therefore, of the utmost importance to avoid any action which will, by terrestrial contamination, forever jeopardize, or even destroy, the possibility of distinguishing organisms or prebiotic chemical forms which might be discovered, particularly on Mars.

Suitable methods of close-in spectroscopic investigation and upper atmosphere sampling should be developed and used so as to make knowledge available prior to any direct contact, and it is to be hoped that any vehicles which are at all likely to make contact with these surfaces will be biologically sterile and as chemically and biochemically clean as it is possible to make them (*21*).

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Science in the News

Building for Unique Science High School Dedicated in the Bronx

A new building for New York's Bronx High School of Science was dedicated on 27 October. The dedication focuses deserved attention on this unique institution, which provided secondary education for more than 1 in 200 of all persons who received their doctorates in the United States during 1957. Most of the doctoral degrees that have been earned by Bronx High alumni were in the pure sciences and in engineering, according to a study that is being conducted by Samuel Strauss of McKinley High School, Washington, D.C., for the Office of Scientific Personnel, National Academy of Sciences—National Research Council.

An earlier study, made in 1952, determined that approximately 80 percent of the school's graduates are associated with science, mathematics, or science-related professions, and that many alumni are now occupying important posts in universities, scientific and engineering institutions, and private and government laboratories. This record has been achieved in a relatively short span of time, for the school is only 21 years old.

History

The Bronx High School of Science is a school for the gifted. It was established in 1938 by the Board of Education of the City of New York as a public academic high school for boys with a particular interest and ability in science and mathematics. In 1946 the school was opened to girls, who have since that time been admitted in the ratio of one girl to every two boys. The current population of the school is approximately 1800 boys and 900 girls.

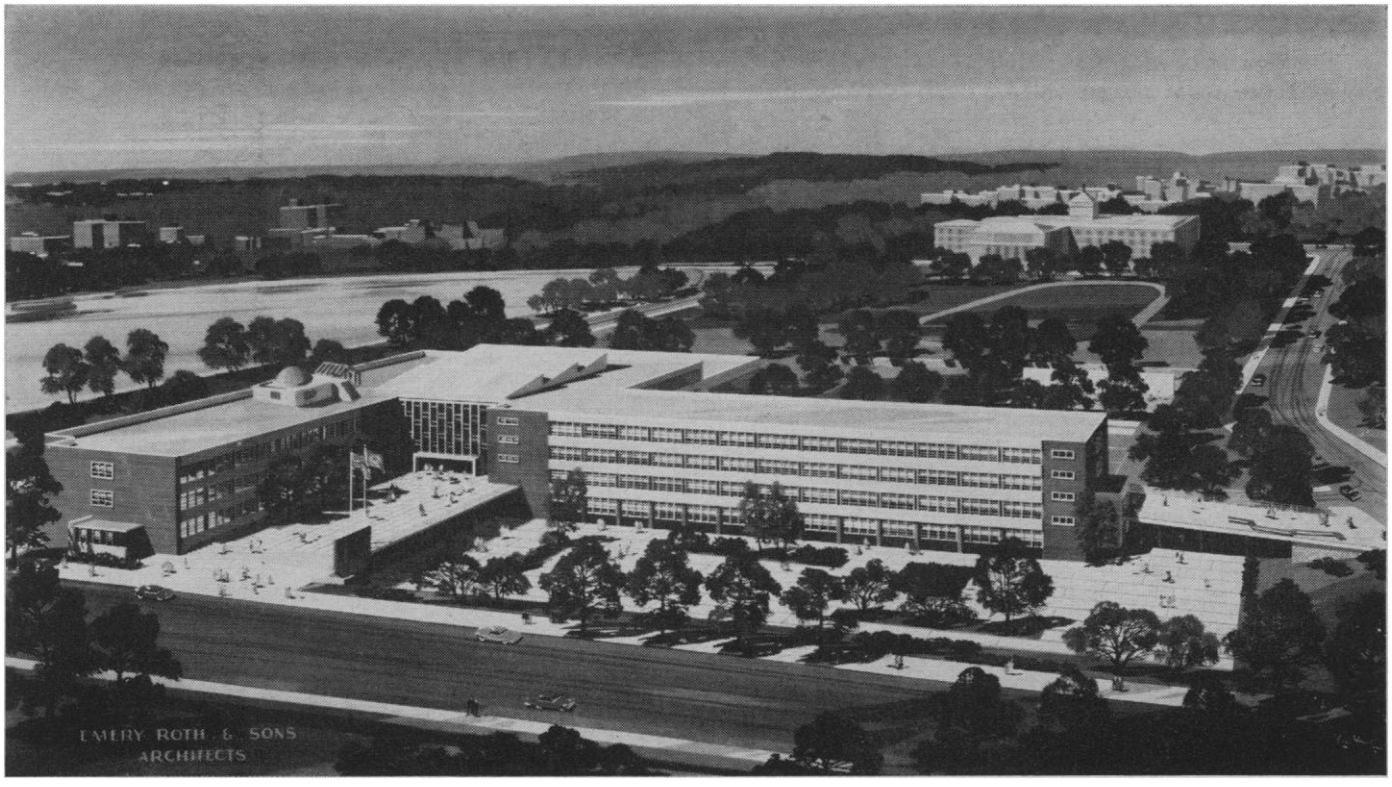
For its first 20 years, the school was headed by Morris Meister, whose portrait hangs in the entrance of the building that was dedicated on Tuesday. Last year Meister resigned to assume the presidency of the newly founded Bronx Community College. He was succeeded as principal by Alexander Taffel, former head of Haaren High School in New York City and a physicist who studied under Isidor I. Rabi and the late Enrico Fermi.

Curriculum and Academic Performance

The students at the Bronx school are selected from applicants from every part of the city of New York on the basis of an entrance examination, as well as on previous scholastic record and achievement. The effect of the selection process is to produce an entering class with a median IQ of 140, achievement in reading and arithmetic about 2 years beyond chronological age, and an aptitude for science and mathematics. The school is harder to get into than many colleges; in 1957, 3900 of New York's superior students applied, and only 750 were accepted.

The curriculum consists of a basic core of required courses, supplemented by a number of elective courses in the areas of the pupil's special interest. Required courses for 4 years at Bronx High are as follows: 3 years of mathematics (most students take more); 5 years of the sciences; 4 years of English; 4 years of social studies; 1 year of mechanical drawing; ½ year of science laboratory techniques; at least 3 years of Latin, Spanish, French, German, or Hebrew; and music, art, and health education. For outstanding students, there are special courses in English, mathematics, physics, biology, and chemistry that lead to college admission with advanced standing.

The achievements of the students in scholarship competitions have been consistently outstanding. At the present time the school holds top place in the nation in the winning of awards in



The new building for the Bronx High School of Science that was dedicated on 27 October.

the Science Talent Search of the Westinghouse Educational Foundation. During the 18 years that this contest has been in existence, the school has provided 21 winners. In the National Merit Scholarship contest, Bronx students have this year won 51 semifinalist positions, more than the number won by any other high school in the United States. The June graduating class of some 750 students earned about 500 scholarships.

Despite the high scholastic achievement, students have the normal sports and extracurricular interests of young people their age. In sports they are at present the New York City champions in tennis, and they make a strong showing in swimming.

It is hardly necessary to mention that the school has a highly competent faculty that is thoroughly trained in subject matter as well as in educational methodology. Many members of the staff are authors of textbooks and professional articles, and there are among them an unusually large number of Ph.D.'s. Last year Taffel told *Time:*

"We do a better job than comprehensive schools do in their honors courses. The teacher is the key; in our school the teacher doesn't have his courses divided so that he has to spend time with slower pupils. He's free to try new things. He can stimulate and become as stimulated as his students; if he's wise, he grows with them."

Time also quoted a teacher as having commented: "It's a privilege to be here; it's constantly exhilarating. The problem is that so many of the kids are brighter than we are. We know darned well our IQ's don't match most of theirs." Another faculty member is reported to have observed: "When you get a bright youngster and focus his interest early, the kid soars like a comet. He gets a five- to ten-year start in professional life."

Unusual Facilities Available

In addition to the usual facilities that one would expect in a high school, the new building has the following special facilities: six elementary and six advanced laboratories in biology, chemistry, and physics; a mathematics laboratory; ten shops and drafting rooms; three photography laboratories; two greenhouses; a planetarium; a radio station; a weather station; an animal room; a home technology laboratory; and four student-project laboratories.

In the accompanying illustration, the dome of the planetarium is visible on the roof of the building. It will be provided with a Spitz projector and will be used to demonstrate certain aspects of astronomy that are taught in connection with some of the advanced physics and advanced mathematics courses.

Special Activities Program Launched

The four project laboratories and the two greenhouses are being used in connection with the creative activities program in science that has recently been established at the school. The purpose of this program is to provide opportunities for highly motivated students to carry out research projects.

At present five research classes are organized in the fields of biology, chemistry, and physics. A teacher supervises the work of some 15 to 25 students in each project laboratory. Typical research projects were carried out during the past year in the following areas: identification of blood types in frogs, absorption of radio phosphorous by *Paramecium*, effect of gibberellin on acquatic plants, effect of ultra-violet light on the mutation rate in *Drosophila*, design of a digital computer, analysis by chromatography, design of Newtonian reflecting telescope with astro-camera, and analysis by electrophoresis.

This work is augmented by a summer-institute program in which—with

support from the National Science Foundation and several private foundations—students are placed in research laboratories throughout the New York and the New England areas, where they gain valuable experience as apprentices.

Conference Spurs Nuclear Energy and Basic Sciences in Pan American Union

At its first meeting last week, the Inter-American Nuclear Energy Commission set the framework for the future activities of South and Central American states in the use of nuclear energy and, more broadly, in the role of science. Representatives of 15 nations took part in the 5-day organizational meeting in Washington which, by means of 11 resolutions, charted the future development of the commission. The resolutions, in addition to establishing the working practices of the group, call for cooperative programs for training, education, and research in the nuclear sciences and for dissemination of information on nuclear energy in Latin America. They also call for a survey of the use of radioisotopes in research in the Americas, symposia on the peaceful applications of nuclear energy, and the elimination of tariff barriers on materials used in scientific training and research.

The commission is an outgrowth of a proposal made by President Eisenhower at a meeting of the presidents of the American states in July 1956. At that time he suggested that the field of atomic energy represented one possible avenue toward closer cooperation among the American republics. At a later meeting, this proposal was given specific form when Dr. Milton Eisenhower suggested the creation of the Inter-American Nuclear Energy Commission. After some delay, the commission was formed as a semiautonomous organization with its own secretariat and with strong ties to the Organization of American States. The relationship, according to a spokesman, is very similar to that between the United Nations and its many specialized agencies.

Basic Science Needs Stressed

Although most of the Central and South American nations are eager to put atomic energy to work as soon as possible, there is general realization, which was evident at the Washington meeting, that the immediate major need is for a cadre of scientific and engineering personnel to train and direct others, in both the national and international programs. Toward this end, the members of the commission considered two possibilities. The first, a single large center for training, education, and research in the nuclear sciences for all of Latin America, was rejected on the grounds that it would be inefficient. "A better alternative," one of the resolution papers states, "appears to be the increased utilization of existing national facilities and the encouragement of worthwhile new endeavors in the various fields of nuclear specialization on a regional, rather than purely national, basis." A resolution to study the latter plan was among the 11 adopted by the commission. Such a cooperative program, the commission directed, should give priority to the following subjects, in the order given: mathematics for nuclear science; basic physics and nuclear physics; nuclear engineering and technology; use of isotopes in scientific research, agriculture, medicine, and industry; health and safety in the use of nuclear materials; and geology and mining of nuclear materials.

The priority list reflects the general view among the delegates that nuclear studies cannot be pursued *in vacuo*, and that a general advancement in all the sciences underlies progress in the nuclear sciences. On this point, J. D. Perkinson, executive secretary of the commission and a former member of the training and education division of this country's Atomic Energy Commission, said: "The secretariat of IANEC and the delegates were consistently concerned during the sessions with the importance of the basic sciences as a foundation for any nuclear program." The other side of the coin, as the secretary pointed out, is that "it is well established that the institution of a national nuclear program has frequently stimulated the improvement of basic science and research."

U.S. Sees Health Gain

At the meeting, which was attended by leading scientists and atomic energy officials of Latin American countries, the United States' delegate, John J. Floberg of the AEC, said that atomic energy, chiefly through the use of radioisotopes, can be expected to make great contributions in the field of health. Work in which radioisotopes are used to study human parasites has been under way for some years under the direction of Marcel Roche, who attended the Washington meeting as president of the Venezuelan delegation.

Because it is expected the commission will develop relationships with other international groups dealing with atomic energy, the meeting was attended by a number of representatives of these organizations, including Sterling Cole of the International Atomic Energy Agency. Others attending as observers were members of the National Academy of Sciences, the United Nations Food and Agricultural Organization, and the Pan American Health Organization.

In addition to representatives of the U.S. and Venezuela, the meeting was attended by representatives of the following countries: Argentina, Bolivia, Brazil, Colombia, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Peru, and Uruguay.

As the last of its resolutions, the commission set 22 August 1960 as the date for its second meeting, to be held at the Pan American Union in Washington, D.C.

In one of the last addresses at the conference, Roche, who was elected vice chairman for the coming year, summarized the work done.

"The general working plan for the coming year has been drafted. The seat of the next Inter-American symposium and the topic of discussion has been selected. Valuable inter-American contacts for cooperation in future atomic energy programs have been established, and in some cases more detailed preliminary agreements have been reached. A working group has been established for the purpose of drafting a coordinated and complete plan for training, education, and research in nuclear sciences in America. The importance of the work of this group cannot be over-emphasized. We all know—and in the present meeting this has been repeatedly stated—that education in all fields is the first need of our Latin America, and that all our efforts are doomed to failure if we do not take vigorous steps to increase our technical capacity and to augment the number of men trained in science in our countries."