gas-fired panels, burning magnesium, and incandescent lamps, are not adequate because they are not hot enough, do not uniformly cover a sufficiently wide area, and are not easily controlled. While reliance will be placed on atomic field trials for final testing of materials against thermal effects, the solar furnace is expected to reduce the time and cost of developing heat-resisting materials.

The installation consists of four principal elements: heliostat, concentrating mirror array, attenuator, and test chamber, which will occupy an area that will be about 125 feet in length by 40 feet in width. At one end of the assembly is the heliostat, a flat mirror 40 by 36 feet, which receives the sun's rays and reflects them a distance of 96 feet upon the concentrating mirror array at the other end of the assembly. An automatic positioning system drives the heliostat and keeps it constantly at the correct angle with the sun. Thus, the directly reflected rays will always illuminate the concentrator, regardless of the time of the day, month, or year.

The concentrating array consists of 180 curved surface mirrors, each 23.5 inches in diameter, which reflect the rays back in the direction of the heliostat, but concentrate them within the target or test chamber, which stands between the heliostat and the concentrating mirror array. Before reaching the target chamber, the concentrated rays pass through the attenuator, a venetion-blind type of shutter which can reduce the intensity of the light when desired.

Finally the sun's rays are focused within the test chamber in a 4-inch diameter beam, representing the concentrated energy reflected from the surface of the heliostat and the concentrating mirror. It is within this concentrated beam that the articles that are to be tested will be exposed. The measuring apparatus, shutters, controls, and laboratory facilities are housed in the test chamber, which is reached by a small elevator platform. Ground for construction of the solar furnace was recently broken and it is expected that the installation will be completed and ready for operation by summer of this year.

Geology for College Teachers

The department of geology at the University of Illinois has announced the first summer institute in geology for college geology teachers to be held at Urbana, from 17 June to 10 Aug. The institute, which will be on "Geologic frontiers: recent concepts and methods in mineralogy and geochemistry, and their application to geology," is supported by the National Science Foundation.

The institute will be conducted by D. M. Henderson and A. F. Hagner of the University of Illinois, and R. M. Garrels of Harvard University, with the assistance of approximately 15 distinguished scientists from throughout the nation. For information and application blanks write to one of the codirectors, D. M. Henderson or A. F. Hagner, Department of Geology, University of Illinois, Urbana, Ill. Applications should be filed *by 1 Apr.*

U.K. Institute for Nuclear Science

The British Government is to set up a national institute for research in nuclear science. Enoch Powell, Financial Secretary to the Treasury, has reported to the House of Commons that the main object of the institute would be the provision of facilities and equipment for research in the nuclear field. He emphasized that the institute would not take over the research now being done in universities with assistance from government funds. Nor will it affect British participation in the international project for common facilities in Geneva. In the government's view, Powell stated, the institute will fill a gap that would otherwise exist in British ability to keep in the forefront of nuclear progress.

Excerpta Medica and Soviet Medicine

As a result of plans initiated by the Public Health Service, National Institutes of Health, U.S. Department of Health, Education, and Welfare, arrangements have recently been completed with the Excerpta Medica Foundation, New York, under which for the first time an extensive review of the Soviet medical literature in all areas of medicine will now be available in the United States. The plan calls for the translation and publication of abstracts of the Soviet medical literature, including reports of work now being done in various cities throughout the U.S.S.R.

The abstracts will be prepared by Soviet specialists, the material being edited and supervised by a permanent editorial committee of 30 Soviet scientists appointed by the Excerpta Medica Foundation in cooperation with the Presidium of the Academy of Medical Sciences of the U.S.S.R. These abstracts will be supplemented by verbatim translations of abstracts of the Soviet literature in specially selected fields. The abstracts will be published under the title *Abstracts of Soviet Medicine* and will appear throughout 1957 as two separate publications: part A, *Basic Medical Sciences,* and part B, *Clinical Medicine,* totaling together some 1300–1400 pages.

U.S. Marriages

Marriages in the United States increased last year, reaching an estimated total of about 1,587,000, compared with 1,542,000 in 1955 and 1,491,000 in 1954, according to Metropolitan Life Insurance Company's statisticians. The rate of marriages was 9.4 per 1000 population (including the Armed Forces overseas), compared with the postwar low of 9.2 per 1000 in 1954.

Most states recorded small increases in marriages, but in two states, Indiana and Oklahoma, there was a pronounced upswing—almost 17 percent in Indiana, and about 11 percent in Oklahoma. The statisticians predict that the annual increase is likely to be small for the balance of this decade, but that after the early 1960's the number of marriages should rise rapidly as the large number of persons born after World War II come of age.

Applications from High Schools Solicited for Traveling Library

The Traveling High School Science Library Program, supported by a grant from the National Science Foundation and administered by the AAAS, is now making plans for the academic year 1957–58. A description of the 1956–57 program and a list of the 200 books in the traveling libraries presently serving 104 senior high schools have been published [*Science* **124,** 1013 (23 Nov. 1956); *Sci. Monthly* **83,** 300 (Dec. 1956)].

During 1957–58 it is hoped that the program will be extended to approximately 300 senior high schools which will receive 50 books at a time in traveling cases. Each school will exchange books with other program schools at intervals of 2 months, so that every school will have had an opportunity to use all 200 books in the traveling library during the year.

The program is intended to increase the interest of high-school students in science, to encourage the choice of careers in science, and to broaden the science and mathematics background of high-school teachers. The program also serves to stimulate the acquisition of well-chosen science books for school and public libraries.

The greatest apparent need for this program is in small and medium-sized high schools in nonmetropolitan localities that lack good community library facilities. The following general criteria will guide the selection of about 300 program schools for next year: (i) the school should have an enrollment of at least 150 but not more than 750 students in the 10th to 12th grades, inclusive; (ii)

good community library services should not be readily accessible to the students at the school; (iii) the school should have a library and employ a school librarian.

The principals of public and private high schools or preparatory schools interested in receiving additional information and application blanks are requested to write immediately to Dr. Hilary J. Deason, American Association for the Advancement of Science, 1515 Massachusetts Ave., NW, Washington 5, D.C. The final date for the receipt of formal applications for the 1957–58 program is *15 May*. Priority of receipt of application will be a factor in school selection.

Thai Dam Dedicated

Thailand's large new irrigation and navigation dam near Chainat, some 100 miles north of Bangkok, was officially dedicated by King Phumiphon and Premier Pibulsonggram on 7 Feb. An $18-million loan from the International Bank for Reconstruction and Development, a United Nations special agency, helped toward the total cost of $58 million, and the U.N. Economic Commission for Asia and the Far East provided technical aid. The Chainat dam will insure a controlled water supply for a rice-growing area the size of Northern Ireland, introduce double-cropping, add some 500,000 tons a year to Thailand's rice exports, and make possible year-round navigation on the central course of the Chao Phya River.

Blakeslee Awards

Entries for the American Heart Association's Howard W. Blakeslee awards for outstanding reporting in the field of heart and blood vessel diseases must be submitted *by 1 May*. The Awards Committee will make its selections from among newspaper and magazine articles, books, radio and television programs, and films published or produced between 1 Mar. 1956 and 28 Feb. 1957.

This is the fifth in a series of Blakeslee awards, each of which carries an honorarium of $500. The number of winners to be selected this year will be determined by the judges. Presentation will be made at a meeting of the American Heart Association to be held in the fall. Entry blanks and rules folders may be obtained from the Association, 44 E. 23 St., New York 10, N.Y.

The Blakeslee awards honor "individuals whose creative efforts in any medium of mass communication are judged to have contributed most to public understanding of progress in research, and in the prevention, care and treatment of heart and circulatory disease." The rules further state that "entries will be judged on the ability of the entrant to project a positive and hopeful viewpoint toward problems of the heart and circulation."

Borazon

The General Electric Company recently announced a new synthetic substance that compares with the diamond in hardness. The substance, borazon, is a boron-nitrogen compound that is more resistant to heat than the diamond is, being able to withstand temperatures of more than 3500°F. The diamond burns up at 1600°F. Borazon was produced by applying pressures of 1 million pounds per square inch and temperatures of 3000°F. Under these conditions the boron-nitrogen compound changes its crystalline form to that of a cube and is therefore called cubic boron nitride. Robert H. Wentworth of the General Electric Research Laboratory in Schenectady, N.Y., discovered Borazon.

TV in Schools

Alexander J. Stoddard, former superintendent of schools in Philadelphia and Los Angeles, urged that all American public schools be equipped with closed-circuit television in order to raise the quality of instruction, overcome the critical shortage of teachers, and provide the necessary funds for substantial increases in teacher salaries, in a report, *Schools for Tomorrow,* published by the Fund for the Advancement of Education. If this were done and an appropriate educational program instituted it would, according to Stoddard, result in a saving of 100,000 teaching positions and more than $500 million in teaching salaries. Stoddard said that no elementary, junior, or senior high school should be built without one or more television studios and closed-circuit apparatus to all parts of the building.

Additional copies of *Schools for Tomorrow* may be obtained without charge from the offices of the Fund, 655 Madison Avenue, New York 21, N.Y.

Ferromagnetic Substances

Ever since the beginning of the century, when Heusler discovered that alloys of copper and manganese, with an addition of aluminum, become ferromagnetics (the Heusler alloys), the preparation of artificially ferromagnetic substances has been of interest both experimentally and theoretically. Recently Raub *et al.* have investigated the magnetic properties of gold-manganese alloys (*Z. Metallkunde* **57**, 9, 1956; *Umschau* **56**, 538, 1956).

Pure gold is diamagnetic—its magnetization at small fields is opposite to the direction of the field. Metallic manganese is paramagnetic (almost temperature independent) and has a lattice constant of 2.58 A, but MnAs and MnSb, with lattice constants 2.85 and 2.89, are ferromagnetic. It seems, therefore, that manganese leads to ferromagnetic material when the distance between the manganese atoms is increased; this also appears to be the case with some of the manganese-gold alloys. It is possible to detect in the gold-manganese system an alloy that is 15 to 23 percent manganese, or approximately the composition of Au_4Mn, which is ferromagnetic.

There exists another phase, AuMn. This is antiferromagnetic; the neighboring domains are magnetized in opposite directions (as one can show directly by neutron diffraction). However, there is still another phase, Au_2Mn, and this seems to indicate that the system consists of a super position of ferromagnetic and antiferromagnetic domains. In the other phases of the manganese-gold system there are mixed crystals with a temperature-dependent paramagnetism and a temperature-independent paramagnetism in the crystals of the type $AuMn_3$.

It is therefore possible in one and the same material, depending on the composition, to produce almost all the various types of magnetism that are known. —K. L.-H.

Edison Children's Book Award

The Thomas Alva Edison Foundation presented its children's book awards for 1956 last month at the National Edison Birthday Celebration dinner, held by the Edison Foundation at the Waldorf-Astoria in New York in honor of the 110th anniversary of Thomas Alva Edison's birth. The occasion marked the inauguration of National Science Youth Day on 11 Feb., henceforth to be an annual event commemorating Edison's birth for the purpose of stimulating a greater interest in science and scientific careers.

The children's book awards are part of the Edison Foundation National Mass Media Awards Program, established in cooperation with 62 national organizations, to encourage mass media productions that (i) interest boys and girls in science, in view of the serious shortage of scientific manpower; (ii) make meaningful the values of the American tradition; and (iii) present ideals and heroes worthy of emulation by children. The $250 award for the best children's science book (for younger children) went to Roy A. Gallant, author, and Lowell