In general, the scientist is somewhat less affected than the average person by sudden changes in the political climate. Most scientists have learned by experience that international friendships are a precious commodity, and that they go far deeper than formal relations between governments. I shall illustrate this point by citing my own experience with regard to Mexico. My first impulse to establish friendly relations with Mexican scientists was fostered in part by the effective Good-Neighbor Policy of the Roosevelt Administration. But it did not take long before some of my most cherished personal friendships grew out of my acquaintance with Mexican scientists, mostly astronomers and physicists. No official cooling in political relations between our governments, no incident real or imaginary, could readily change my basic attitude toward our southern neighbors.

There is one special reason why, as a scientist, I am naturally in favor of international cooperation. Every scientist can reel off without prompting the names of a dozen scientists from different nations who have contributed greatly to the advance of research in his special field. No list of astronomers who have brought my own field of Milky Way research to its present level would be complete without the names of one or more astronomers from the United States, Great Britain, Holland, Sweden, Germany, the Soviet Union, Canada, Mexico, and at least a half-dozen other nations. A scientist is often more keenly aware of the research project of a fellow-scientist in another country who is working close to his own specialty, even though the two may be thousands of miles apart, than he is of the researches of a close personal friend in another field in the laboratory next door. It is because of this universality of common interest in science, which concerns itself very little with national borders, that scientists are by nature internationally minded. The large existing reservoir of good will among scientists of all nations should be tapped for the benefit of all people in all parts of the world.

I might, in conclusion, dwell for a moment on the problem of the extent to which scientists should be proponents of world peace. On the highest level I feel strongly that as scientists we have much as any class of people a mission of upholding the basic Christian doctrine that all men are brothers. Like everyone else in his right mind, we, as scientists, should help create conditions conducive to world peace and we should constantly bear witness to the unifying influence of science.

I see my function as a scientist more like that of a missionary, or—perhaps more correctly—like that of a special ambassador. It is important to the future of the world that individual scientists on opposite sides of national borders should remain in contact with one another even in times of political tension. For as the political climate changes and the time comes for real progress toward world peace, we shall need ambassadors of good will from both sides who have long ago learned to speak each other's language and who are capable of acting for the common good.

News and Notes

Friends of the Pleistocene

The annual field meeting of the Friends of the Pleistocene was held 21–22 May at Malone N.Y. with about 70 people present. The meeting was under the leadership of Paul MacClintock assisted by Paul Bird, senior engineering geologist, New York Department of Public Works.

Demonstration and discussion centered about (i) the possibility of two till sheets representing two episodes of glaciation separated by an ice-free episode of the St. Lawrence lowland; (ii) the existence of large ice-dammed lakes, such as Lake Iroquois, in contrast to independent ice-marginal lakes whose shore lines may not reveal isostatic rise; (iii) the Pleistocene stratigraphy of the so-called "Malone Delta" which shows lower red-brown till below gray to buff till below dense silt capped with pebbly sand; (iv) the problem of whether the rounded NE-SW hills are drumlins or are ice-marginal features subsequently modified by the waters of the Champlain sea which has left their summits capped with a residual deposit of stony, bouldery material impregnated with saxacava and macoma shells and the surrounding lowlands buried in marine clays, silts, and sands; (v) the engineering problems, encountered in construction of the St. Lawrence power and seaway project, of handling the "sensitive" clays of the area.

At the dinner meeting Bird discussed the glacial geology as encountered in engineering of the St. Lawrence Seaway. Nelson Gadd, of the Canadian Geological Survey, displayed his maps and described his tentative findings in the St. Lawrence valley in Quebec. Richard Goldthwait showed a new colored and sound educational film that he made last summer in North Greenland.

PAUL MACCLINTOCK
Department of Geology, Princeton University, Princeton, New Jersey

Report on Government Research

A report on *Research and Development in the Government* was submitted to the Congress on 31 May by the Commission on Organization of the Executive Branch of the Government, of which former President Herbert Hoover is chairman. The report points out that the Federal Government has organized the "largest integrated scientific and technical endeavor that any nation has ever attempted." The cost for the

fiscal year starting 1 July will be approximately $2.4 billion, in addition to expenditures by private industry and nonprofit institutions that will bring the total to more than $4.5 billion. The commission says:

> There is no tribute great enough to express the nation's obligations to its scientists, engineers and military personnel, for their contributions to our constantly-increasing productivity and the strengthening of our national defense. And there can be no relaxation in this effort.

The commission makes five specific recommendations —three relating to the problems of research and development in the Department of Defense, one urging that "greater Federal support be given to basic and medical research," and one endorsing the administrative recommendations of a subcommittee of the commission's Committee on Business Organization of the Defense Department. The subcommittee, or task force, was presided over by Mervin J. Kelly, president of Bell Telephone Laboratories, Inc. Other members of the committee were Frederick L. Hovde, president of Purdue University; Robert M. Kimball, vice president of Massachusetts Institute of Technology; C. Guy Suits, vice president and director of research for the General Electric Co.; and Clyde E. Williams, president of Battelle Memorial Institute. G. Terrell Selby, of Bell Telephone Laboratories, Inc., served as staff director. All but two of the task force's 15 recommendations can be effected, the commission points out, by administrative action in the Defense Department.

The Kelly task force subcommittee shares the view, expressed in various quarters, that the Armed Services are not sufficiently daring and imaginative in their approach to radically new weapons and weapons systems. The present organization is regarded as inadequate for the initiation of such projects. Since the end of World War II, strikingly new approaches have been inspired largely through informal proddings by civilian scientists and technologists. It is pointed out that initiation of such important new projects should not be left to chance.

The task force recommends that the Assistant Secretary for Research and Development in the Department of Defense appoint a standing committee, reporting directly to him, of outstanding basic and applied scientists. This committee would canvass periodically the needs and opportunities presented by new scientific knowledge for radically new weapons systems. This Assistant Secretary would be expected to implement appropriately the committee's recommendations when action is necessary.

The task force found "some basis" for concern about waste and excess expenditure through duplication in the research and development programs of the Army, Navy, and Air Force. There is, the task force reported, a "self-sufficiency complex" in each of the services. Areas of "unwarranted" and "warranted" duplication exist.

Although the report is devoted mainly to the task force subcommittee's proposals for improving research in the Department of Defense, the commission deplores the fact that "but a minor amount of basic research into the laws of nature and the nature of materials" is being carried on.

> Yet the safety, the increase of productivity and the advancement of health in our nation must come from constantly increasing knowledge through fundamental research. From these explorations come knowledge, discoveries, inventions and progress. Out of about $2,400,000,000 Federal expenditudes proposed by the Budget for fiscal year 1956 on research and development work, probably less than $130,000,000 is to be devoted to Basic Research. Of this, the Defense agencies probably expend about $77,000,000.
>
> Of all the special research and development activities inside and outside the Federal Government, the most beneficent to mankind has been in medical and health research. . . .
>
> We are concerned over the fact that many private foundations devoted to research and education have in the recent past tended to deemphasize their medical programs. . . .
>
> We are greatly concerned over the inadequate public and state support of our medical schools where our research technicians are trained and an important part of basic medical research is carried forward. No greater instance of university research need be cited than the dramatic accomplishment at the University of Pittsburgh by Dr. Jonas Salk in basic research which produced the polio vaccine. . . .

The task force points out that through the contracted programs of the military with the academic institutions and industry an effective relationship is maintained. This is supplemented by a large number of committees and panels selected from the nation's scientific and technical communities by the Defense Department and the three services. The report says, however, that "Their effectiveness varies from great to small. There is need for administrative review and cleanup." The suggestion is made that the use of the National Research Council and the National Academy of Sciences in establishing such committees could profitably be increased.

The attention given to research and development in the top-level civilian organizations in the Army, Navy, and Air Force has been inadequate; few of the personnel involved have been trained in science and technology and few have had experience in research and development operation and administration. This is regarded as the "area of greatest organizational and personnel inadequacy in the work of research and development and one that promises greatest rewards through correction."

The task force recommends, specifically, that an Assistant Secretary in each of the three military departments devote himself exclusively to research and development. Each office would have a small, specially trained staff.

Since its studies were made, the task force notes, an Assistant Secretary for Research and Development who "meets the professional requirements" has been appointed for the Air Force. The task force urges that this official be provided with an adequate staff. The task force also notes a partial step in the

direction of its recommendation by the Navy, which it commends as an improvement but describes as still inadequate.

Each of the military departments, according to the task force, should initiate and operate its own research and development program. The authority of the Secretary of Defense to withhold funds from any proposed program can result in effective coordination and integration of the programs of the three departments and the elimination of unwarranted duplication. The cost of the basic research programs of the three services in fiscal year 1954 amounted to $20 million. The task force considers this level inadequate.

Research and development operations are carried out by the three services in four ways—in their own installations, by private industry, by academic institutions, and by nonprofit organizations. Of the $1.4 billion appropriated for the 1954 fiscal year, 40 percent, or some $560 million was expended in the military department installations; 50 percent, or $700 million, in industry; and 10 percent, or $140 million, in academic and nonprofit institutions. The task force believes that research and development and design operations are, in general, best performed by civilian agencies. It estimated that in 1954 $125 million of such work performed by the military was susceptible to shift into the civilian economy.

> Since the close of World War II, the military departments have greatly expanded their facilities and personnel for the operations of research and development. The operations performed there are generally at a lower level of effectiveness than could be realized if suitably placed in the civilian economy.

The task force observes that major portions of the placement and monitoring of research and development programs, tests for evaluation, development aid to production, and current development activities must be performed by the military in its installations, but adds that frequently increased effectiveness and efficiency will be realized through operations by civilian organizations. The task force commends "the trend in this direction by the Air Force."

Both the Army and the Navy are aware of organizational deficiencies, and have recently taken steps to increase effectiveness and efficiency. These changes are an improvement, but are still inadequate. The task force points out that in contrast with the compartmentalization by the Army and Navy of their research and development within several organizations, the Air Force has a well-integrated organizational structure. The Air Research and Development Command, established in 1950, is composed of a headquarters organization and eleven centers distributed across the nation. The task force approves this framework.

The task force recommends that the Secretary of the Army and his Chief of Staff give strong support to the research and development staff reorganization of last December and that a staff adequate in size and of the highest professional competence in research and development be provided. A similar recommendation is made that the Secretary of the Navy and responsible senior officers give strong administrative support to the new functions of the Office of Naval Research in coordinating and integrating the development program of the Navy and that a competent research and development staff be created.

The Kelly group, while reporting that real improvements in effectiveness and in economy of the military program are evident, considers the separation of the functions of research and development and of applications engineering at the Assistant Secretary level unsound organization. The task force believes that the two areas should be administered by one Assistant Secretary and recommends that the Department of Defense assess the present arrangement with a view to the proposed consolidation.

Because of the rotational assignment policies of the services and the inadequate appreciation of the necessity for career officers in research and development, the task force suggests that the military is not making the best use of those officers who have been trained in research and development. The constant rotation of officers between research and development and operating command positions ignores the urgent need for increased specialization. A large fraction of the officers in the research and development program must have careers in this area. They should be excluded from the present cycle rotations from research and development to field assignments.

Even in areas where officers are rotated only through technical assignments they are left on a particular assignment for too short a period. The task force recommends that the three military departments review policies and their implementation on career officers in research and development and that they limit the areas of rotation of research and development officers to technical assignments, at the same time increasing the time-period of assignment.

> The quality of the civil service employee contribution to research and development suffers through inability to acquire and retain in the program enough men of adequate professional training and competence. The professional training program for civilians in each of the three departments is good. Its improvement, while desirable, will not alone meet the situation. Generally higher pay levels and a larger number of high level civil service positions are essential for the improvement of the situation and probably essential to prevent deterioration.

Scientists in the News

The Special Training Division of the Oak Ridge Institute of Nuclear Studies completed its first special basic radioisotopes course for noncitizens 27 May. The **31 participants from 22 countries** were as follows: Francisco Aguirre-Batres, Institute of Nutrition of Central America and Panama, Guatemala City, C.A.; E. K. Janaki Ammal, Botanical Survey of India, Lucknow, India; Julio A. Bedoya, Hospital Obrero, Lima, Peru; Jaime Cortazar, Instituto Nacional de Cancerologia, Bogota, Colombia; George K. Daikos,

Athens University Medical School Service of Clinical Therapeutics, Athens, Greece; Donald A. Fraser, Petawawa Forest Experimental Station, Chalk River, Ont. Canada; Jorge E. Gavilondo, Havana, Cuba; Kenneth E. Hall, Ottawa Civic Hospital, Ottawa, Ont. Canada; Osman Hilal, Alexandria University, Alexandria, Egypt; Yutaka Hirata, Scientific Research Institute, Ltd., Tokyo, Japan; Nagao Ikeda, Kyoiku University, Tokyo, Japan; Malini Jamikorn, Chulalongkorn University, Bangkok, Thailand; Francis E. Jenkins, University of Buffalo, Buffalo, New York (Malvern, Victoria, Australia); Camilo Larrain, University of Chile School of Medicine, Santiago, Chile; Renat Lose, University of Ghent, Ghent, Belgium; Mohammad Maqsood, Punjab College of Animal Husbandry, Lahore, Pakistan; Florencio A. Medina, Air Force of the Philippines, Camp Murphy, Quezon City, Philippines; Ruben Merenfeld, Hospital Vargas, Caracas, Venezuela; Augusto Moreno y Moreno, National University of Mexico, Mexico City; Cesare Rossi, Instituto Superiore di Sanita, Rome, Italy; Jose F. Saiz del Rio, Instituto de Edafologia, Madrid, Spain; Kauno E. Salimaki, Central Institute of Radiotherapy, Helsinki, Finland; Guenter Schramm, Institutum Divi Thomae, Cincinnati, Ohio (Nassau, Germany); Boshi Sen, Indian Agricultural Research Institute, New Delhi, India; Mohammed S. H. Siddiqi, University of Peshawar, Peshawar, Pakistan; Thomas G. Stoddart, Ottawa Civic Hospital, Ottawa, Ont., Canada; J. A. J. Stolwijk, Agricultural University, Wageningen, Netherlands; Chalio Surasiti, Phya Thai, Bangkok, Thailand; Ariel Tejera-Rivera, National University of Mexico, Mexico City; Mohamad H. Toosy, Nishtar Medical College, Multan, Pakistan.

Charles G. Abbot, astronomer and retired secretary of the Smithsonian Institution, was honored on 31 May, his 83rd birthday, by a reception at the Smithsonian Building. This also was the 60th anniversary of his association with the institution, which he headed for 16 years. In connection with the occasion, a bronze bust of Abbot by Alicia Neathery was unveiled.

Robert W. Trullinger, assistant administrator for experiment stations, Agricultural Research Service, U.S. Department of Agriculture, retired on 1 June. A leading advocate of close cooperation between the states and the Federal Government in agricultural research, and between research and extension work for the improvement of the nation's agriculture, Trullinger has had a distinguished career of 43 years' service in the department. He is widely known at state land-grant colleges and universities throughout the country, both for his work with the experiment stations and for his leadership in establishing agricultural engineering as a profession. In 1941 the American Society of Agricultural Engineers awarded him the John Deere medal, and in 1953 he received the USDA Distinguished Service Award.

A native of Farragut, Iowa, Trullinger was graduated from Iowa State College in 1910 with a B.S. degree in civil engineering. In 1925 he received the professional degree of agricultural engineer from the same institution. Rutgers University awarded him the honorary degree of doctor of engineering in 1951.

Entering the Department of Agriculture in 1912, Trullinger engaged in the organization, planning, and conduct of research on soils, drainage, fertilizers, and agricultural engineering as a staff member of Office of Experiment Stations. He served during World War I as a research engineer officer in the Army. He was named chief of the Office of Experiment Stations in 1946, and in 1947 was appointed to serve also as assistant research administrator of the former Agricultural Research Administration. Under the general reorganization of 1953, his title was changed to assistant administrator for experiment stations in the Agricultural Research Service. In these positions he has had responsibility for administration of Federal grant funds for agricultural research at the state experiment stations, for Federal territorial research, and for coordination of USDA research with that of the state experiment stations.

Trullinger is a past vice president and president of the American Society of Agricultural Engineers; he served for more than 20 years as member or chairman of the society's research committee. From 1931 to 1936 he was active on the administrative board of the American Engineering Council.

Carl R. Rogers, professor of psychology at the University of Chicago and executive secretary of the university's counseling center, has been awarded the Nicholas Murray Butler medal by Columbia University. He was honored for his book, *Psychotherapy and Personality Change,* which was published in 1954. The citation pointed out the development in the book "of a philosophy and a method of psychotherapy especially consonant with the democratic doctrine of respect for every individual personality."

Mollie A. Geiss, professor of pathology at the Woman's Medical College of Pennsylvania, has resigned her post after 33 years of service on the faculty. She will be succeeded by **Isadore N. Dubin,** at present chief of the hepatic pathology section of the Armed Forces Institute of Pathology.

Joe Vincent Meigs will resign on 1 July as chief of staff of the Vincent Memorial Hospital, Boston, Mass., and chief of the gynecological service at Massachusetts General Hospital, Boston. This will relieve him of administrative duties and allow him more time for his private practice and for his continuing responsibilities as clinical professor of gynecology at Harvard Medical School and as gynecologist at the Palmer Memorial Hospital and the Pondville State Cancer Hospital.

Three members of the Lehigh University faculty will retire on 30 June. **Warren W. Ewing,** professor of physical chemistry, has been with the university for 35 years. Before joining Lehigh in 1920, he served in

the British Expeditionary Force in East Africa and taught at the Mission High School, Fatehgarh, India.

Milton C. Stuart, professor of mechanical engineering, leaves after 29 years of service. A graduate of the University of Pennsylvania, he taught at the U.S. Naval Academy and Rensselaer Polytechnic Institute before joining Lehigh. For a number of years he served as editor of *Naval Propulsive Power,* a monthly digest of literature on mechanical engineering developments.

Adelbert Ford, head of the department of psychology, will retire after 24 years of service on the South Mountain campus. He is a graduate of the University of Michigan and has written three books, *A Scientific Approach to Labor Problems, Group Experiments in Elementary Psychology,* and *The Story of Scientific Psychology.* He will be succeeded as head of the department by **William L. Jenkins,** professor of psychology.

Jean I. F. King of the geophysics research directorate, Air Force Cambridge Research Center, Cambridge, Mass., delivered the center's first Gunter Loeser memorial lecture on 2 June. His subject was "The vertical temperature distribution on the Earth, Venus and Mars." King was recently named winner of the Gunter Loeser memorial award for outstanding research in geophysics during 1954. The award is given in memory of Gunter Loeser, who was killed in a helicopter crash in 1953 while carrying out field experiments for the research center.

King's research has led to the formulation of a theory that attempts to make it possible to predict the temperature distribution on Mars and Venus, the two planets nearest the earth. The work is based on a study of the degree to which each planet's atmosphere is impervious to light. His investigations indicate that there is a relatively motionless atmosphere on Mars, while Venus has a surface temperature of several hundred degrees, leading to the extreme turbulence and dust storms that permanently obscure the planet's surface.

The following are among those who have recently received **honorary doctor's degrees.**

Albany Medical College of Union University: **Arthur Knudson,** retiring chairman of the department of biochemistry, Albany Medical College; **Joseph C. Hinsey,** director, New York Hospital–Cornell Medical Center.

South Dakota State College: **Guy L. Boyden,** head of the department of otolaryngology, University of Oregon Medical School; **Ethel Austin Martin,** nutrition consultant for the National Dairy Council; **Harry L. Solberg,** head of the School of Mechanical Engineering, Purdue University.

Thiel College: **Benjamin F. Tullar,** head of the development laboratory, Chemical Research Division, Sterling-Winthrop Research Institute.

University of Western Ontario: **E. R. Birchard,** vice president (administration), National Research Council of Canada.

Newark College of Engineering: **Henry Horton Armsby,** chief of engineering education at the U.S. Office of Education; **Donald C. Luce,** president, Public Service Electric and Gas Co., N.J.

Union College: **John Bardeen,** professor of physics and electrical engineering, University of Illinois, and **Walter H. Brattain,** Bell Telephone Laboratories, co-inventors of the transistor.

Uppsala University, Sweden: **Beno Gutenberg,** professor of geophysics and director of the Seismological Laboratory, California Institute of Technology.

Blackburn College: **John L. Wood,** who is head of the department of biochemistry and on 1 July will become chief of the Division of Chemistry, University of Tennessee Medical Units.

Walter S. Beach, professor of plant pathology at Pennsylvania State University, will retire on 1 July. He becomes an emeritus professor after 37 years of service that has been devoted largely to research upon diseases of vegetables, mushrooms, tobacco, and turf grasses.

Willard F. Libby of the U.S. Atomic Energy Commission recently delivered the 1955 Remsen Memorial lecture of the American Chemical Society's Maryland section. The tenth American scientist to deliver the lecture, Libby spoke at Johns Hopkins University on "Tritium in nature."

Lincoln Constance, curator of the seed-plant collections and chairman of the department of botany at the University of California, Berkeley, will succeed Alva R. Davis, emeritus professor of plant physiology, as dean of the College of Letters and Science, Berkeley, effective 1 July.

Perry Wilson of the University of Wisconsin recently received the Pasteur award of the Society of Illinois Bacteriologists. Wilson is noted for his research on nitrogen fixation, particularly for his discovery that hydrogen acts as an inhibitor of nitrogen fixation. In his acceptance address he quoted Louis Pasteur's dictum: "Chance favors only the prepared mind."

The 1955 Ciba award for accomplishment in endocrinology was presented on 3 June to **Jack Gross** of the State University of New York during the 37th annual meeting of the Endocrine Society. Gross, who is associate professor of anatomy at the College of Medicine in Brooklyn, was cited for his work on the thyroid gland since the introduction of radioiodine in the early 1940's, and especially for his discovery and isolation of a new iodine compound, triiodothyronine, in human blood. Together with R. Pitt-Rivers of the National Institute for Medical Research, London, England, Gross isolated triiodothyronine from the thyroid of cattle, explored its physiological properties, and synthesized it chemically, making it possible to test its effects on the body.

In addition to a stipend of $1800, the Ciba award provides $700 for expenses if the recipient wishes to pursue, within 2 years, special investigative work at

a laboratory other than his own. Under this provision, Gross will take 6 mo leave in Feb. 1956; he hopes to work in the laboratory of Hans Krebs, Nobel laureate, at Oxford, England, on studies pertaining to enzymatic reactions involving triiodothyronine.

To honor outstanding engineering achievement in the field of agriculture, the American Society of Agricultural Engineers, on the occasion of its annual dinner held 14 June at the University of Illinois, awarded the John Deere gold medal to **Walter W. Weir,** soil erosion specialist of Berkeley, Calif., and the Cyrus Hall McCormick gold medal to **Robert P. Messenger,** executive vice president of the International Harvester Co., Chicago.

In April **Selman A. Waksman,** director of the Institute of Microbiology, Rutgers University, was elected a foreign associate of the French Academy of Sciences.

Thomas J. Killian, dean of the School of Engineering and Architecture at Catholic University, has been named deputy chief and chief scientist of the Office of Naval Research. He succeeds **Emanuel R. Piore,** who resigned to accept a position as vice president and chairman of the Committee on Advanced Scientific Research of Avco Manufacturing Corp. in New York. At a recent farewell reception, Piore received the Navy's Distinguished Civilian Service Award.

The following appointments to assistant professor have been announced. University of Michigan: **Thomas R. Riggs,** biochemistry. Michigan State University: **Theodore Delevoryas,** botany. University of North Carolina: **Clyde Ritchie Bell,** botany. Los Angeles State College of Applied Arts and Sciences: **Joseph Sacher,** botany.

Meetings

The **American Physical Society** and the **Canadian Association of Physicists** will hold a joint meeting at the University of Toronto, Toronto, Canada, 22–24 June. For the APS this will be the regular summer meeting in the East, held this year in Canada for the first time since 1947. Contributed 10-min papers of the society and the association are intermingled in the sessions, but the association begins its meeting 2 days before the APS; on the 21st and 22nd it will present symposiums on radiations as applied to medicine, and on physics in industry, as well as the address of president Larkin Kerwin.

The APS division of electron physics has arranged a six-session program, since it will hold its major meeting of the year during the 3-day period. Invited speakers on the divisional program are H. E. Farnsworth, P. A. Forsyth, A. R. Hutson, L. Kerwin, H. J. Krusemeyer, A. D. MacDonald, D. K. C. MacDonald, H. S. W. Massey, P. M. Millman, H. A. Reiss, and T. Holstein.

Invited papers on the general (as distinguished from the divisional) program have been solicited from Canadian centers of research, from visiting British physicists, and from a few American universities not far from Toronto. The speakers are M. F. Crawford, P. Demers, A. E. Douglas, H. E. Duckworth, J. S. Foster, H. W. Fulbright, H. E. Gove, A. C. H. Hallett, P. Hartman, D. R. Hartree, G. Herzberg, F. A. Kaempffer, L. Katz, E. H. Kerner, S. A. Korff, P. Lorrain, J. M. Robson, J. Reekie, D. C. Rose, R. D. Russell, R. Skinner, H. G. Thode, and G. M. Volkoff.

The **1955 August meeting** of the American Physical Society, which will supplant the regular summer meeting in the West, will be held in Mexico City on 29–31 Aug. This will be the first joint meeting with the Sociedad Mexicana de Física, and the first in the new buildings of the Universidad de México. For hotel reservations, write promptly to Aguirre's Guest Tours, Luis Moya 5, México 1, D.F., Mexico.

The Council of Participating Institutions of Argonne National Laboratory will sponsor a **Conference on the Use of Isotopes in Agriculture,** at Michigan State University, 12–14 Jan. 1956. Coordinated with this, the AAAS and the Oak Ridge Institute of Nuclear Studies are arranging a related conference on atomic energy and agriculture, which will take place during the Atlanta, Ga., meeting of the AAAS, 26–30 Dec. At East Lansing there will be intensive coverage of laboratory problems, experimental problems, and results. The Atlanta session will develop the present status and future outlook for applications of atomic energy in agriculture. Titles and 300-word abstracts for the Michigan meeting should reach E. W. Phelan, Argonne National Laboratory, Box 299, Lemont, Ill., *before 15 Oct.*

The preliminary program has been published for the 117th annual meeting of the **British Association for the Advancement of Science,** which will be held in Bristol 31 Aug.–7 Sept. The president this year is Sir Robert Robinson, who has chosen the title "Science and the scientist" for his presidential address. The Lord Mayor of Bristol is the chairman of the local general committee, and the vice chancellor of the University of Bristol is chairman of the local executive committee.

The program contains the titles of the addresses by the presidents of thirteen sections. There will be three evening lectures: the first will be given by C. F. Powell, Melville Wills professor of physics at the University of Bristol. His address on "Experiments at great altitudes with free balloons" will deal, in part, with nuclear physics in the very high-energy region. B. J. C. Atkinson of the department of prehistoric archeology of the University of Edinburgh will speak on "Stonehenge in the light of recent research." H. D. F. Kitto, H. O. Wills professor of Greek, University of Bristol, will deliver an address on "Scientific and dramatic modes of thought" on 4 Sept.

Several of the scientific members of the British North Greenland Expedition will participate in the meeting. They will lecture at a public afternoon session and they will take part in the proceedings of

certain sections. They will also show an exhibit of photographs and materials illustrating the expedition's work.

In the past, scientific films have been shown at section meetings, and during the whole of the last morning of the meeting. This year, because of the increasing importance of the film in scientific work—and as a medium for the interpretation of science to the public—it has been decided to have daily screening of selected films, each session lasting for about 3 hr.

Many foreign guests have been invited to go to Bristol, and among those who have already accepted are Sydney Chapman and Lloyd Berkner, president and vice president of the International Committee for the International Geophysical Year. The final program will be published early in August. For information write to the association of Burlington House, London, W.1.

The 7th national meeting of the **Operations Research Society of America** will be held 15–16 Aug. at the Hotel Statler, Los Angeles, Calif. Meeting chairman is Robert A. Bailey, Military Operations Research Division, Lockheed Aircraft Corp., Burbank, Calif. In addition to contributed papers, sessions on operations research in West Coast industry and government, computer developments affecting operations research, and methods and training will be held. This is the society's first meeting on the West Coast.

Society Elections

Federation of American Scientists: chairman, Donald J. Hughes, Brookhaven National Laboratory; v. chairman, Lothar W. Nordheim, Duke University; sec., John R. Stehn, Knolls Atomic Power Laboratory; treas., Arthur S. Wightman, Princeton University.

Sigma Pi Sigma: pres., Vincent E. Parker, Louisiana State University; v. pres., Stanley S. Ballard, Scripps Institution of Oceanography; exec. sec., Marsh W. White, Pennsylvania State University.

American Academy of Arts and Sciences: pres., John E. Burchard, Massachusetts Institute of Technology; v. pres. for mathematical and physical sciences, Edward L. Bowles; v. pres. for biological sciences, Hudson Hoagland, Worcester Foundation for Experimental Biology; v. pres. for the social arts and sciences, David F. Edwards, Saco Lowell Shops; v. pres. for the humanities, Robert Ulich; sec., William C. Greene; treas., Thomas B. Adams.

National Health Council: pres., Hugh R. Leavell, Harvard School of Public Health; pres.-elect, Leona Baumgartner, New York City Department of Health; sec., James E. Perkins, National Tuberculosis Association; treas., Philip R. Mather, American Social Hygiene Association. The vice presidents are A. W. Dent, Dillard University; Theodore G. Klumpp, Winthrop-Stearns, Inc.; and Basil O'Connor, National Foundation for Infantile Paralysis.

American Psychiatric Association: pres., R. Finley Gayle, Jr., Medical College of Virginia; pres.-elect, Francis J. Braceland, Institute of Living, Hartford, Conn.; sec., William Malamud, Boston University; treas., Jack R. Ewalt, Commissioner of Mental Health for Massachusetts, Boston.

Association of Southeastern Biologists: pres., Alvin B. Beatty, Emory University; pres.-elect, George C. Kent, Jr., Louisiana State University; v. pres., A. J. Sharp, University of Tennessee; sec., J. C. Dickinson, University of Florida; treas., J. P. Reynolds, Florida State University.

American Association of Colleges of Pharmacy: pres., Linwood F. Tice, Philadelphia College of Pharmacy and Science; pres.-elect, Harold G. Hewitt, University of Connecticut; v. pres., Francis J. O'Brien, Union University, Albany, N.Y.; chairman executive committee, Louis C. Zopf, State University of Iowa; sec.-treas., Richard A. Deno, University of Michigan.

Alabama Academy of Science: pres., Ralph L. Chermock, University of Alabama; pres.-elect, J. Allen Tower, Birmingham-Southern College; sec., Herbert A. McCullough, Howard College; treas., Locke White, Southern Research Institute, Birmingham. The vice presidents (each also chairman of a section) are Everett Bishop, University of Alabama; Frank J. Soday, Chemstrand Corp., Decatur; George W. Swindel, Geological Survey, University; J. M. Stauffer, Alabama Department of Conservation, Montgomery; J. L. Hammond, Southern Research Institute, Birmingham; George R. Byrum, First Federal Savings and Loan Association, Birmingham; Ted C. Cobun, Indian Springs School, Helena; H. Ellsworth Steele, Auburn. Representative to the AAAS council is Father Patrick H. Yancey, Spring Hill College.

Nebraska Academy of Sciences: pres., Paul Stageman, University of Omaha; v. pres., Robert G. Bowman, University of Nebraska; sec., C. B. Schultz, University of Nebraska; cor. sec., Milton Beckmann, University of Nebraska; treas., C. E. Rosenquist, University of Nebraska. Representative to the AAAS council is Victor Levine, Creighton University.

North Dakota Academy of Science: pres., Harry B. Hart, Jamestown College; v. pres., W. E. Cornatzer, University of North Dakota; sec.-treas., J. Donald Henderson, University of North Dakota.

Virginia Academy of Science: pres., Walter S. Flory, Jr., University of Virginia; pres.-elect, Edward S. Harlow, American Tobacco Co.; sec.-treas., Foley F. Smith, Box 1420, Richmond 11.

The **American Nature Study Society:** pres., Malvina Trussell, Tallahassee, Fla.; v. pres., Richard Weaver, University of Michigan, Ann Arbor; sec., Helen B. Ross, State Teachers College, Fitchburg, Mass.; treas., Gilbert Mouser, Michigan State University, Lansing. The representative to AAAS council is E. L. Palmer, Ithaca, N.Y.

The American Association of Petroleum Geologists: pres., G. M. Knebel, Standard Oil Co. (N.J.), Rockefeller Plaza, New York; past pres., Edward A. Koester, Wichita, Kans.; v. pres., Horace D. Thomas, state geologist, Laramie, Wyo.; sec.-treas., William A. Waldschmidt, 311 Leggett Bldg., Midland, Tex.; editor, W. C. Krumbein, Northwestern University; exec. dir., Robert H. Dott, AAPG, P.O. Box 979, Tulsa, Okla.

Education

Some 69 faculty members and students from 41 educational institutions have accepted summer appointments at **Argonne National Laboratory,** Lemont, Ill. The laboratory, operated by the University of Chicago for the U.S. Atomic Energy Commission, makes such appointments annually to encourage research and to strengthen teaching in fields related to atomic energy. Last summer 22 faculty members and 7 students from 24 institutions were in residence at the laboratory.

The department of speech of West Virginia University has been authorized to offer a course of study leading to the M.S. degree in **speech correction and audiology.** The significance of this new curriculum is that it will permit the admission of students holding a baccalaureate degree who do not have the undergraduate hours in speech at present required for entrance to the master of arts program in speech. Under the new plan, anyone with a baccalaureate degree from an accredited institution who also has had at least 2 years of successful professional experience in psychology, sociology, medical sciences, nursing, or teaching, can be admitted. The curriculum established for the achievement of the degree includes basic and advanced courses in speech correction, pathology, audiology, and psychology, and in addition, supervised clinical experience. Detailed information may be obtained from the Head, Department of Speech, West Virginia University, Morgantown, W.Va.

Western Reserve University has announced the establishment, at its School of Library Science, of the **Center for Documentation and Communication Research.** In cooperation with industry, government, and education, the center will conduct a program of research, guidance, and education directed toward improving the organization and use of recorded information.

Jesse H. Shera, dean of the School of Library Science, is supervisor of the center; the director and assistant director, respectively, are James W. Perry and Allen Kent. Research chemists who are specialists in documentation, both Perry and Kent hold the rank of associate professor of library science at Western Reserve. They have worked together since 1951, first at Massachusetts Institute of Technology and more recently at Battelle Memorial Institute, Columbus, Ohio. Both are experienced in the use of high-speed electronic devices in searching and correlating scientific information; in addition, Perry is a specialist in synthetic detergents and explosives and in scientific Russian, and Kent is a research worker in organic chemistry. Both have written widely on the documentation of scientific information. For 8 years Perry was chairman of the American Chemical Society's committee on scientific aids to literature and now he is an American representative on the commission on codification, ciphering, and punched-card techniques of the International Union of Pure and Applied Chemistry. Kent is on the special classifications committee of the Special Libraries Association.

A new two-story **astronomical library** building has just been completed at the University of California's Lick Observatory in Mount Hamilton. With the exception of the U.S. Naval Observatory library in Washington, D.C., the Lick Library is the largest and most complete astronomical library in the United States. Its nearly 25,000 bound volumes include many complete sets of periodicals and a number of old and rare books.

The new building, although it contains only 5000 ft^2, is expected to take care of the future library space needs for the observatory for more than 50 years. The acquisition of books is limited to astronomy and closely related fields.

Grants, Fellowships, and Awards

A 2-year project to study relationships between language structure and patterns of thought, the **Southwest Project in Comparative Psycholinguistics,** has been initiated by the Social Science Research Council of New York through its committee on linguistics and psychology. The study is being supported by a grant from the Carnegie Corporation of New York. During July and August a group of 18 psychologists, anthropologists, and linguists will meet at the University of New Mexico in Albuquerque to plan the first phases of this investigation, which will subsequently be carried out in the Southwest among various Indian and other cultures. John B. Carroll, Harvard University psychologist, is director of the project. Associated with him on the senior staff are Stanley S. Newman, a linguist at the University of New Mexico; Edward P. Dozier, an anthropologist at Northwestern University and himself an American Indian who came from one of the Pueblo groups in New Mexico; and Joseph B. Casagrande, an anthropologist on the staff of the Social Science Research Council at its Washington, D.C., office.

One of the primary goals of the research is to investigate the theory that the structure of a language influences the thought processes of its speakers in many subtle ways of which these speakers are unaware. This theory was proposed by the late Benjamin Lee Whorf, who made several studies of the Hopi Indian language that tended to support his views. In order to follow up Whorf's ideas, the members of the research staff plan to make intensive studies of a number of Indian languages, correlating the findings with

results of a variety of psychological tests and experiments.

Another goal of the research is to see whether the results obtained from psychological studies of the speech and thought processes of white Americans can be duplicated with individuals of other races, languages, and cultures. It is hoped that the final results of the project will be useful in understanding language behavior, particularly as it affects the ways human beings think, solve problems, and converse about their daily experiences. It is also possible that the results will have implications for the promotion of better communication between peoples having different cultures and speaking diverse languages.

The **Fannie E. Rippel Foundation** of Newark, N.J., has awarded $100,000 to Columbia University for research in cardiovascular and renal diseases and cancer. The Rippel Foundation has an endowment of $11,000,000.

Research and teaching fellowships are available at the **New York University College of Dentistry.** The stipend in each instance is approximately $3500. Application blanks may be obtained from the Committee on Research and Fellowships, College of Dentistry, New York University, 209 E. 23 St., New York 10.

In the Laboratories

More than 1500 employees of the **Radio Corporation of America** are taking courses at colleges and universities outside working hours under the corporation's Tuition Loan and Refund Plan. This plan makes it possible for employees to borrow money to pay the tuition for college courses; after the successful completion of the selected courses, the amount is refunded by the corporation. Also, employees who choose to pay for the courses themselves are reimbursed when the work has been successfully completed. During 1954 R.C.A. spent $141,000 for education reimbursements.

Last month the **Universal Atomics Corp.,** manufacturer of nucleonic instruments, opened a new street-level display area at 19 E. 48 St., New York, for the retail sale of atomic instruments. The new unit is designed to aid amateur and professional prospectors in the mining and oil industries, and to serve as a public information center on all phases of atomic information. The showplace handles the products of most leading instrument manufacturers; items for sale include geiger counters with prices starting at $19.95 and scintillation counters that cost up to $4995.

Engineers at the **Convair Division of General Dynamics Corp.,** San Diego, Calif., have devised solar furnaces from war-surplus antiaircraft searchlights. At a cost of $400 apiece, three 60-in. searchlights were acquired to augment Convair's 120-in. solar furnace, which has been in operation for a year in the high-temperature testing of metals, plastics, ceramics, and other materials used in aircraft and missiles. Only minor modifications were necessary to convert two searchlights into furnaces that produce temperatures of more than 7000°F. The searchlight mirrors concentrate sun rays on a focal point that is 0.3 in. in diameter, and at this point very high temperatures can easily be produced. By comparison, an oxyacetylene torch develops a temperature of about 5800°F.

Under ideal atmospheric conditions and with a perfect parabolic mirror, solar furnaces can produce temperatures of 8500°F—approximately 85 percent of the temperature of the sun's surface. The intense heat melts most common materials in seconds. Some specimens are shattered by thermal shock when moved into the focal point.

A tropical test station, **Sun Tests Unlimited, Inc.,** has been established in Sarasota, Fla., by Charles B. de Maya for field-storage, sunlight, insect-infestation, and weathering studies on foods, textiles, candies, paints, plastics, and wood products.

Instruments

The American Optical Co. has announced a new B-D-H **micromanipulator** that is manufactured by the Hastings Laboratories, Bass River, Mass. The instrument operates on the principle of thermal expansion of electrically heated fine wires. Up to four different microtools can be placed in the microscopic field at one time, and any selected pair of these can be used simultaneously. The unused pair is held in constant readiness. The tools, which are held in magnetic chucks, are controlled by a pair of joysticks that permit movement in all directions. A gain control provides adjustment of the hand-to-tool ratio. A sliding, locking microscope table allows quick changing of tools and tissue chambers. (American Optical Co., Instrument Div., Dept. Sc., Buffalo 15, N.Y.)

Control of the maximum torque transmitted from a driving to a driven machine can be obtained with a newly designed **torque-limiting coupling.** Up to the limit to which it is adjusted, the torque coupling acts like a conventional flexible coupling; beyond this limit the coupling permits a free-wheeling or slip effect between its two halves. Couplings are available in standard nominal ratings from 24 to 100,000 in. lb; all couplings can be adjusted ±50 percent from their nominal ratings. (Techniflex Corp., Dept. Sc., Port Jervis, N.Y.)

Bausch and Lomb has released a new **dual-grating spectrograph.** One grating, with a range of 2000 A (first order), operates in a practical range of 1850 to 24,000 A; the second, with a range of 1000 A (first order), operates in a practical range of 1850 to 12,000 A. The spectra are recorded on a flat 4- by 10-in. plate or on two 2- by 10-in. plates. The instrument has a "step-variable" slit: any one of several widths can be placed in operation by means of dial selection knob. Dispersions are available from 8 A/mm to 1.33 A/mm; the optical system allows each grating to

operate at f/24; electric controls are almost all automatic; and the resolution is more than 160,000 in the second order. (Catalog D-272. Bausch & Lomb Optical Co., Dept. Sc., 635 St. Paul St., Rochester 2, N.Y.)

A new **infrared water bath** maintains a constant temperature within 0.001°C. Controls, heater, and circulating pump are located in the base of the unit, and operation outside the nominal temperature range can be obtained without placing accessory equipment in the bath. Nominal operating range is from room temperature to 65°C; all controls and fittings are rated for operation between 10° and 100°C. (Chicago Apparatus Co., Dept. Sc., 1735 N. Ashland Ave., Chicago, Ill.)

Miscellaneous

The current issue of the *International Social Bulletin,* UNESCO quarterly publication, is devoted to the theme **"Mathematics and the social sciences."** The journal discusses the application of mathematics in the so-called "sciences of man"—as differentiated from the natural sciences. A copy of the *Bulletin* may be obtained for $1 from the Columbia University Press, 2960 Broadway, New York 27.

A **new agency for testing drugs** reported to have antirheumatic effects has been organized under the auspices of the Arthritis and Rheumatism Foundation. It will be known as CENTA, the initials of Committee for Evaluation of New Therapeutic Agents. John Lansbury of Philadelphia, chairman, said at the 3 June meeting in Atlantic City of the American Rheumatism Association that 26 arthritis clinics in 12 states have already agreed to participate in CENTA's work.

Notice is hereby given that from 31 Nov. 1955 the **International Commission on Zoological Nomenclature** will start to vote on the following cases, involving the possible use of the plenary powers, for the purpose specified against each entry. Full particulars of these cases were published on 31 May 1955 in parts 5 and 6 of vol. 11, *Bulletin of Zoological Nomenclature.* (i) *Sphenodon* Gray, 1831, (Cl. Reptilia), validation of emendation from *Sphaenodon*; Sphenodontidae Cope, 1870, validation of; (ii) *Hemiprocne* (Cl. Aves) validation of, as from Nitzsch, 1829; (iii) *Fistulipora* McCoy, 1846, (Cl. Bryozoa) validation of; (iv) *Aucella* Keyserling, 1846, (Cl. Lamellibranchiata) validation of; (v) *Muntiacus* (Cl. Mammalia) validation of, as from Rafinesque, 1815; (vi) *Scorpio* Linnaeus, 1758, (Cl. Arachnida), designation of *Scorpio maurus* Linnaeus, 1758, as type species of, and suppression of *europaeus* Linnaeus, 1758; (vii) *Oxypoda* Mannerheim, 1831, (Cl. Insecta, Order Coleoptera), designation of *Oxypoda spectabilis* Maerkel, 1844, as type species of; (viii) *gambianus* Ogilby, 1835, (Cl. Mammalia), validation of, and designation as type species of *Heliosciurus* Trouessart, 1880; (ix) *silvestris* Schreber, [1777], validation of, as name for European wildcat; (x) *Phacochoerus* Cuvier, 1826, (Cl. Mammalia), validation of; (xi) *Odobenus* Brisson, 1760, (Cl. Mammalia), validation of.

Proposals are also made for the adoption of "Declarations": (i) defining the expression *monotypical genus*; and (ii) defining the combination to be attributed to the specific name for a species described as belonging to one genus, but for which at the same time a second nominal genus is established conditionally. Attention is also drawn to the proposed rejection of names given to the so-called "Piltdown Man" as being names given to a fictitious form. Comments should be sent as soon as possible to Francis Hemming, Secretary to the Commission, 28 Park Village East, Regent's Park, London, N.W. 1.

The **National Multiple Sclerosis Society,** 270 Park Ave., New York 17, in cooperation with its sister organization, the Multiple Sclerosis Society of Canada, is still seeking to locate twins who have multiple sclerosis. Persons who are members of identical or fraternal twinships, one or both of whom are suffering from this disease, or who may know of twins either identical or fraternal who have this disease, are urged to communicate with Ntinos Myrianthopoulos, geneticist-in-charge of Multiple Sclerosis Studies, the Dight Institute for Human Genetics, University of Minnesota, Minneapolis, Minn.

This search was initiated last fall in order to assist a multiple sclerosis research project that is being carried out at the University of Illinois under the direction of Roland P. Mackay. To date, 33 sets of twins have been located in this country, and it is estimated that there are approximately 350 more to be found; it is thought that there are about 40 sets of afflicted twins in Canada.

The first issue of ***Weather Research,*** thought to be the only monthly magazine dealing exclusively with weather forecasts, was released in April by Blewett Weather Service. The contents are concerned solely with weather forecasts and weather changes and their effects, for the 222 main weather areas of the United States, with special emphasis on the western states. Charts show mean figures for maximum, minimum, and normal precipitation and temperature. Weather maps also indicate above-normal, below-normal, and normal precipitation and temperature expectations throughout the country.

S. E. Blewett, the editor, has specialized in weather forecasting since 1938; during the war he was in charge of meteorological research and long-range weather forecasting for military purposes at California Institute of Technology. In his research, which included a study of more than 15,000 weather maps, he classified the last 40 years of North American weather. From this, 14 basic patterns emerged with variations according to season, the basis for Blewett's present long-range weather forecasts. The subscription rate is $100 a year, and the journal is available from the Blewett Weather Service, 20069 Black Rd., Los Gatos, Calif.