: "Today's school science is yesterday's college science." At the same time schools are teaching science to a greater fraction of their students, including potential dropouts, and teaching it earlier. The gap shows up when a science student does not have enough background or vocabulary to grasp the meaning of the text when he reads it.

The same pressures have diluted the quality of the "average" science teacher. The widened teaching of science, together with the overall school-population explosion, has created great demand for science teachers. School administrators sometimes face opening day without even a "warm body" for the science class.

Some of the recommendations seek generally approved reforms. Others call for new departures in the approaches of individual teachers and their school systems. A sample:

- Teachers should at least be consulted in the choice of a text. They should have a petty-cash fund (perhaps $50–$100) for minor equipment.
- Special materials should be developed for students who have trouble with reading and writing but who would enjoy using their manual skills in experimental work. A "science truck" could circulate through city streets in summer, giving idle youngsters something constructive to do.
- Those teaching slow students should have their own workshops and could produce a manual of successful methods, possibly during a summer institute.
- Consideration should be given to the creation of an organization, analogous to the college commissions, to meet the needs of school science.

Copies of the report are available from AIP.

PHOTOS BY HEKA

NUCLEAR-PHYSICS HISTORY. Fitting together the pieces during the American Academy conference are, beginning in the foreground, Philip Morrison, Robert Serber, George Uhlenbeck, Lewis Slack, Maurice Goldhaber and Victor F. Weisskopf.

ACROSS DISCIPLINARY LINES. Participants include physicists John A. Wheeler and Hans A. Bethe, historian Martin Klein and sociologist Robert K. Merton.

History Conference Probes Role of Nuclear Theorists

The role of theories and theorists in the development of nuclear physics from about 1930 to about 1950 was the theme of the Second Exploratory Conference on the History of Nuclear Physics held at the American Academy of Arts and Sciences in Brookline, Mass., on 18, 19 May. The 20 invited participants included physicists as well as scholars concerned with the history, sociology and philosophy of science. The conference was part of the joint American Institute of Physics–American Academy project to document and analyze the emergence and growth of nuclear physics as a major research field (PHYSICS TODAY, November, page 71).

Victor F. Weisskopf and I. Bernard Cohen, cochairmen of the AIP–American Academy project advisory committee, opened the conference.