including, for example, synthetic fibers, plastics, synthetic rubber, and agricultural chemicals.

Considering the dynamic nature of the chemical industry, the importance to a company such as Du Pont of an efficiently functioning and well-administered Chemical Department can hardly be overemphasized. In contributing to such a department, Dr. Coolidge set exacting standards for those reporting to him. They were, however, less exacting than the standards he set for himself. His work days as a matter of routine embraced all his waking hours, and even on days when the office was closed, his bulging brief case demanded time from his leisure hours for "home work."

The exacting standards he set for those under him were accompanied by three modifying attributes that made him well liked by his staff. The first was an ability to make clear exactly what he wanted done. The second was a very genuine liking, thoughtfulness, and respect for his associates. The third was an unusual degree of open-mindedness, and an intense desire to consider all sides of a question through complete frankness in discussion before making a decision.

Shortly before Dr. Coolidge became director of the Chemical Department, he became chairman of the Du Pont Company's Committee on Fellowships and Grants, the organization in charge of the company's program of aid to colleges and universities to promote the teaching of chemistry and an interest in research as a career. During his chairmanship the schedule of academic aid was considerably broadened.

It was a tragic thing, for Du Pont and for the chemical industry, that Dr. Coolidge survived for only so short a period as two years his designation as head of the Chemical Department. It was no less tragic for the community in which he lived, for he was active in welfare work. He was a director of the Wilmington General Hospital and the Family Society of New Castle County, and he served each as president for two terms. And he was, a few months before his death, appointed to the executive committee of the United Community Fund of Northern Delaware.

Dr. Coolidge was an enthusiastic week-end golfer; his schedule afforded time for no more. He played an occasional game of bridge, and was prone to spend his vacations in ocean travel.

He was born in East Hartford, Connecticut, but moved to Colorado in his boyhood. He was graduated from Boulder High School in 1915, studied for two years at the University of Colorado, and then moved to The Ohio State University, where he received the B.A., M.S., and Ph.D. degrees in 1920, 1921, and 1923, respectively. It was at this institution that he met Edith Hutcheson, who became his wife. When they met he was a laboratory assistant and she was taking a course in organic chemistry.

Cole Coolidge can ill be spared by those with whom he was associated, and their number is large. Those of us who claimed his friendship feel an aching sense of personal loss.

News and Notes

Resume of Fourth Alaska Science Conference

THE Fourth Alaska Science Conference, sponsored by the Alaska Division, AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, was held in Juneau, Alaska, Sept. 28–Oct. 3, 1953. One hundred and fifty-nine registrants from Alaska, Canada, England, and the United States, as well as many interested Juneau residents, participated in the 21 scientific sessions of agriculture, biological sciences, engineering, mining, aviaton, fisheries, forestry, geology, medicine, public health, physical sciences, social sciences, and 3 general sessions.

Speakers and their subjects for the general evening sessions were L. R. Blinks, director of Hopkins Marine Station, Pacific Grove, California: "Photosynthesis in the Ocean"; C. T. Elvey, director of the Geophysical Institute, University of Alaska, and retiring president of the Alaska Division: "Solar Energy"; Maynard Miller, University of Cambridge, England, who showed movies of the Juneau Ice Cap Project; Sir Charles Normand, meteorologist of Oxford, England: "Ozone and Upper Air Conditions"; and Raymond F. Taylor, forester-in-charge of the Alaska Forest Research Center, Juneau: "The Role of Technical Forestry in Developing an Alaskan Resource."

One of the highlights of the Conference was a symposium on Alaskan biogeography, conducted by Robert F. Scott of the biological sciences section, which culminated in a series of papers devoted to the involved and interrelated problems of plant and animal distribution facing biologists in Alaska. In both formal and informal discussions, 4 basic points were emphasized, namely, the particular significance of distributional peculiarities in the Alaskan Region; the importance of geological history in interpreting distributional data; the mutual assistance resulting from interdisciplinary discussion; and, as one biologist put it, the fact in describing many distributional oddities such terms as "rare," and "endemic" could be applied more appropriately to the collector than to the species studied.

The variety and scope of current Alaskan research were illustrated by the biological discussions; specialists in many fields of biology found themselves comparing notes with anthropologists, paleontologists, and geologists. One of the most stimulating presentations

at the session was an up-to-date review of Pleistocene geological events in Alaska, which included the latest thinking on the subject of a Bering Straits land bridge.

At the 3 sessions on fisheries, 14 reports and one round-table discussion were offered by Pacific Coast research workers in the fields of marine and freshwater fishery biology, oceanography, and fishery technology. Highlights of the reports and discussions indicated a greater need than ever for close collaboration of the fishery sciences and investigators if the conservation problems of the Alaska fisheries are to be solved.

Among the important lines of research discussed were the differential productivity of red salmon spawning grounds in the Bristol Bay, comprehensive studies of the life cycle of red salmon in the Nushagak River, quantitative measurements of salinity in an intertidal spawning area of pink salmon, migration and catch composition studies of sablefish in Alaska, relation of new techniques in oceanography to fishery biological research, and new studies of the species, distribution, and habitat problems of the freshwater sport fisheries in Alaska.

Confirmation of the Tanana Valley as the Territory's largest accessible potential agricultural area was disclosed in the agricultural sessions. Of 332,000 acres surveyed in the past 5 years, 166,000 acres are suited for tillage practices. This nearly exceeds by 3 times the 60,000 to 70,000 acres of tillable land found so far in the Matanuska-Anchorage region.

Food production in Alaska is losing ground, agreed savants discussing agricultural development in the Territory. New developments that have resulted from the joint United States Department of Agriculture–University of Alaska research program cannot be fully exploited because of slow farm development. Don Irwin, director of Alaska's Agricultural Experiment Station, pointed out that the land laws under which Alaska's farmland is distributed to private ownership are outmoded and no longer accomplish their purpose. Hugh Johnson, economist with the Experiment Station, cited a lack of venture capital as another obstacle to farm development.

The sessions of the section on medicine gave emphasis ranging from various clinical aspects of medicine to broader fields of public health. One clinical paper, "The Treatment of the Migraine Syndrome," outlined a new form of therapy with clinical results. The tuberculosis problem in Alaska, undoubtedly the greatest public health menace in the Territory, was thoroughly presented, and brought into focus the total needs that must be met in order to get the problem under control. Two papers brought out certain clinical aspects of medicine with emphasis on the native peoples. The effects of hypnotics and drugs on natives were presented in one, while in another paper eye diseases peculiar to native children were reviewed. Considerable group interest was shown in the papers of Alaska's mental health as presented from the viewpoint of a psychologist. This interest manifested itself through actions taken by the section that the Division should make recommendations for improving legislation to correct the undesirable conditions. Two other actions resulted from papers presented in this section, namely, that an intelligence center for epidemics be established in Alaska, and that prompt action be taken by territorial authorities to control the outbreaks of distemper along the Arctic coast, where there has been an epidemic outbreak of the disease.

The engineering and geology sessions reviewed many of the problems peculiar to construction in the far north, as well as discussing economic factors affecting mine development in Alaska. The physical sciences sessions brought out many important results of the auroral research currently carried on at the Geophysical Institute.

The outstanding social event of the Conference was an All-Alaska seafood banquet which featured dozens of dishes of Alaskan origin. Several geological field trips, as well as trips to commercial firms such as the Alaska Plywood Corporation, were enjoyed by a number of the conference participants.

Officers for the year 1953–54 elected at the annual meeting are: president, Hugh A. Johnson, Alaska Agricultural Experiment Station, Palmer; vice president, E. K. Day, Arctic Health Research Center, Anchorage; secretary, Troy L. Péwé, United States Geological Survey, Fairbanks. They replace C. T. Elvey, Geophysical Institute, College; Ivar Skarland, department of anthropology, University of Alaska, College; and Dorothy Jean Thompson, Geophysical Institute, College. The Fifth Alaska Science Conference is scheduled to be held in Anchorage in 1954.

DOROTHY JEAN THOMPSON
Secretary

Geophysical Institute
University of Alaska

Science News

Evidence showing that there were two waves of **Eskimo migration** from Alaska to Greenland across the wastes of the Canadian Arctic was found on Cornwallis Island, north of Hudson Bay, last summer by Henry B. Collins of the Smithsonian Institution. By digging below the level of the stone and bone artifacts of the relatively recent Thule Eskimo migration, Dr. Collins and his assistant, William L. Taylor, discovered delicately fashioned primitive tools belonging to people of the Dorset culture. The fate of these Eskimos is unknown, but a long interval evidently separated the two migrations. An exact dating of the early layer has not been made yet. The excavations were sponsored jointly by the Smithsonian and the National Museum of Canada.

Albert Einstein has revised his **generalized theory of gravitation,** which aims at a complete description of the physical universe by a single theory. In the previous version, published a year ago, Einstein out-

lined a method for choosing a particular set of equations based on their "strength;" however, he made an error in counting the number of significant, or applicable, equations. This is corrected in his latest revision.

Just as in 1905 his restricted theory of relativity pointed to the equivalence of mass and energy, a prediction that was vividly demonstrated nearly 40 years later by the discovery of nuclear fission, so has he now tried mathematically to join gravitational and electromagnetic forces; these, he believes, are also simply two different manifestations of the unified cosmic field. Development of a single theory to explain both gravitational and electromagnetic forces has been a major goal of physicists since about 1920. Mathematical difficulties have so far prevented experimental tests of the revised theory. Einstein believes, however, that the theory will eventually yield an explanation of the "atomic character of energy."

Serge A. Korff of New York University has been appointed reporter for cosmic rays on the U.S. National Committee that is developing a program for the **International Geophysical Year.** The IGY, which is to run from August, 1957, to December, 1958, will be a period of planned, concentrated investigations conducted by scientists throughout the world. Geophysical years are established every 25 years to amass data in such fields as meteorology, oceanography, terrestrial physics, and astronomy, in which international cooperation is essential.

At a recent meeting of the National Committee in Washington Dr. Korff presented a report on the suggested U.S. program of cosmic ray observations to be made during the International Geophysical Year. His recommendations, together with those to be made in other scientific fields, will be transmitted to the International Council of Scientific Unions, the agency that plans the IGY. The U.S. National Committee is a National Research Council body responsible for American contributions to IGY planning. Dr. Korff, professor of physics at NYU's College of Engineering and a vice president of the Explorers Club, has been a leader in cosmic ray research for the last 25 years. Last summer he led an Alaskan expedition that established a cosmic ray observatory atop Mt. Wrangell, a 14,006-foot dormant volcano. He has also established high-altitude stations for cosmic ray studies in the Andes.

The plaque method of growing animal viruses on single-celled layers of tissue cultures has been extended successfully to the **poliomyelitis virus** by biologists of the California Institute of Technology. The work was done by Renato Dulbecco, associate professor of biology, and Marguerite M. P. Vogt, research fellow in biology. First applying the technique to western equine encephalomyelitis virus, they then extended it to polio virus and as a consequence were able to isolate for the first time genetically pure strains of the three known types of polio virus. This makes intensive study of the development and hereditary properties of such viruses possible. The technique promises also to accelerate fundamental research in animal virology because it is highly accurate and less laborious to use than other methods.

Archaeological teams, working ahead of huge ditching machines that are completing a new 770-mile pipeline for the El Paso Natural Gas Company, have unearthed a profile of **Pueblo Indian history and culture.** Their finds have confirmed the theory that these people reached a high standard of civilization and lived in great numbers in the Southwest long before the coming of the white man. Jesse L. Nusbaum, senior archaeologist for the Park Service and consulting archaeologist for the Department of the Interior, was assigned to explore the entire route of the line. The Company hired five other archaeologists to assist him. Dr. Nusbaum was given authority to reroute the gas line around any site that could not be investigated in a reasonable length of time.

With the line almost complete and the archaeologists now in the final stages of their work, 170 sites have been unearthed. Practically every item taken from the buried ruins has served to confirm or refute some previously held theory on Pueblo civilization. All material excavated in New Mexico will go to the Laboratory of Anthropology of the Museum of New Mexico in Santa Fe. Material found in Arizona will be put in the Museum of Northern Arizona in Flagstaff.

President Eisenhower has recommended to Congress that the government spend $2,014,200,000 on scientific **research and development during the fiscal year 1955.** This is a drop of $113,000,000 from the amount estimated to be spent in the year ending June 30, 1954. For the first time, the budget included a special section on "Research and Development." A heavy crackdown on the construction of research facilities is responsible for most of the recommended cuts, with the military taking the biggest loss both in this and in the funds to conduct research. Even so, two-thirds of the government's research and development moneys, or a total of $1,350,000,000, will be spent by the Department of Defense. Another 13 percent of the proposed two billion dollars budgeted for research and development goes to the Atomic Energy Commission, which with the Navy not only has launched its first atomic submarine, but also has announced plans for launching during the coming fiscal year a second atomic submarine of different design. President Eisenhower proposed that the AEC spend on research $261,300,000 in the fiscal year 1955, a drop of more than ten million dollars from 1954.

One of the largest increases recommended for any scientific agency of the government during fiscal 1955 went to the National Bureau of Standards—$8,115,000 compared to $6,440,000 in 1954. Of this, a little over one million is for an increase in research and testing facilities. The proposed increase is in line with recommendations made last fall by a committee of sci-

entists, headed by Mervin J. Kelly of Bell Telephone Laboratories, that previous fund cuts be restored and augmented. Newest entry in the research and development field for the government is the President's Advisory Committee on Weather Control, given $100,000 for its first full year of operation. The committee, after studying the effects of cloud seeding efforts in making rain, will make recommendations on what weather control laws, if any, should be enacted by Congress.

A television camera has been trained into the eyepiece of a microscope to provide accurate and quick counts of small particles such as blood cells, bacterial cultures, or grains in photographic emulsions. To perfect the device, called a **sanguinometer,** electronic specialists at the David Sarnoff Research Center of the Radio Corporation of America, Princeton, N.J., collaborated with scientists at the Sloan-Kettering Institute in New York City. The new equipment can, for instance, make several blood counts and average them out for a true figure in the time that it takes a technician to make one count that may be as much as 20 percent off.

A condensed report by Evelyn Wagner of a **survey of science writers** has just been released by the University of Michigan. This survey was designed not to prove anything *a priori,* but rather to gather opinions on general questions pertinent to the subject. Some 100 questionnaires were mailed to science editors of newspapers, popular magazines, and technical journals, and to the editors of scientific industrial publications. Approximately half of the questionnaires were sent to each of two groups arbitrarily termed "popular writers" and "technical writers." Seventy-one questionnaires were returned, resulting in the following general conclusions:

(1) Scientists do not write well enough to communicate their work to the general public, and it should not necessarily be expected of them; a good journalist, preferably with a scientific bent, is the best possible link between scientist and layman.

(2) Journalists are too often guilty of allowing inaccuracies and misinterpretations to creep into their science-writing; the errors that occur are more often errors of evaluating significance or application than of presentation.

(3) A certain antagonism exists between scientists and journalists. Scientists are not satisfied with the transcriptions of their work and frequently resent the attempts to popularize science. Journalists feel that scientists are often hard to deal with because they are overly insistent upon hair-splitting accuracy.

(4) Technical language is not directly translatable into ordinary language, but must be illustrated by comparison to the very ordinary. In this process, a certain amount of the precise meaning and accuracy of the technical term must be sacrificed. The fine qualifications of scientific terms are, however, useful and necessary only to scientists.

(5) There is unquestionably a need for good science writers: to give the underlying principles and methods of science palpable significance for the nonscientist; to succeed in transferring a visual conception of the connection between scientific research and the products that people use; to translate some of the discoveries in basic, theoretical research into understandable terms and point out some of their possible implications.

(6) Competence in journalism and an interest in science are the only two essentials of a good science writer. The scientific journalist must guard against becoming so familiar with technical terms that he forgets they are not generally familiar.

Scientists in the News

Marvin Carmack, professor at the University of Pennsylvania and consultant to the Los Alamos Scientific Laboratory and to Du Pont, has been appointed professor of chemistry at Indiana University.

David W. Chaney has been appointed assistant director of research for The Chemstrand Corporation.

The Cigar Manufacturers Association of America and the Cigar Institute have awarded **E. E. Clayton,** tobacco pathologist at the Plant Industry Station of the U.S. Department of Agriculture, a plaque and a certificate "for his outstanding research in the development of disease-resistant strains of leaf tobacco."

Certificates of Appreciation of the Department of the Army have been awarded to **G. Robert Coatney** of the Laboratory of Tropical Diseases, National Microbiological Institute, U.S. Public Health Service, and **Ralph Jones, Jr.,** assistant professor of research medicine at the University of Pennsylvania Medical School. The physicians were honored for research work in connection with the development and testing of primaquine, an antimalarial drug.

Watson Davis, director of Science Service, has received a Bausch & Lomb award for significant achievement in the field of science education. The presentation, in the form of an inscribed binocular, was made at the annual dinner of the Washington Academy of Sciences.

Paul H. Emmett, senior fellow of the Mellon Institute of Industrial Research, won the 1953 Pittsburgh Award of the American Chemical Society's Pittsburgh Section. He was cited for distinguished service to chemistry and to the community as a research scientist, lecturer, educator, and inspiration to younger chemists. Dr. Emmett, who was a division chief in the World War II atom bomb project at Columbia University and who before that was head of the Department of Chemical Engineering in The Johns Hopkins University, is internationally recognized for his extensive research on the adsorption of gases and on the use of catalysts.

Douglas H. Ewing has been named director of a newly-formed Physical and Chemical Research Laboratory of the Research Department, Radio Corpora-

tion of America Laboratories Division, the headquarters of which are at the David Sarnoff Research Center, Princeton. Dr. Ewing has been director of Research Services for the Division.

Rhodes W. Fairbridge of the University of Western Australia, Nedlands, is visiting associate professor of geology at the University of Illinois for the current academic year. He is teaching courses in structural and tectonic geology and in petroleum geology.

On Jan. 1 **Robert Gaunt,** Director of Endocrine Research, Ciba Pharmaceutical Products, Inc., Summit, N.J., became chairman of the Advisory Committee which administers the work of the Macrobiology Division. The committee, formed last year, has a rotating chairmanship, with each of three members serving in turn for a one-year term. Dr. Gaunt succeeded **Albert Plummer** who served as chairman of the group during its initial year.

Alfred N. Goldsmith, a co-founder of the Institute of Radio Engineers and its editor since that date, has been awarded the Institute's Founders Award "for outstanding contributions to the radio engineering profession through wise and courageous leadership in the planning and administration of technical developments which have greatly increased the impact of electronics on the public welfare."

At a recent meeting of the American Chemical Society's California Section, **John G. Kirkwood,** chairman of the Department of Chemistry, Yale University, received the Gilbert Newton Lewis Medal in recognition of his research on the chemical forces between molecules and his clarification of the structure of liquids and the behavior of proteins. **Donald J. Cram** of the University of California, Los Angeles, was presented with the California Section Award, conferred annually on a chemist under 40 who has done his major work in one or more of the 11 Western states; Dr. Cram's chief contributions have been in the fields of chemical agents produced by molds and the effects on a chemical's properties of changes in its atomic arrangement.

There have been two appointments to the University of Maryland Physics Department faculty during the past year. **John S. Toll,** previously at Princeton University, was named professor and head of the department. **S. Fred Singer,** formerly with the London branch of the Office of Naval Research, is now an associate professor.

Education

The **Biological Laboratory at Cold Spring Harbor** is offering two specialized summer courses, designed to acquaint research workers with the most important techniques used in bacterial virus research and bacterial genetics. The course on Bacterial Viruses will be held from June 21 to July 10, with Mark H. Adams of New York University in charge; and Bacterial Genetics will be conducted from July 14 to August 3 by E. M. Witkin, V. Bryson, M. Demerec, and staff. A limited number of fellowships covering part of the tuition fees are available for graduate students. Information may be obtained from the Biological Laboratory, Cold Spring Harbor, N.Y.

The **Department of Biological Sciences of Loyola University** of Chicago announces the completion of a new microbiological laboratory to be directed by Frank E. Halleck. The laboratory contains most of the modern equipment and apparatus utilized in microbiological and chemical technique, including an electron microscope. The formal opening will take place Feb. 10, when there will be an exhibit of new scientific equipment manufactured by leading apparatus companies. The department cordially invites anyone who is interested to visit the laboratory and see the exhibits.

In conjunction with the new laboratory, a new curriculum is being offered to students who wish to become professional microbiologists. The curriculum will contain courses that will prepare the student for industrial, medical, and academic research positions. Later, courses will be given that will allow the students to take advanced degrees in the fields of microbial biochemistry.

Howard Hughes, west coast industrialist, has announced the establishment of the **Howard Hughes Medical Institute,** a nonprofit charitable organization incorporated in Delaware that will provide millions of dollars for medical research. Mr. Hughes' initial donation consists of a substantial part of the Hughes Aircraft Company. The project represents many years of planning. Three years ago Mr. Hughes created a program of medical research scholarships and fellowships in anticipation of staffing his new institute.

The Department of Zoology at Columbia University has announced that the **Jesup Lecture Series** is being given this year by Jacques Monod of the Institut Pasteur, Paris. His subject is "Some Aspects of Cellular Growth," and the lecture dates are Feb. 3, 5, 8, 10, 12, 15, 17, and 19.

The **Oak Ridge School of Reactor Technology,** Oak Ridge, Tenn., is now accepting applications for the 1954–55 session. Applications for the class beginning in September *must be submitted by Mar. 15.* Approximately 80 candidates will be selected by the Atomic Energy Commission's Admissions Committee. Students eligible for the 50-week graduate course must hold a bachelor's degree or higher in chemistry, engineering, metallurgy, physics, or engineering-physics. The School is a part of Oak Ridge National Laboratory, which is operated by Union Carbide and Carbon Corporation for the Atomic Energy Commission.

The **University of Minnesota Lake Itasca Forestry**

and Biological Station reports that the 1954 Summer Biology Session will be shifted to the period, June 14 to July 17. This change is expected to allow biological field work at the height of the season; it also permits the addition of ornithological work to the station's program. Joseph Hickey of the University of Wisconsin will lead classes in this field. Other staff members, besides a group of University of Minnesota men, include Alvah Peterson of Ohio State University, who will conduct courses in field entomology and immature insects, and Francis Drouet from the Chicago Museum of Natural History, who will teach algology. Courses given by the University of Minnesota staff include limnology, plant ecology, field mycology, and animal ecology. Detailed information can be obtained from the Dean of Summer Sessions, 966 Johnston Hall, University of Minnesota, Minneapolis 14.

A new $2,600,000 science building is being constructed at **Western Illinois State College,** Macomb. The building will house biology, physics, chemistry, geography and geology, and visual education.

Grants, Fellowships, and Awards

The Albert and Mary Lasker Foundation have announced the fifth annual **Albert Lasker Awards for Medical Journalism.** All newspapermen and magazine writers who have written medical or health articles during 1953 are eligible to compete. *The deadline for entries is Feb. 15.* The awards consist of $500 each, a citation, and a statuette of the Winged Victory of Samothrace. They will be presented to the writers who have produced the best articles, series of articles, editorials, or columns dealing with the improvement of public health or the prolongation of life through medical research or public health programs. The Nieman Foundation for Journalism at Harvard University will continue to administer the Awards. Entry blanks and information may be obtained from the Nieman Foundation, 44 Holyoke House, Cambridge 38, Mass.

The **American Academy of Arts and Sciences** has made the following research grants:

From the Permanent Science Fund

Harvard University. I. B. Cohen, Dept. of History of Science. Development of a guide to the history of American science, $950.

Biblioteca y Museo de Sonora, Hermosillo, Mexico. R. J. Drake, Laboratory of Conchology. Conchological and ethnoconchological research, $300.

Reed College, Portland, Ore. L. H. Kleinholtz, Dept. of Biology. Chemical nature of the reflecting pigments in arthropod eyes, $1455.

University of Wisconsin. N. O. Lurie, Dept. of Anthropology and Sociology. Developing and testing theories of cultural change and cultural stability with special reference to the Winnebago Indians, $1500.

Harvard University. R. E. Schultes, Botanical Museum. Amazonian flora of Colombia, $300.

University of Pittsburgh. E. B. Spiess, Dept. of Biological Sciences. Physiological aspects of population genetics in *Drosophila persimilis,* $1000.

From the Rumford Fund

State College of Washington. D. S. Farner, Dept. of Zoology. Purchase of equipment to be used in the study of incubation and body temperatures of incubating yellow-eyed penguins.

New York Botanical Garden. W. J. Robbins, Director. Purchase of a Beckman spectrophotometer for physiological research involving the employment of light and heat.

The Yale University Graduate School has announced the **American Cancer Society Fellowships in Biometry and Epidemiology** for 1954–55.

Predoctoral fellowships. Applicants must possess the B.A. or B.S. degree and must have a knowledge of biology, chemistry, mathematics and physics. They are expected to enter the Graduate School as candidates for the Ph.D. degree and they will be given training in one or more fields of biology as well as statistics. These fellowships are awarded for a period of three years, but may be terminated at any time if the candidate fails to meet the standards of the University. Stipends will be $2000 per year. Additional funds may be available for students with dependents.

Postdoctoral fellowships. These fellowships are intended for young men and women embarking upon an investigative career and also for more mature investigators desiring to extend their fields of competence. Candidates must be citizens of the United States who possess the M.D., Ph.D., or Sc.D. degree. They are expected to carry out research and will be given training in biometry, biostatistics, and such other subjects as the University may deem necessary. Fellowships are awarded for periods of one year and may be renewed for two additional years. The stipends will range from $3000 to $4500.

For further information, write to Prof. E. Cuyler Hammond, Director of Graduate Studies in Biometry, 51 Hillhouse Ave., Yale University, New Haven, Conn. Application blanks for predoctoral fellowships may be obtained from the Dean of the Graduate School, Yale University, New Haven, Conn. *Applications for both types of fellowships should be mailed by Feb. 28.*

The **College of Medicine at New York City** of the State University of New York has recently received the following new grants:

Department of Anatomy. J. Gross, $2500, from Smith, Kline and French Foundation. Research in the field of endocrinology.

Department of Medicine. B. L. Zohman, $2500, from the Maltbie Laboratories. Therapeutic procedures for combating intractable heart failure.

Department of Medicine. B. L. Zohman, $3000, from Thomas Leeming & Company. Vasodilator drugs in the treatment of coronary diseases.

Department of Medicine. J. L. Brandt, $3300, from the Abbott Laboratories. Effect of protein on hepatic metabolism.

Department of Psychiatry. H. W. Potter, $27,300, from the New York Mental Health Commission. To operate a clinic for alcoholism and conduct researches in connection therewith.

In December the **Damon Runyon Memorial Fund** made the following grants:

Vienna University, Austria. E. Broda, First Chemical Laboratory. Investigations of individual tissue culture metabolism, $6000.

Bronx Veterans Administration Hospital. L. Gross. Leukemia research, $9700.

Stanford University School of Medicine. A. C. Griffin, Dept.

of Biochemistry. Pituitary factors that modify the action of carcinogenic agents, $8200.

George Washington University. P. K. Smith, School of Medicine. Metabolism of radioisotope labeled chemotherapeutic agents in cancer, $5800.

The **Daniel and Florence Guggenheim Foundation** will grant a total of $36,000 for 1954 Guggenheim Jet Propulsion Fellowships for graduate study in rocket and jet propulsion engineering. Object of the fellowships is to select and train outstanding men for basic research and leadership in the future development of rockets and jet propulsion at the Daniel and Florence Guggenheim Jet Propulsion Centers at Princeton University and the California Institute of Technology. Each grant provides for tuition and an allowance for living expenses which ranges from $1000 to $2000, depending on the stage of advancement of the fellow.

Candidates must be residents of the United States, must have outstanding technical ability and leadership qualities, a deep interest in the development of rockets and jet propulsion, and an intention to follow this field as a career. Application blanks have been mailed to major universities, engineering colleges, and industrial and military establishments engaged in work in this field. If forms are not readily available from these sources, candidates should write to The Daniel and Florence Guggenheim Foundation, 120 Broadway, New York 5. *Completed applications must be received by Mar. 1.*

Nominees with outstanding accomplishments in bacteriological and immunological research are wanted for the **16th Eli Lilly and Company Research Award in Bacteriology and Immunology.** This award is open annually to U.S. or Canadian men or women, not over 35, who are working in a noncommercial or educational institution. It consists of $1000, a bronze medal, and up to $150 in traveling expenses. Nominations should be submitted to the chairman of the Nominating Committee, Dr. Geoffrey W. Rake, The Wistar Institute, University of Pennsylvania, Philadelphia 4, *not later than Mar. 1.* No person should submit more than one nomination; it should be accompanied by five copies each of a brief biographical sketch of the nominee, including date of birth, and a list of his publications.

The **Grass Trust for Research in Neurophysiology** will provide one or two fellowships for work at the Marine Biological Laboratory at Woods Hole, Mass., during the summer of 1954. The stipend will be $500 to $1000, depending upon the financial needs of the candidate. Two candidates may apply jointly to work together with stipends of $500 each. The fellowships are designed for young investigators in the predoctoral or early postdoctoral stage. Applications may consist of a brief letter, preferably from some senior investigator who knows the candidate well, describing his qualifications and giving a brief account of his plans for research and how he would use this fellowship. Reprints of published work will also be helpful to the selection committee. Letters and supporting material in triplicate should be sent to Dr. Robert S. Morison, Room 5500, 49 West 49 St., New York 20, *before March 1.*

The **Medical Library Association** is offering four scholarships of $150 each for summer school courses in medical library work in 1954, two at Columbia University and two at Emory University. Applications for these scholarships should be made to the university at the time of application for enrollment. Since credentials must be approved in advance, application for admission should be made as far as possible before the date of opening of the session and sufficiently early in the year to permit the schools to pass upon the credentials and forward applications for scholarship to the Medical Library Association. Transcript of academic records should be submitted to the school even if the applicant is not a candidate for a degree. *May 1 is the Association's closing date for scholarship applications* and candidates must already have been accepted by the school. Completion of either course will enable a student with a bachelor's degree and one year's library school training to qualify for Grade I certification by the Medical Library Association.

The course at Columbia University on The Medical Library is offered July 6–Aug. 13; registration, July 1 and 2. It is a survey and evaluation of library resources in medicine, with emphasis on bibliographical and information sources. Some attention is given to special service problems in medical libraries. For further information write to The Dean, School of Library Service, Columbia University, New York 27.

Emory University offers a course in Medical Libraries July 19–August 21. The purpose is to give an introduction to medical library resources and their use in medical education, medical research, and care of the patient. A major portion consists of a survey of the literature and its bibliographical control. Attention is given to literature searching as an aid in medical investigation. Consideration will also be given to the application of library techniques, administration, and procedures to medical librarianship. For application forms and further information write to The Director, Division of Librarianship of Emory University, Emory University, Ga.

The **National Foundation for Infantile Paralysis,** 120 Broadway, New York 5, has informed the deans of the medical and basic science schools in the United States that fellowships will continue to be available in 1954 for medical students who have completed at least two years of medical school work and who have eight weeks of consecutive free time to devote to extracurricular study. The stipend will be $400.

Three types of fellowships will be offered: (1) research in the basic sciences related to medicine; (2) physical medicine and rehabilitation; (3) public health and preventive medicine. The dean of each school is invited to nominate one candidate for the

research fellowship and two candidates for each of the other fellowships. Since the purpose of these programs is to enable the student to determine his own ability and aptitudes early in his career, no student who has had an equivalent orientation will be eligible. For further information and application forms, students should consult with the deans of their respective schools. *Applications should be submitted to the National Foundation for approval at least eight weeks prior to the beginning of the program.*

Gifted science students desiring tuition-free opportunities in the coming **Summer Studies Program at the Roscoe B. Jackson Memorial Laboratory** at Bar Harbor, Maine, *must apply by Mar. 1.* Applications were received for last summer's course from five times as many secondary school students and many more college students than could be accepted for the unique ten-week research program offered by this center for the study of heredity of cancer and allied diseases. This year there is a maximum of 27 secondary school places and 26 college level places available. Applications should be sent to the Administrative Director of the Laboratory.

The **University of Hawaii** has announced a $4000 research fellowship in the social or biological sciences for 1954–55. An applicant is expected to have completed at least two years of graduate study in his field of specialization. He must submit a detailed plan for original research in some aspect of Pacific Islands study, preferably to be carried out in the field. *Applications should be received by May 1.* Forms are available from the Dean of Faculties, University of Hawaii, Honolulu 14, Hawaii.

Surgeon General Leonard A. Scheele of the **U.S. Public Health Service** has approved the award of 651 medical research grants in aid which come to a total of $6,428,435. His action was taken on recommendations by advisory councils to National Institutes of Health at their November–December meetings. In February, the councils meet again to allocate the small amount remaining from $28,866,000 that was appropriated for research grants in 1953–54. At that time they will also start consideration of applications for the fiscal year beginning July 1, although sums to be available will still be uncertain. The new approvals are as follows.

Arthritis and metabolic diseases: 67 projects, $606,031; applications totaled $1,003,116, for 98 projects.

Neurological diseases and blindness: 49 projects, $441,312; applications, $1,838,071, for 97.

Cancer: 215 projects, $2,055,155; 253 applications for $2,654,120.

Dental: 5 projects, $20,342; 11 applications for $74,390.

Microbiology: 64 projects, $579,060; 100 bids for $867,189.

Heart: 93 projects, $1,058,636; 152 for $1,878,298.

Mental health: 67 projects, $821,963; 123 for $1,884,291.

General: 91 projects, $845,936; 137 applications for $1,467,511.

Meetings and Elections

At the recent meeting of the **Florida Academy of Sciences** the following officers were elected: pres., J. C. Moore; sec.-treas., R. A. Edwards (re-elected). Counselers-at-large are Clyde Reed of Tampa and Dan A. Thomas of Winter Park. Under academy procedure, officers will not assume their posts until next December. S. de R. Diettrich of the University of Florida, elected a year ago, has succeeded C. S. Nielson of Florida State University as president for the current year.

The **Histochemical Society** will meet at Atlantic City, Apr. 16–17, following the session of the American Society for Experimental Pathology. A symposium on "Basophil Components of Cytoplasm" will be held on Apr. 16.

On Mar. 14–16, the **hundredth anniversary** of the birthdays of Paul Ehrlich, the "Father of Chemotherapy," and Emil von Behring will be celebrated by a commemoration ceremony to be held in Frankfurt, Germany. The ceremony, organized by the Paul-Ehrlich-Institute and the University of Marburg and Frankfurt, will be attended by high government officials, and by scientific and cultural representatives from many countries.

The Paul-Ehrlich- and Ludwig-Darmstaedter-Prize, which is awarded for notable achievements in the fields of science to which Ehrlich made prominent contributions, will be presented to E. B. Chain, recipient in 1945 of the Nobel Prize for Physiology and Medicine. He will deliver the prize lecture on the subject, "Development of Antibiotic Chemotherapy." Prof. Chain, formerly of the University of Oxford, is at present the Scientific Director of the International Research Center for Chemical Microbiology in Rome.

The **International Congress on Photobiology** organized under the auspices of the Comité Internationale de Photobiologie (C.I.P.) will be held in Amsterdam, Aug. 23–28. In addition to contributed papers, there will be three symposia: "Photoperiodism in Plants and Animals"; "The Effects of Nonionizing Radiation on Genetic Elements of Cells"; and "The Fundamental Effects of Light on Skin." The Committee on Photobiology of the Division of Biology and Agriculture, National Research Council, has limited funds available, contributed by the National Science Foundation, for the support of this Congress. For further details write to the secretary of the American Branch of C.I.P., Alexander Hollaender, Oak Ridge National Laboratory, Biology Division, P. O. Box P, Oak Ridge, Tenn., or to the Secrétariat du Congrès

C.I.P., Radiologisch Laboratorium, Wilhelmina Gasthuis, Amsterdam, Holland.

The Office of Naval Research and the University of Pennsylvania have announced a symposium on **"Origins of Drug Resistance,"** to be held Mar. 25–27 at the Hotel Statler in Washington, D.C. Five sections are planned: "Origins of Drug Resistance in Microorganisms," "Effects of Acridines and Resistance to Insecticides and Herbicides," "Origins of Tolerance and Addiction to Drugs, and Alcoholism," "Resistance Factors in Infectious Agents and Cancer Cells," "Physiological, Chemical and Genetic Viewpoints." Speakers will include: H. B. Newcombe, V. Bryson, W. Szybalski, Harriet Ephrussi, A. C. R. Dean. B. Ephrussi, Charles E. Minarik, Richard Kuhn, Leigh E. Chadwick, Nathan B. Eddy, J. H. Quastel, Ebbe C. Hoff, Roger J. Williams, Lloyd W. Law, James A. Miller, Elizabeth C. Miller, Morris K. Barrett, Howard A. Schneider, Herschel K. Mitchell, M. G. Sevag, and Ralph W. Gerard. The speaker at the banquet will be C. P. Martin of McGill University, who will address the group on "Theories of the Mechanism of Evolution." Further information may be obtained from Dr. M. G. Sevag, School of Medicine, University of Pennsylvania, Philadelphia 4.

Phi Delta Kappa has elected the following officers: pres., Emery Stoops, University of Southern California, Los Angeles; 1st v. pres., M. L. Cushman, Iowa State College, Ames, Iowa; 2nd v. pres., J. Roy Leevy, Purdue University, Lafayette, Ind.; rec. sec., John C. Whinnery, Superintendent of Schools, Montebello, Calif.; comptroller, Maynard Bemis, University of Wyoming, Laramie, Wy.

Last month the New York Academy of Sciences sponsored a two-day conference on **"Recent Advances in the Study of the Structure, Composition and Growth of Mineralized Tissues."** Roy O. Greep, Dean, Harvard School of Dental Medicine, and Albert E. Sobel, Head, Department of Biochemistry, Jewish Hospital of Brooklyn, and professor of biochemistry at the Polytechnic Institute of Brooklyn, were cochairmen of the conference. Twenty-one scientists from the United States, Canada, and England presented papers on the important advances in the fundamental knowledge of the three mineralized tissues of the body: bones, enamel, and dentin of teeth.

A three-day conference on **Tissue Culture Technique in Pharmacology,** sponsored jointly by the New York Academy of Science, Section of Biology, and the Tissue Culture Association, Duke University, took place recently in New York City. This conference brought together outstanding investigators from the leading universities, research laboratories, hospitals, the National Cancer Institute, and pharmaceutical houses in the United States and from abroad. A total of 27 papers were presented. C. M. Pomerat, University of Texas Medical Branch, Galveston, and Elmer L. Sevringhaus, Director of Research, Hoffman-La Roche, Inc., Nutley, N.J., were cochairmen of the conference.

Guest speakers from abroad were: Jean Verné of the University of Paris, a delegate of the French Government; J. Fréderic of the University of Liége, Liége, Belgium; Dr. and Mrs. Hans Lettré, University of Heidelberg, Heidelberg, Germany; and Honor B. Fell, Strangeways Research Laboratory, Cambridge, England.

Sessions covered "Pure Strain, Long Term and Mass Culture Methods, Commercial and Synthetic Media—Virology;" "Special Assay Technique: Comparison between *in vitro* and *in vivo* Results;" and "The Action of Chemical Agents on Cell Organoids and Mitosis."

Miscellaneous

A new Hall of Insects and Other Invertebrates will be opened in the **Academy of Natural Sciences of Philadelphia** with a preview for members on the evening of February 16, 1954. Following the preview, the hall will be open to the public as a part of the Museum.

The **Chemical-Biological Coordination Center** is reviewing the publication habits and related research practices of American biologists. In connection with this study the Center is seeking sources of unpublished data from research in all areas of biology where the effects of chemicals on biological systems are involved. The first returns from a nationally distributed one-page questionnaire have shown a most encouraging degree of interest. The Center is grateful for the cooperation it is getting, and urges that all biologists who receive a questionnaire during the next few months complete and return it as soon as possible.

The survey is intended to improve the efficiency of the CBCC as a research tool whose primary function is to coordinate and speed up the dissemination of facts and ideas from original research in the biological sciences. The results of the study will be analyzed, and distributed to all those who are interested. Inquiries regarding the CBCC may be addressed to: Dr. Karl F. Heumann, Chemical-Biological Coordination Center, 2101 Constitution Avenue, NW, Washington 25, D.C.

The story of how twelve European nations have agreed to cooperate in nuclear research for nonmilitary purposes is reported by the United Nations Educational, Scientific and Cultural Organization in the December issue of *Courier,* its monthly magazine. The article on the **European Organization for Nuclear Research** (CERN) which plans to erect a tremendous central laboratory near Geneva, is one of a series in the 16-page special section on peacetime uses of atomic energy. UNESCO's examination of this problem is of particular interest because of President Eisenhower's recent address at the United Nations on the use of atomic power for peace.