mother cell to the offspring, and commented "When you know the structure of these things (the genes contained in the chromosomes in cell nuclei) you can begin to find out how they pass on characteristics. If you do that, you've gone a long way toward finding out what life is."

All the Nobel laureates are to receive their awards—a recognition certificate, a gold medal, and $40,000—in a ceremony that will take place in Stockholm on 10 December. The King of Sweden, Gustaf VI Adolf, will make the presentation.

NAS Congratulates Soviet Academy

Detlev W. Bronk, president of the U.S. National Academy of Sciences, sent the following congratulatory letter to A. N. Nesmeyanov, president of the U.S.S.R. Academy of Sciences, on 6 October, two days after the launching of Sputnik I.

"On behalf of the National Academy of Sciences of the USA, I wish to congratulate you and your Academy of Science of the USSR for the great achievement of placing an earth satellite in orbit. This is a brilliant contribution to the furtherance of science for which scientists everywhere will be grateful. I had the privilege of conveying in person these congratulations to Academician Blagonravov in Washington on Saturday morning, and will do so again tomorrow to Academician Bardin."

Physicist Denied Passport

The U.S. Court of Appeals for the District of Columbia has ruled in the case of Weldon B. Dayton, physicist of Corning, N.Y., that the Secretary of State may use confidential information in denying passports to people believed to be going abroad to advance the Communist movement. Dayton was accused of being active in Communist-front activities, associating with Communists, and wanting to go abroad "to engage in activities which will advance the Communist movement." It is reported that Dayton wanted to go to India to conduct research with Bernard Peters, a physicist who renounced his American citizenship and left the country to work at the Tata Institute for Fundamental Research in Bombay.

Dayton held that he had the right to confront witnesses who gave information against him. The State Department eventually told him the substance of the charges but would not reveal the identity of the informants, saying that this would compromise investigative sources and endanger national security.

In a 2-to-1 decision, this view was approved by Judge E. Barrett Prettyman and Judge Wilbur K. Miller. Prettyman wrote in his majority opinion that "the community interest makes [the decision] necessary." In a dissent, Judge Charles Fahy stated: "A finding that the denial is in the 'national interest' is too broad when the particular national interest is not broken down to come within the governing criteria." Dayton's attorney, Harry I. Rand, intends to appeal to the Supreme Court.

The appellate court's ruling was just the opposite of that taken in another passport case in November 1955 by District Court Judge Luther Youngdahl. In the case of Leonard Boudin, Youngdahl ruled out the use of secret evidence by the State Department in acting on passport applications. The Government appealed Youngdahl's ruling, but later avoided the issue and granted Boudin a passport when the case was rejected by the Court of Appeals because of a legal technicality.

Kabul Archeology Exhibit

The Museum of Kabul in Afghanistan is to be reorganized with the aid of a mission established by the United Nations Educational, Scientific and Cultural Organization. The museum contains archeological collections considered of first importance in the study of the art and civilizations of Asia.

The UNESCO mission will consist of a specialist from Switzerland, a specialist from France, and a specialist from Syria. It will be headed by M. Jean Gabus of Neuchatel, Switzerland, who is director of the Institute of Ethnology at the University of Neuchatel.

The President Names Killian

James R. Killian, president of Massachusetts Institute of Technology, has been named by President Eisenhower to the newly created post of special assistant to the President for science and technology. He is to take office immediately. The President said:

"This man, who will be aided by a staff of scientists and a strong advisory group of outstanding experts reporting to him and to me, will have the active responsibility of helping me follow through on the program that I am . . . outlining. . . . Through him, I intend to be assured that the entire program is carried forward in closely integrated fashion, and that such things as alleged interservice competition or insufficient use of overtime shall not be allowed to create . . . harm to our scientific and development program.

"Moreover, Dr. Killian will see to it that those projects which experts judge have the highest potential shall advance with the utmost possible speed. He will make sure that our best talent and the full necessary resources are applied on certain high-priority top-secret items. . . ."

In the television address on 7 November in which he announced Killian's appointment, the President discussed the U.S. missiles program and reported that this country had solved the problem of bringing a missile back from outer space. He also announced changes in the Defense Department to give missile development priority and to assure that "any new missile program . . . will, whenever practicable, be put under a single manager and administered without regard to the separate services." In conclusion, the President said:

"Although for tonight's purpose I stress the influence of science on defense, I am not forgetting that there is much more to science than its function in strengthening our defense, and much more to our defense than the part played by science. The peaceful contributions of science . . . are the most important products of the conquest of nature's secrets." . . .

U.S.–U.K. Conference on Controlled Thermonuclear Research

Major phases of research in the field of controlled thermonuclear reactions in the United Kingdom and the United States were reported upon and discussed recently in a joint conference of representatives of the two nations at Princeton University. The conference was arranged by the U.S. Atomic Energy Commission and the U.K. Atomic Energy Authority.

Several essentially distinct approaches to solving the problems of controlled thermonuclear reactions are being pursued in each of the two countries. Some of the experimental devices utilized have, for some months, been yielding substantial numbers of neutrons from the interior gas; in other machines there has been confinement of very hot gases for a small fraction of a second.

There are two main conditions necessary for the attainment of power-producing thermonuclear reactions. First, heavy hydrogen must be heated to a temperature of at least 100 million degrees centigrade. Second, this hot gas must be confined within a container for an appreciable fraction of a second. When the temperature reaches several million degrees centigrade, neutrons will be emitted in large numbers.

At this lower temperature, it is a delicate and difficult matter to distinguish

the neutrons produced by thermonuclear processes from those arising from other processes that are of no particular interest for controlled thermonuclear reactions. Since all neutrons are similar, their mode of origin has to be established by elaborate experiments. Such experiments are in progress in both countries.

Reports at the meeting in Princeton on the temperatures reached in the controlled thermonuclear experiments suggest that neutrons from thermonuclear reactions have been achieved, but more experimental work will be necessary to establish this as a fact. Realization of the objective of producing thermonuclear neutrons, if definitely established, would be an important step in the long-range effort to develop thermonuclear reactors for the production of economic power.

Development of Food Irradiation Reactor Suspended

The Atomic Energy Commission has suspended activities directed toward the design and construction of the Food Irradiation Reactor (FIR) and will terminate its contract with Kaiser Engineers, Oakland, Calif., for development work on this project. The reactor was being developed for use by the Army Quartermaster Corps in food irradiation experiments and other projects at the U.S. Army Ionizing Radiation Center, to be built at Stockton, Calif.

The Department of Defense has recently indicated an interest in the investigation of alternative sources of gamma irradiation, such as long-lived radioisotopes or spent reactor fuel elements. Pending the results of this investigation, the commission has suspended development work on the FIR.

Scripps Institution's Downwind Expedition

Two ships from the University of California's Scripps Institution of Oceanography have sailed on a 4½-month voyage to conduct studies in connection with the International Geophysical Year. The trip, called the Downwind Expedition, will take the research vessels *Horizon* and *Spencer F. Baird* to the southeast Pacific Ocean, scientifically one of the least known areas in the world. Henry W. Menard, Jr., associate professor of geology at the Scripps Institution, is scientific leader of the expedition, whose ports of call will include Tahiti; Pitcairn Island, settled by the *Bounty* mutineers; Robinson Crusoe's island, Juan Fernandez, off the coast of Chili; the South American ports of Valparaiso, Chile, and Callao, Peru; and Easter Island, noted for its mysterious stone statues.

However, only a few days will be spent in port, for the primary purpose of the expedition is to study how the deep waters of the ocean move. Practically nothing is known about deep currents because it is difficult and expensive to make measurements below the sea's surface, and effective methods have only recently been developed. In fact, so little is known about the circulation of the deep ocean water that nobody knows whether it takes 100 years or 10,000 for this water to travel from the Antarctic to the Equator and back again.

The expedition will also provide data for other IGY studies in the course of the more than 38,000-mile voyage. Twenty-five seismic stations will be occupied as part of the IGY seismological program. Samples for radiocarbon analysis of ocean waters will be taken from five locations. Such samples "date" ocean water. Air and water samples will be collected for analysis of carbon dioxide content.

In addition, the expedition's scientists will make a profile of the ocean floor along the line of 130° west longitude from the latitude of San Diego, Calif., to approximately 50° south. Several dredge hauls will be made to collect samples that will help determine the mineral resources of the sea floor. The atolls of the Tuamotu Archipelago will be studied.

One of the primary projects of the voyage will be investigation of the broad rises in the southeastern Pacific. Such rises are characteristic of all the oceans except the North Pacific, where most of the Scripps expeditions have been conducted. Surveys will also be made of the narrow, deep South American Trench just off the coast of Chile and Peru. The slope from the bottom of this trench to the crests of the adjacent Andes is the steepest in the world.

Scientists interested in joining the expedition at Valparaiso or Callao, or in having special observations or collections made, should communicate with Dr. Roger Revelle, University of California, Scripps Institution of Oceanography, La Jolla, Calif.

Golden Anniversary of the Pasteur Institute in India

This year marks the 50th anniversary of the Pasteur Institute in Kasauli, India. A souvenir volume published to celebrate the golden jubilee contains a tribute by its present director, N. Veeraraghaven, to the men who have guided the organization's development over the past half-century. Another section of the commemorative volume is devoted to a description of the institute's research activities, which have included significant work in the following areas: rabies, influenza, *Q*-fever, cholera, typhoid fever, diphtheria, fusospirochaetosis, serology of syphilis, tropical eosinophilia, malaria, leishmaniasis, venoms, and entomology.

Changes in vaccine for rabies and methods of production over the years are briefly described, and especial reference is made to the painstaking record-keeping, instituted by the first director and still maintained, of the history of hundreds of patients bitten by rabid animals, but untreated, considered in parallel with the results of treatment of persons bitten by the same animals. This continuing investigation is considered to be a unique record.

The last section is the scientific report of the institute for the year 1956. It describes an experimental evaluation of recent advances in antirabies treatment, an assessment of the value of 5 percent simple vaccine in human treatment, and studies on the cultivation of the rabies virus *in vitro*.

Postdoctoral Research Associateships

The National Academy of Sciences–National Research Council has announced that Postdoctoral Resident Research Associateships again will be offered for 1958–59 by the Argonne National Laboratory, the National Bureau of Standards, the Naval Research Laboratory, and the Oak Ridge National Laboratory. The associateships are tenable at the Argonne National Laboratory in Lemont, Ill.; at the Washington, D.C., and Denver, Colo., laboratories of the National Bureau of Standards; at the Naval Research Laboratory in Washington, D.C.; and at the Oak Ridge National Laboratory in Oak Ridge, Tenn.

These associateships have been established to provide young scientists of unusual ability with an opportunity for advanced training in basic research in the general areas of the biological, physical, and mathematical sciences. In addition, research associateships in visual psychophysics and engineering psychology are also available.

Applicants must be citizens of the United States. They also must produce evidence of training, in one of the listed fields, equivalent to that represented by the Ph.D. or Sc.D. degree and must have demonstrated superior ability for creative research. The stipend for these associateships is $7035 a year.

Application materials may be secured by writing to Fellowship Office, National Academy of Sciences–National Research