News and Notes

Preliminary Announcement of Atlanta Meeting

The 122nd meeting of the American Association for the Advancement of Science, the annual meeting for the year 1955, will be held in Atlanta, Ga., 26–31 Dec. This will be the first time that the AAAS has met in the South since the 1941 meeting in Dallas—and the first time in the Southeast since the Richmond meeting of 1938. In the intervening years, the Association's annual convention has increased in size but, fortunately, the physical facilities of Atlanta have also increased so that it is again possible to meet in this part of the nation. (There have been eight AAAS meetings in the South: Charleston, S.C., 1850; Nashville, 1877; New Orleans, 1905; Atlanta, 1913; Nashville, 1927; New Orleans, 1931; Richmond, Va., 1938; and Dallas, 1941.) The Association returns to Atlanta after an interval of 42 years.

The four decades since the first Atlanta meeting in 1913 have witnessed a veritable revolution in nearly every aspect of science and society. Agriculture has become much more diversified and on an increasingly scientific basis, and great industries have multiplied and developed. A marked increase in the production of natural gas and electric power, added to abundant natural resources of water and minerals, have resulted in commensurate increases in original industries, such as steel, sulfur, fertilizers, and naval stores, and in a host of new developments. Many of the nation's largest and most modern oil refineries, pulp and paper mills, chemical plants, and textile mills, processing both natural and synthetic fibers, are in the southern states.

There have been advances in medicine and public health. Southern schools, colleges, and universities have expanded and improved to keep pace with the demands for well-trained graduates. The volume of research has steadily increased. In recent years, great atomic energy projects at Oak Ridge, Tenn., and elsewhere have begun to have a profound effect on southern science and technology.

Atomic energy. It is logical that this 122nd meeting of the Association will focus the nation's attention on the South's present status and future potentials and will bring to the region the newest developments in all fields of science. One instance of this will be a four-session symposium, "Atomic energy and agriculture," sponsored jointly by the Oak Ridge Institute of Nuclear Studies and the Association. This symposium, as planned by a committee headed by Cyril L. Comar, principal scientist, medical division, ORINS, will comprise a critical and realistic survey of the use of radioisotopes in the agricultural sciences—including unsolved problems, anomalies, and potentials.

The four parts of the symposium are as follows: (i) Soil-plant relationships—chairman, Nathan S. Hall, biology and medicine division, U.S. Atomic Energy Commission. Included: soil chemistry and fertility, soil testing, micronutrients, soil physics, and soil-root relationships. (ii) Plant metabolism—chairman, Harold B. Tukey, Michigan State University. Included: foliar absorption, translocation, photosynthesis, nitrogen metabolism, and plant regulators. (iii) Animal metabolism—chairman, Homer Patrick, University of Tennessee. Included: micronutrient metabolism, macronutrient metabolism, lactation and hormones, and amino acids-sulfur metabolism. (iv) Food sterilization—cochairmen, G. A. King, Nutrition Foundation, and B. F. Trum, Veterinary Corps, U.S. Army, assigned to AEC, Oak Ridge. Included: bases of radiation sterilization, isotope availability and use, design of facilities, biochemical problems, acceptance of radiated foods, present status and feasibility of radiation sterilization. The speakers will be recognized experts from all parts of the nation. The entire program, planned for a large audience, is coordinated with the research conference on "Use of isotopes in agriculture" to be held 12–14 Jan. 1956 at Michigan State University under the auspices of the Council of Participating Institutions of the Argonne National Laboratory.

International Geophysical Year. [*Science* **119**, 569 (1954)]. The International Geophysical Year—really 18 months, 1 July 1957 to 31 Dec. 1958—will transcend the previous International Polar Years of 1882–83 and 1932–33 in that it covers the whole globe, includes many more scientific disciplines, and will have the concerted efforts of the scientific organizations of some 40 nations. The AAAS Atlanta meeting will include the first, and probably only, program open to the general scientific public on the scope of the scientific programs of the U.S. National Committee for the IGY. The three sessions of the IGY symposium (Joseph Kaplan and Hugh Odishaw as program chairmen), sponsored jointly by the AGU, NRC, NSF, and the AAAS, will outline the problems and observations to be made in cosmic rays and solar terrestrial effects; ionospheric physics, aurora and airglow; geomagnetism; meteorology; oceanography; glaciology; and seismology. Speakers on these phases will come from various parts of the country.

Crisis in Science Education. At its meeting on 8 May, the recently established Committee on AAAS Meetings (Leonard Carmichael, Bernard D. Davis, John E. Ivey, Jr., Harry C. Kelly, and Howard M. Phillips) agreed that AAAS meetings should include and emphasize programs that are of importance to science as a whole. The committee decided that the Atlanta meeting should include consideration of the serious situation, in the United States today, of too few college students who elect majors and graduate work in the sciences and engineering and the related problem of the growing shortage of qualified science teachers at both the high-school and the college level.

The problem is of such general significance that a

special session—for the AAAS as a whole—will be held on the morning of 29 Dec. Speakers of national eminence will survey the steps that must be taken and the contributions that can be made by national organizations, federal and state agencies, industry, and educational institutions. AAAS sections will not hold sessions on that morning, and the participating societies will be asked to clear it also, if at all possible, so that all may be able to attend. All AAAS affiliates and interested agencies and institutions are invited to send delegates to this session. AAAS Council Meeting II on 30 Dec. will be devoted largely to what organized science can do as a major contribution to this emergency.

Participating societies. The annual national meetings of the following will be held with the AAAS:

- Academy Conference
- American Association of Clinical Chemists
- American Nature Study Society
- American Phytopathological Society
- American Society of Parasitologists
- National Association for Research in Science Teaching
- National Association of Biology Teachers
- Society for the Advancement of General Systems Theory
- Society of Systematic Zoology

Societies that have scheduled regional meetings are

- American Academy of Forensic Sciences
- American Geophysical Union, Southeastern Section
- American Association of Hospital Consultants
- American Meteorological Society
- American Physiological Society
- American Psychiatric Association
- American Society of Plant Physiologists, Southern Section
- Association of Southeastern Biologists
- Botanical Society of America, Southeastern Section
- Ecological Society of America
- Herpetologists League
- National Academy of Economics and Political Science
- National Association of Science Writers
- National Science Teachers Association
- National Speleological Society
- Society for the Advancement of Criminology
- Society for Research in Child Development

Other organizations that have planned special programs are

- AAAS Cooperative Committee on the Teaching of Science and Mathematics
- Alpha Chi Sigma
- Alpha Epsilon Delta
- Conference on Scientific Editorial Problems
- Conference on Scientific Manpower
- National Geographic Society
- Scientific Research Society of America
- Sigma Pi Sigma
- Society of the Sigma Xi
- United Chapters of Phi Beta Kappa

Center of the meeting. The recently enlarged Atlanta Municipal Auditorium will be the focal point of the meeting. Located within a few blocks of the downtown hotels, it will house (i) the AAAS Main Registration and Information Center; (ii) the Visible Directory of Registrants; (iii) the AAAS Science Theatre; (iv) the Annual Exposition of Science and Industry; (v) a number of sessions; and (vi) the Biologists' Smoker (open to all registrants), 29 Dec. Immediately across the street are the classroom buildings of the Atlanta Division of the University of Georgia where there will be a lounge and where many other sessions will be held.

AAAS headquarters hotel will be the much enlarged Dinkler Plaza. Other "downtown" hotels—all of them close together and near the auditorium—are the Atlantan, Georgia, Hampton, Henry Grady, Imperial, Jefferson, Peachtree on Peachtree, and Piedmont. Some of these will house sessions and, collectively, they afford a substantial number of sleeping rooms at a wide range of rates.

A second center of the meeting will be the Hotel Atlanta Biltmore area about 1½ miles due north of the downtown center—readily reached by trackless trolleys along Peachtree Street. Other hotels close by are the Cox-Carlton, Georgian Terrace, and Peachtree Manor. There will be sessions in the Biltmore and on the nearby campus of the Georgia Institute of Technology.

The facilities of Atlanta University, 1 mile west of the downtown hotels, have also been offered to the Association, and several sessions—notably the AAAS presidential address by Warren Weaver and the reception that follows—will be held here 28 Dec. Special buses will facilitate traffic between the hotels and Atlanta University that evening and daily between the hotels and the Auditorium.

The parasitologists will have an afternoon of demonstrations in the biological laboratories at Emory University, and an open house for visiting biologists may be scheduled.

Housing. Housing accommodations are adequate, but, as in all cities, single rooms are relatively scarce and double rooms used for single occupancy cost more. Sharing a room with a colleague or friend is strongly recommended. It is anticipated that dormitory units at both Georgia Tech and Atlanta University will be available. Detailed housing information and a coupon for room reservations will begin to appear in *Science* and *The Scientific Monthly* in July, at which time the headquarters of each section and participating society will be announced.

Advance registration. Advance registrants will receive the General Program-Directory early in December by first-class mail. Coupons will appear in AAAS journals beginning in July.

The Programs

A—Mathematics

Details of the program of Section A are not yet available, but it is probable that the sessions will come early or late within the period 26–31 Dec., so that it will be possible for mathematicians to attend also the meetings of the mathematical societies at Houston.

B—Physics

Section B (J. H. Howey, program chairman) will have sessions for invited papers on pure and applied physics—for example, radiation measurements—on graduate research programs, and on the teaching of physics. The Physicists' Dinner will be sponsored jointly with *Sigma Pi Sigma,* which will also arrange the symposium, "The role of physics in premedical education," cosponsored by Alpha Epsilon Delta. The *American Meteorological Society* (Seymour Hess, program chairman) will hold its 142nd national meetings at Atlanta and will also cosponsor the AGU program. In addition to arranging the afore-mentioned four-session symposium, "Atomic energy and agriculture," the *Oak Ridge Institute of Nuclear Studies* will cosponsor the symposium, "Some peaceful uses of atomic energy" of the National Academy of Economics and Political Science.

C—Chemistry

Section C (Robert S. Ingols, program chairman) will have three or four sessions for contributed papers, 27, 28, and 31 Dec.; a two-session symposium, "Effect of chemical agents on biological organisms"—not a catalog of reactions but an attempt to understand the mechanisms of the responses, 28 Dec.; a symposium, "Sedimentary kaolins along the southeastern fall line," including origin, processing, mineralogical studies, uses in paper industry, ceramics, and so on, 29 Dec.; a two-session symposium, "Radiation chemistry," 30 Dec.; and a vice-presidential address by Ingols and Chemists' Dinner, 29 Dec.

Alpha Chi Sigma will sponsor a Chemists' Luncheon, and it is anticipated that the *American Chemical Society, Georgia Chapter,* will hold its December meeting with the AAAS. The *American Association of Clinical Chemists* (Albert Edward Sobel, program chairman) has arranged a symposium, "Recent concepts in clinical chemistry," and a dinner, 26 Dec.; and two sessions for contributed papers in clinical chemistry, 27 Dec.

D—Astronomy

Section D's program, in process of arrangement, will include a vice-presidential address by Gerald M. Clemence.

E—Geology and Geography

Section E (Robert L. Nichols, secretary) will have concurrent sessions for contributed papers in geology and geography, one or more symposia, a smoker, and a vice-presidential address by Wallace W. Atwood, Jr.—with appropriate portions of its program cosponsored by the *Geological Society of America* and the *Association of American Geographers, Southeastern Division.* The *National Geographic Society* will have its usual excellent lecture and accompanying film. The *National Speleological Society* is planning a session for contributed papers, 27 Dec. and may have an additional joint program with the *Georgia Minerals Society.*

F—Zoological Sciences

The program of Section F (J. Gordon Carlson, program chairman) includes sessions for contributed papers in all fields other than systematic zoology and parasitology, 26, 27 Dec.; demonstrations, a Zoologists' Dinner, and vice-presidential address by Carlson, 29 Dec.; and a two-session symposium, "Formation and early development of the embryo," organized by R. C. von Borstel with Albert Tyler as chairman, 30 Dec. Egg formation, fertilization, and various physiological and cytological aspects will be considered. Speakers include E. J. Dornfeld, Oregon State; W. S. Vincent, State University of New York Upstate Medical Center; C. B. Metz, Florida State; A. Monroy, University of Palermo, Italy; J. R. Gregg, Columbia University; W. E. Berg, University of California, Berkeley; R. C. von Borstel, Oak Ridge National Laboratory; and Albert Tyler, California Institute of Technology. Section F is cosponsoring the symposia, "The species concept" of the Association of Southeastern Biologists, "Applications of immunochemistry to biological research" of the Society of General Physiologists, and "Atomic energy and agriculture," part III.

The national annual meeting of the *American Society of Parasitologists* (A. C. Walton, secretary) comprises five sessions for contributed papers, 28–30 Dec.; and a presidential address, annual luncheon, a business meeting, and demonstrations, 29 Dec. The *Herpetologists League* (James A. Fowler, program chairman) plans three sessions for papers, 28 and 29 Dec., and an all-day field trip, 30 Dec. The national annual meeting of the *Society of Systematic Zoology,* following the pattern of former meetings with the Association, will have sessions for contributed papers, one or more symposia or panels, evening lectures, and a business meeting. A feature will be the annual exhibition of the SSZ Library.

FG—Biological Sciences

The special program of the *Association of Southeastern Biologists* (Mary Esther Gaulden, program chairman) will include a meeting of the executive committee, 27 Dec.; a breakfast, 28 Dec.; and three symposia. The first of these, "The species concept," of broad interest to all biologists, is jointly sponsored by AAAS Sections F and G and the ASB and will be cosponsored by a number of other societies. Its two sessions, 29 Dec., will present the points of view of the taxonomist, paleontologist, bacteriologist, protozoologist, parasitologist, ecologist, biochemist, cytologist, and geneticist. The society will cosponsor "Formation and early development of the embryo," outlined under Section F, and "Applications of immunochemistry to biological research" of the *Society of General Physiologists.* This latter symposium, organized by Norman G. Anderson, with H. R. Wolfe as chairman, which will be held on 29 Dec., will include antibody production, preparation of cellular antigens, agar diffusion techniques, and applications to specific problems. The SGP, in addition, may have a session for contributed papers.

The *Ecological Society of America* (Eugene P. Odum, program chairman) plans a program—jointly, in part, with the Botanical Society of America, Southeastern Section (Robert B. Platt, program chairman)—that will include exhibits of ecological instrumentation, of interest to both physical and biological scientists; a field trip to Stone Mountain; and sessions for contributed papers jointly with Sections F and G. The annual national meeting of the *National Association of Biology Teachers* (John P. Harrold, program chairman) begins with a business meeting, 26 Dec.; includes three joint morning sessions with the ANSS and NSTA and three afternoon sessions, 27–29 Dec.; and concludes with an all-day field trip, jointly with ANSS, 30 Dec.

G—Botanical Sciences

Section G (Barry Commoner, secretary) is planning a two-session symposium that will deal in an integrated fashion with the economic, technologic, physiological, and biochemical aspects of "The tobacco plant" and "The cotton plant," 27 Dec. There will be two or more sessions for contributed papers, probably jointly with the *Botanical Society of America, Southeastern Section,* 28 and 29 Dec.; and a Botanists' Dinner and vice-presidential address by Lawrence R. Blinks, 29 Dec. Among the symposia that Section G will cosponsor are "Atomic energy and agriculture" and "The species concept."

The program of the annual national meeting of the *American Phytopathological Society* (Glenn S. Pound, secretary) includes three council meetings, 27 Dec.; two general business meetings, 28 and 30 Dec.; seven series of four concurrent sessions for papers, 28–30 Dec.; a symposium, "Plant pathologists can use television," 28 Dec.; and the Phytopathologists' Banquet, 29 Dec. The meeting will be held jointly with the annual meeting of the *APS, Southern Division.*

The *American Society of Plant Physiologists, Southern Section* (Aubrey W. Naylor, program chairman) is arranging a two-session symposium, "The mechanism of action of plant growth substances" that will be cosponsored by Section G.

I—Psychology

Section I (William D. Neff, secretary) has scheduled five sessions of invited papers on the following subjects, arranged as indicated: "The status of military psychology, 1955," Wilse B. Webb, 27 Dec.; "Recent studies of the sensory processes," John F. Hahn, and "The brain and behavior," Harlow W. Ades, 28 Dec.; "Learning," Stanford C. Erickson, and "Primate behavior," Arthur J. Riopelle, 29 Dec. The vice-presidential address by S. S. Stevens will be given 27 Dec., and there will also be sessions for contributed papers. The *Society for Research in Child Development* will hold a regional meeting at Atlanta.

K—Social and Economic Sciences

Section K (Donald P. Ray, secretary) will have one or more symposia centering on varying phases of the economic development of the South and probably another on political trends in the region. There will be a vice-presidential address by Conrad Taeuber. The section will cosponsor the program of Section P; Section M's symposium, "Orthopedic appliances and the economics of rehabilitation"; and the symposium, "Some peaceful uses of atomic energy," of the *National Academy of Economics and Political Science,* which is also cosponsored by *Pi Gamma Mu.*

L—History and Philosophy of Science

Section L (Jane M. Oppenheimer, secretary) will have a full program of sessions for invited and contributed papers and a vice-presidential address by Raymond J. Seeger, "Man and science." The symposia planned are "Mathematics and biology," "The sociology of science," "Science and the humanities," and "Creativity in science," all cosponsored by appropriate AAAS sections. The *Philosophy of Science Association* will cosponsor a portion of the section's program, as also will the *Southern Society for Philosophy and Psychology.* The recently organized *Society for the Advancement of General Systems Theory* (L. von Bertalanffy, executive secretary) has scheduled two afternoon sessions for contributed papers.

M—Engineering

Section M (M. J. Goglia, program chairman) plans a symposium that will be of wide interest to all fields of engineering—automation. A second symposium on "Orthopedic appliances and the economics of rehabilitation," with accompanying exhibits, arranged by Eugene F. Murphy and cosponsored by Sections K and N, will be held 30 Dec.; speakers include Robert L. Bennett, Augustus Thorndike, Eugene F. Murphy, Anthony Staros, W. Frank Harmon, McCarthy Hanger, Jr., Grace M. Fraymann, and Donald H. Dabelstein.

N—Medical Sciences

As in previous years, Section N (S. E. Luria, program chairman) will have a four-session symposium, the participants of which will come from all parts of the nation. This year's subject, "Microbiology and medical research," scheduled for 27 and 28 Dec., includes (i) "Nutrition of microörganisms," (ii) "Metabolic aspects of medical microbiology," (iii) "Radiation effects in microbiology," and (iv) "Chemotherapy." The fourth session will include the vice-presidential address of Luria, the 11th presentation of the Theobald Smith Award of Eli Lilly and Company, and the first presentation of the new AAAS-Anne Frankel Rosenthal Memorial Award for Cancer Research.

Alpha Epsilon Delta (Maurice L. Moore, national secretary) will have its customary annual luncheon and meeting with the AAAS, 28 Dec., with William McGlothlin of the Southern Regional Education Board speaking on "Problems of medical and dental education in the southern area." The society will cosponsor the symposium, "The role of physics in premedical

education," of Sigma Pi Sigma. The *American Academy of Forensic Sciences* will have a program of interest to its members and others in the medical-legal professions.

The *American Association of Hospital Consultants* (Jack Masur, program chairman), will have its usual special symposium with the AAAS. The program of the *American Psychiatric Association* (Harold E. Himwich, program chairman), will be a four-session symposium, "Physiological bases in psychiatry," 27 and 28 Dec.; the sessions—"New psychopharmacologic agents," "Mechanisms of actions in new agents," "Effects of alcohol on brain respiration and metabolism," and "Alcohol addiction"—will, in part, be a sequel to the highly successful program on psychiatry-pharmacology at the Berkeley meeting. This symposium at Atlanta will be cosponsored by Section N and the *American Physiological Society* (Fred A. Hitchcock, program chairman), which is tentatively planning a special program on the teaching of physiology.

Nd—Dentistry

Section Nd (Joseph F. Volker, program chairman) will have two symposia, "Newer knowledge of the physiology of the salivary glands" and "Oral structures in forensic medicine" on 28 Dec., cosponsored by the *American College of Dentists,* the *American Dental Association,* and the *International Association for Dental Research, North American Division.*

Np—Pharmacy

Section Np (John E. Christian, secretary) has scheduled seven sessions, 28–30 Dec., that will include a symposium and panel discussion on "Toxic household materials and appropriate antidotes," a specialized symposium on "Applications of nucleonics to the health professions," and contributed papers. The entire program will be cosponsored by the *American Association of Colleges of Pharmacy, American College of Apothecaries, American Pharmaceutical Association, Scientific Section,* and the *American Society of Hospital Pharmacists.*

O—Agriculture

The section (J. Fielding Reed, program chairman) is cosponsoring the entire symposium on "Atomic energy and agriculture," Section C's symposium on "Effect of chemical agents on biological organisms," and section G's symposia on "The tobacco plant" and "The cotton plant."

P—Industrial Science

Section P (H. M. Conway, Jr., program chairman) will have a two-session program, cosponsored by Section K, on "Resource development through science," which will include a regional case history of resource development—the South; specific resource studies on agriculture and land, water, minerals, and education and human resources; and a panel discussion that (i) will identify scientific approaches to the economic and industrial development of geographic areas, and (ii) will relate these specific techniques to the specific needs of the South. Section P will have its customary luncheon at which Malcolm Bryan, president, Federal Reserve Bank of Atlanta, will preside, and the retiring vice-presidential address of George L. Parkhurst will be given, on 28 Dec.

Q—Education

Section Q (Dean A. Worcester, secretary) anticipates an unusually strong program at the Atlanta meeting, 26–30 Dec. In addition to three sessions for contributed papers, there will be a symposium, "Education of the gifted," and another session, jointly with the *International Council for Exceptional Children*; three joint sessions with the *American Educational Research Association*; a two-session symposium, "Visual efficiency" arranged by N. Franklin Stump; a business meeting and a vice-presidential address by Carter V. Good. In addition, the section, together with the NSTA, AERA, the AAAS Cooperative Committee, the NABT, and the *Central Association of Science and Mathematics Teachers,* will cosponsor the symposium, "Implications and applications of recent research in science education" arranged by George G. Mallinson for the *National Association for Research in Science Teaching* (Clarence M. Pruitt, secretary), which also will hold its annual meeting with the AAAS.

The *AAAS Cooperative Committee on the Teaching of Science and Mathematics* (John R. Mayor, program chairman) will cosponsor the AAAS program on "The Crisis in Science Education." The regular regional meeting of the *National Science Teachers Association* (Katherine Hertzka, program chairman) with the AAAS will consist of some eight sessions, three of them jointly with ANSS and NABT.

X—Science in General

The annual *Academy Conference* (Leland H. Taylor, program chairman), composed of delegates and other numbers of the 42 academies affiliated with the Association, will hold a day of sessions and will sponsor the Tenth Annual Junior Scientists Assembly—a carefully planned program especially for high-school students interested in science. A new feature will be an Academy Information Center during the meeting period. The *American Geophysical Union* (Werner A. Baum, program chairman) will have three afternoon sessions, 27–29 Dec., to complement the three morning sessions of the International Geophysical Year, of which the AGU is a cosponsor.

The annual national meeting of the *American Nature Study Society* (Malvina Trussell, program chairman) will consist of a symposium, "Southern agriculture from 1913–1956," and social mixer, 27 Dec.; the annual banquet and presidential program—"Early naturalist explorers of the southeastern states" (illustrated) by Malvina Trussell, 29 Dec.; three joint sessions with the NABT and NSTA and a joint field trip, 30 Dec., with the NABT.

The fourth *Conference on Scientific Editorial Prob-*

lems (Marian Fineman and A. E. Tyler, cochairmen) plans several groups of invited papers on problems in editing, technical writing, and scientific publication. The fifth *Conference on Scientific Manpower* (Thomas J. Mills, program chairman) plans two afternoon sessions, 27 and 28 Dec., which will be cosponsored by the *Engineering Manpower Commission,* the *Scientific Manpower Commission,* the *NRC,* and the *NSF.*

The *National Association of Science Writers* (Odom Fanning, program chairman) will have its annual symposium and a business meeting with the AAAS. The annual address and award of the William Procter prize of the *Scientific Research Society of America* is scheduled for the evening of 29 Dec., following the society's joint luncheon with the Society of the Sigma Xi and the annual convention of RESA earlier that day. The annual address of the *Society of the Sigma Xi* will be held the evening of 27 Dec.; the 56th annual convention on the morning of 29 Dec. preceding the joint luncheon with RESA. The 16th annual lecture of the *United Chapters of Phi Beta Kappa* is scheduled for the evening of 30 Dec.

RAYMOND L. TAYLOR
Associate Administrative Secretary, AAAS

Radiation Hazards and Politics

An open meeting on Nuclear Radiation Hazards and their Political Implications was held in Washington, D.C., on 28 Apr. under the sponsorship of the local chapter of the Federation of American Scientists. With M. Stanley Livingston, professor of physics at Massachusetts Institute of Technology, as moderator, the subject was discussed by Sen. Clinton Anderson, chairman of the Joint Committee on Atomic Energy; Rep. Chet Holifield, a member of the Joint Committee; Bentley Glass, geneticist and professor of biology at Johns Hopkins University; and John S. Toll, chairman of the physics department at the University of Maryland. There was a capacity audience, consisting primarily of visitors from all over the United States who were in town to attend the annual Washington meeting of the American Physical Society.

In his opening remarks, Livingston described the difficulties the planning committee had encountered in finding a physicist to speak on the program.

> Refusals [were made for] . . . various reasons. Some described the impossibility of speaking authoritatively on a topic in which so much information is still classified; others expressed a downright fear of involvement in a controversial issue which might cause them security clearance trouble. After many refusals the planning committee did obtain acceptances from two physicists who are employed in the Defense Department. However, these physicists later withdrew when the Defense Department imposed new restrictions on public statements by its employees (the so-called "Wilson Order"). We did finally find a few competent authorities who would have been willing to speak but had other, over-riding engagements. Finally, in desperation and in open rebellion against these pressures, Dr. Toll and I agreed to stick our necks out and appear on this program.
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> This experience illustrates one of the political dilemmas in which we find ourselves. . . . Those who know won't speak, and those who don't know cannot speak with authority.

Next, in a presentation of general information, Toll discussed the physical effects of radioactivity caused by atomic bomb explosions. He emphasized that it is not possible to arrive at clear conclusions, that "The problem of radiation hazards is complex, for it involves such diverse fields as physics, meteorology, and biology, and depends on many phenomena which are not yet understood." He described the wide variety of possible atomic weapons and then went on to say that the general public, even some inner councils of the Government, are often considering defenses for last year's weapon rather than tomorrow's. "Sound planning requires not only information about previous explosions but also sensible guesses as to future developments. . . ."

After referring to the many contradictory statements in the press, Glass devoted his talk to an appraisal of the present knowledge of the genetic consequences of radiation. He pointed out that there are certain matters about which geneticists are in full agreement and presented the following summary.

> (i) High-energy radiation produces mutations in all kinds of plants and animals and microbes; and no one doubts that it will do so in human beings as well. (ii) The frequency of mutations in any particular species and kind of cell is proportional to the dose of radiation. . . . (iii) The effects of successive exposures are cumulative. (iv) There is no recovery. . . . (v) Mutations are overwhelmingly deleterious. . . . (vi) Mutations occur spontaneously; and only a portion, probably only a small portion, of them are caused by natural high-energy radiation. . . .

In conclusion Glass said:

> These are two grave dangers in the present situation. One is our ignorance. In particular, if the present number of harmful genes per person and the over-all spontaneous mutation rate are much lower than we now estimate them to be, then the danger of the present levels of radiation is correspondingly multiplied. Our ignorance of the true rate at which mutation is induced by radiation may luckily tend to counterbalance this if it turns out that the radiation-induced rate in the immature female germ cells is much lower than in the male. . . . Above all, there is our ignorance as to how much increase in the mutation rate a human population can tolerate.
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> The second peril is that eventually, as the number of test explosions increases and the long-lived isotopes accumulate, as the industrial atomic energy plants multiply and the disposal of atomic waste products becomes a more and more critical problem, the cumulative exposure to radiation may come to exceed by far the 0.2 r/yr which was in 1949 the average dose received by Oak Ridge and Hanford workers. The present "permissible" dose of 0.3 r/wk or 15 r/yr, if delivered to the entire population, [might] multiply the present mutation rate by at least 4.5 and maybe

as much as 150 times. Who, knowing the predominant harmfulness of mutation, can dismiss such a possibility lightly?

Rep. Holifield urged that the United Nations be strengthened and observed that "It is high time we stopped treating that world organization as an orphan. . . ." He stated that neither civil defense nor air interceptor devices would do much good in a mass enemy H-bomb attack and indicated that our greatest safety lies in fully informing the world's population of the horrors of nuclear warfare. He suggested that the President make a series of television and radio talks to arouse the public.

Both Rep. Holifield and Sen. Anderson, the last speaker, expressed concern over the needless secrecy restrictions. Sen. Anderson indicated that secrecy sometimes goes to remarkable extremes and cited a case in which he urged declassification of a scientific finding that had already been published in prominent journals of three other countries. He was "enthusiastically voted down" by a majority of the committee. In commenting further on the Government's slowness in making information available, he pointed out that it was 10 months before there was any official report on the first hydrogen bomb explosion. The story of the effects of fallout on Japanese fisherman, which could have had no possible security implications, was concealed until the news was released from other sources. "We need to talk more frankly to the American people," he said. "I don't think they are afraid to face the facts."

Science News

Physicians, dentists, and veterinarians on active duty as commissioned officers in the military services and the U.S. Public Health Service receive salaries of $100 per month more than nonmedical officers of equal grade. To resolve this inequity, H.R. 2442 has been introduced into the Congress by Rep. Olin E. Teague (D., Tex.). This bill proposes a **bonus of $100 per month** for officers who hold a doctor's degree (or its equivalent) in science, and who are performing duties in the fields of their special training.

Many scientific organizations have officially endorsed H.R. 2442, including the Entomological Society of America, which has adopted a resolution containing the following paragraphs:

> WHEREAS, This Society holds that personnel possessing the degree of Doctor of Science or Doctor of Philosophy in entomology, parasitology, or any other basic science related to medicine and acceptable to the Surgeon General should be granted the same recognition, incentive payments, and other considerations extended to physicians, surgeons, dentists, and veterinarians by the Armed Services Career Compensation Act, therefore
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> BE IT RESOLVED that the Entomological Society of America, through its Governing Board, go on record as unreservedly favoring the policy set forth in this resolution and favoring the passage of House Resolution 2442. . . .

Nearly **1100 abstracts** have been received by the Atomic Energy Commission from U.S. scientists and engineers who desire to participate in the United Nations International Conference on Peaceful Uses of Atomic Energy at Geneva next August. In announcing that the first group of 189 abstracts of papers tentatively accepted has been forwarded to the United Nations, Willard F. Libby, acting chairman of the AEC, expressed gratification at the widespread interest in the meeting shown by the scientific community.

> This overwhelming response is heartening for two reasons. It demonstrates our desire to share with the world the results of our researches and applications of atomic energy for peaceful purposes. Also, it gives evidence of the substantial contributions the United State has to make to all sections of the comprehensive agenda adopted for the conference.

George L. Weil, technical director of this country's participation in the conference, explained that this was only the first group of abstracts of United States papers to be submitted to the U.N.'s secretary-general of the conference. Weil also pointed out that within the time allotted to the United States at the conference, only a relatively small number of all the papers eventually accepted can be presented in person by the authors. Other papers will be published in the conference proceedings.

The 189 abstracts propose papers in the broad fields of applications of atomic energy to medical research, agriculture, and industry; applications of radioisotopes in process and quality control; industrial uses of fission products; developments in instrumentation and remote controls necessary for handling radioactive materials; and natural occurrence of uranium in this country and extracting and refining uranium ores. A list of the titles of all papers submitted so far for the conference, including the abstracts from the United States is available at U.N. headquarters in New York.

"Portrait of a scientist, a tribute to Linus Pauling" is the title of an article by George Beadle that appeared in the April issue of *Engineering and Science,* monthly publication of California Institute of Technology. In one section Beadle, who is chairman of the institute's division of biology and president of the AAAS, discusses the excesses of the security system.

> . . . [Scientists] want no special privileges. The intellectual freedom of science is no different in principle from any other kind of intellectual freedom. It is a counterpart of freedom of speech, of freedom of the press and of freedom of religion. None of these freedoms should be a freedom divorced from responsibility. No sensible person would claim otherwise.

The article ends with:

> I want to close by saying I regard it a great privilege to know and to be associated with Linus Pauling. . . . I am proud to belong to the faculty of an institution with the foresight to see his greatness and the wisdom to give its development full freedom. I am proud that Caltech has a president who knows the

true meaning of academic freedom and who has the courage to speak and act accordingly. I contrast our good fortune with the lot of a certain few of our sister universities whose presidents belie by their acts the fine-sounding words of their public utterances. I am grateful for a Board of Trustees that has not succumbed to the disease of mistrust and suspicion that could so easily undermine their faith in the wisdom of academic freedom and the rightness of liberal decency.

Kenneth H. Schmidt, a Danbury, Conn., inventor who was chief engineer of the White House communications system under President Roosevelt, now runs a successful business manufacturing a **wiretap-proofing device.** Confining himself exclusively to government work in Washington and Ottawa, he claims that he has made more than 100 installations in the Pentagon alone.

On 20 June (for Asia time-zones) the sun will be totally obscured by the moon for observers along a narrow strip of the earth's surface beginning in the Indian Ocean and extending east across Ceylon, Bangkok, Thailand, part of the Philippines, and the Pacific Ocean north of the Solomon Islands. At one point along this strip—in the South China Sea—the maximum duration of totality will occur—7 min, 7.9 sec. There will not be a **total eclipse** of longer duration in this century. In fact, according to many astronomers, the duration of this eclipse has not been surpassed since A.D. 717. In 1973 an eclipse of nearly the same duration will take place, but astronomical calculations indicate that it will be slightly shorter than the one this year.

Observers from Arabia to New Zealand will see this solar eclipse as a partial one. During the day of 20 June on the eclipse path, it will be the night of 19–20 June in New York. The eclipse will not be visible from any location in the American continents.

The American Museum of Natural History has announced the establishment of the **Southwestern Research Station** on the eastern slope of the Chiricahua Mountains, near Portal, Cochise County, in southeastern Arizona. The property, which is at an elevation of 5400 ft, is within the limits of Coronado National Forest. The year-round station was established to provide research facilities for investigators and students in all branches of science who are conducting studies that can utilize the faunal, floral, and geologic features of the area. The museum's new unit is under the direction of Mont A. Cazier, chairman and curator of the department of insects and spiders. All inquiries, and requests for the descriptive booklet that is available, should be directed to Cazier at the American Museum of Natural History, Central Park West and 79 St., New York 24.

In a paper delivered at the recent meeting of the Association of American Physicians, Albert B. Sabin of the University of Cincinnati described encouraging progress in his work with 30 prisoner volunteers who received **live polio virus** last January. All 30 participants in the experiment, inmates of the Chillicothe, Ohio, federal reformatory, produced resistance to the disease in the form of antibodies. In addition, none of the volunteers became ill from the infection they developed; in fact, infection could be determined only by laboratory tests. The men received varying amounts of the virus culture in a teaspoonful of milk. It was found that 0.001 ml of the fluid was enough to produce an immunizing infection.

The work, aided by a grant from the National Foundation for Infantile Paralysis, is still in progress. After successful experiments in which the viruses were changed from highly virulent or paralyzing varieties to nonvirulent or harmless varieties, the strains were considered safe for testing on human beings.

The U.S. Department of Agriculture has reported that, as of 20 Apr., more than 13 million acres of land in seven southern Great Plains states had been damaged by **wind erosion** since last November. This is 3 million acres more than was reported on 1 Apr. These estimates are based on information compiled by the Soil Conservation Service. In addition, another 19 million acres of land is in condition to erode because it lacks adequate vegetative cover. Secretary Benson is studying the affected areas.

A suit filed on 14 Mar. in U.S. District Court for the District of Columbia on behalf of **Martin D. Kamen,** associate professor of chemistry at Washington University in St. Louis, charges that procedures by which American citizens are denied passports by the State Department for alleged communist activities or affiliations restrict liberty and freedom to travel without regard for the "due process of law" guaranteed by the Constitution. Kamen and his supporters hope that the case will answer the basic question of whether or not the due process clause covers the right to travel. The Fifth Amendment states: ". . . nor shall any person . . . be deprived of life, liberty, or property without due process of law. . . ." Suppose a scientist wishes to attend a foreign conference or lecture in a foreign university. Can he, at the pleasure of the Passport Division, be deprived of the right to practice his profession? Or may his passport be denied only through procedures that satisfy the due process requirement?

In 1952, a Special Federal Court apparently sustained the latter view in the only previous case of the sort, that of Anne Bauer, a journalist. The court held that before the State Department could revoke a passport it would have to inform the person affected of the reasons therefor, and grant that person a hearing. In September of 1952 Secretary Acheson issued new regulations providing for an appeal procedure in cases of passports denied or revoked because of charges involving communism. However, even today, no appeal mechanism has been set up for cases not related to the communist question.

Kamen, who is one of the coinventors of the radiocarbon tracer technique, joined the staff of the Radi-

ation Laboratory of the University of California in Berkeley in 1936. During the war the laboratory became a part of the Manhattan Project, and many scientists there began to do secret work, including Kamen, who became a group leader. In 1944 he was called in by the personnel office of the laboratory and told that he was being dismissed for "indiscretion." No other explanation was given.

Kamen's passport was revoked in 1947, and he has not been able to regain it, although he has received numerous professional invitations from several foreign countries—England, Australia, France, and Israel. When he first made application to the Passport Division in September 1952, he was refused on the grounds that he had associated with known Communists, had belonged to an organization now on the Attorney General's list, and had furnished classified information to Soviet officials. Kamen has exhausted all means for administrative reconsideration of his case provided under State Department regulations. However, the original decision not to grant him a passport still stands, although both the Army and the Atomic Energy Commission have informed the Passport Division that they do not object to Kamen's leaving the country.

The current suit is the first step in judicial review of the case. It charges that in denying Kamen a passport, "his personal liberty and freedom to travel, work, and consult with others has been restricted, and his opportunity to acquire and disseminate knowledge essential to his professional advancement and the advancement in the field in which he works has been restricted." The State Department's action is characterized as "arbitrary, capricious and unlawful" because sufficient evidence to support the allegations on which denial of the passport was based was never presented. Consequently, it is asserted, the department's action violates the due process clause of the Fifth Amendment. A mandatory injunction directing the State Department to issue a passport is requested.

In April the Government filed a motion to dismiss, which was denied, that was based chiefly on the premise contained in this sentence from the brief: "Since earliest times the Secretary of State has had complete and absolute control and discretion over the grant or denial of passports."

A news release from the **Scientific Manpower Commission** reports that a survey it has just completed "indicates that industry is adding 5000 to 7000 new scientists a year to its payroll. More than 1000 companies took part in the study. Aided by a panel of 30 industrialists, educators, and Government scientists headed by E. B. Peck of Esso Research and Engineering Co., the commission canvassed 1600 employers to determine how many scientists they are hiring and losing. Howard A. Meyerhoff, executive director of SMC, estimates that the 58,670 scientists on company payrolls on 31 Dec. 1953 represent more than half of those employed in industry.

"Chemists outnumber all others combined, with 35,616 of the total. Geologists, physicists, biologists, mathematicians, and psychologists follow in that order. Women account for 7.6 percent of the total. The survey also revealed that slightly less than half of the scientists included in the tabulation work for large organizations employing 500 or more individuals with technical scientific training. . . . The report shows a labor turnover of 9.5 percent among the highly trained specialists, with roughly a 3-percent replacement rate for deaths, retirements, and losses to nontechnical occupations. In 1953, the year for which complete returns were obtained, 8.2 percent of the losses were to the armed forces.

"Noting a drop of nearly 500 in the number of scientists hired in 1953 as compared with 1952, the report points to the 12-percent drop in the number of science graduates in the same 1-year period. Although he would not say definitely that the two were related, Meyerhoff stated:

> Industry failed to get all the scientists it needed in 1953 and again in 1954, when there was a further decline of 4 to 5 percent in the number of scientists graduating with bachelors' degrees. The dwindling numbers must have been a factor, but other factors cannot be ignored—for example, the heavy drain for military service, especially after Korea, when many deferments were terminated.

H. Van Pel, the fisheries officer for the South Pacific Commission, has announced that Dutch scientists have caught large **sharks and sawfish in a mountain lake** called Sentani 20 mi inland in western Dutch New Guinea. Some of the smaller species have been sent to the Netherlands for examination. The scientists were unable to name the variety of sharks, but one sawfish was reported to be more than 10 ft long.

How these salt-water fish became acclimated to fresh water in a lake 500 ft above sea level is unknown. The only explanation that has been suggested, Van Pel said, is that

> . . . the lake, thousands of years ago, was fed from the sea at sea level. Then a volcano eruption took the lake 500 ft up when mountains rose out of the sea. The change from salt to fresh water was so gradual that the sharks and other fish became acclimated to it.

The first direct **synthesis of testosterone** from simple coal-tar products has been accomplished by a group of chemists at the University of Wisconsin. The research that led to the synthesis was carried out by W. S. Johnson and a colleague, Raphael Pappo, visiting lecturer in chemistry from the Weizmann Institute, Israel, in cooperation with Brian Bannister and E. J. Pike. The project is part of a broad research program at Wisconsin for the synthesis of hormones involved in sex, pregnancy, and the life-maintenance substances produced by the adrenal glands.

The only practical method to date for synthesizing testosterone has required that a complex natural steroid such as cholesterol be used as a starting point. Johnson and Pappo synthesized the sex hormone from the coal-tar product 1,6-dimenthoxynaphthalene. However, they have emphasized that the method is not practical in its present form.

Scientists in the News

Leonard Woolley, British archeologist, has received the Lucy Wharton Drexel medal, highest award of the University Museum of the University of Pennsylvania. The medal was presented on 21 Apr. when he opened a rebuilt University Museum exhibit hall, "The Royal Tombs of Ur," which provides a new setting for some of the 4500-year-old jewelry, art objects, and human remains discovered by the Woolley expeditions in Iraq. The new hall was designed by Antonio Lebrija, an artist-anthropologist of Mexico's National Institute of Anthropology and History. The Drexel medal is given for the "best archaeological excavation, or for the best publication based on archaeological research by an English-speaking scholar within the previous five years." It has been awarded only once since 1913 and only 12 times since it was established in 1902.

Woolley, who celebrated his 75th birthday last month, has dug for almost half a century in Nubia, Egypt, Syria, Iraq, and Turkey. He is being cited especially for four of his recent publications. They are *Alalakh* (1953), the story of his unearthing of an ancient city in southern Turkey before and after World War II; *Spadework* (1953), a popular summary of his field experiences since 1906; *Carchemish III* (1954), a scientific report of his excavations in Syria more than 40 years ago; and *Early Periods,* which is now being published and is the fifth volume of his series on Ur.

R. S. Jane and H. G. Thode have been appointed new members of the **National Research Council of Canada** for 3-year terms that began 1 Apr. Jane is executive vice president of Shawinigan Chemicals Ltd., Montreal, and Thode is principal of Hamilton College and director of research at McMaster University, Hamilton, Ont.

Retiring members are Brig. F. C. Wallace, executive vice president, Duplate Canada Ltd., Fiberglas Canada Ltd., and Smith and Stone Ltd., Toronto, Ont.; and J. H. L. Johnstone, head of the department of physics and dean of the faculty of graduate studies, Dalhousie University, Halifax, N.S. Both have given their services to the council continuously for 6 years.

Three other members have been reappointed for a further term of 3 years. They are C. J. Mackenzie, president, Atomic Energy Control Board, Ottawa, Ont.; T. Thorvaldson, dean of graduate studies emeritus, University of Saskatchewan, Saskatoon; and W. H. Watson, professor and head of the department of physics, University of Toronto, Toronto.

Murray Gell-Mann, former assistant professor of physics and member of the Institute for Nuclear Studies at the University of Chicago, has joined the staff of California Institute of Technology as associate professor of physics. Gell-Mann's work has been concerned with the theory of atomic nuclei and the basic particles of which nuclei are composed.

E. Kennerly Marshall, Jr., professor of pharmacology and experimental therapeutics in Johns Hopkins University School of Medicine, will retire from active service at the end of June. He will be succeeded as professor and head of the department by **Gilbert H. Mudge,** now associate professor of medicine at Columbia University College of Physicians and Surgeons. With the exception of 2 years, 1919–1921, at Washington University, St. Louis, Marshall has been a member of the Hopkins medical faculty continuously since 1911 and has served under six of the seven presidents of the university. In his long and outstanding career, Marshall has taught and conducted his researches in three different fields of medical science, physiological chemistry, physiology, and pharmacology, the latter two as professor and head of department.

Herbert B. Nichols, formerly science editor of the *Christian Science Monitor* and information officer, U.S. Geological Survey from 1949 to 1954, has returned to the latter post after a year with General Electric Co. at Schenectady, N.Y., where he aided in the establishment of a public relations unit for the Research Laboratory. **Ned Landon,** who joined the staff at the laboratory as an information specialist in 1954, has been named manager of public information.

Laurence Irving, chief of the physiology section, Arctic Health Research Center, Anchorage, Alaska, was recently made a member of the Norwegian Academy of Science and Letters.

Gregory Zilboorg, practicing psychiatrist, consultant in criminology to the United Nations, and clinical professor of psychiatry at the State University of New York College of Medicine in Brooklyn, has been elected vice president of the International Congress of Criminology that is to take place in London, 11–18 Sept.

James Henry Ferguson, assistant professor in Tulane University School of Medicine, has been appointed professor of obstetrics and gynecology and chairman of the department at the School of Medicine, University of Miami, effective 1 June.

Bernard C. Glueck, Jr., of Ossining, N.Y., director of scientific research (sex aberrations) at the New York Psychiatric Institute and since 1952 director of the sex delinquency research project at Sing Sing Prison, will leave state service on 31 July. Glueck, who is also attending psychiatrist at Ossining General Hospital, instructor in psychiatry at Columbia University, and associate psychoanalyst at Columbia University Psychoanalytic Clinic, will sever his present affiliations to become an associate professor in the department of psychiatry at the University of Minnesota Medical School. The results of Glueck's 6-year research project in sex delinquency for the state of New York will be released sometime later this year.

Sponsored by a central committee of the Swedish Medical Schools, **Mark Nickerson,** professor of pharmacology and medical research at the University of Manitoba, Winnipeg, Canada, recently presented a series of lectures on various aspects of shock and of autonomic nervous system blockade at Stockholm, Lund, Göteborg, and Uppsala, Sweden. He also lectured in Denmark, England, and Scotland during his trip.

Robert B. Woodward, Robert Loeb professor of chemistry, has been selected as Harvard University's leading contributor to science and the benefit of mankind in 1954–55. President Nathan M. Pusey recently presented him with the newly established George Ledlie prize, a $1000 award that is recommended by vote of the council of deans. It is to be given every 2 years.

Woodward, who synthesized quinine 10 years ago and who made important contributions to the synthesis of cortisone, reported two more major chemical results last fall: the synthesis of strychnine, an achievement in pure research; and the synthesis of lysergic acid, which is widely used in obstetrical medicine.

Ernest W. Goodpasture, professor of pathology at Vanderbilt University, and originator of the method of growing viruses in a fertile egg culture, was recently awarded the Howard Taylor Ricketts medal of the University of Chicago. The award is a national honor given by the university in recognition of outstanding work in medical research.

Alfred P. Kraus, assistant director of the department of medical laboratories of the University of Tennessee College of Medicine, and his wife, **Lorraine M. Kraus,** who is a graduate student in the university's division of chemistry, will assist the University of Indonesia, Djakarta, in the reorganization of its medical college. Kraus, who will depart 1 July on a year's leave of absence, will become visiting assistant professor of hematology, and Mrs. Kraus will follow in September to serve as an instructor in biochemistry. The couple will be participating in the University of California-University of Indonesia project in medical education that is sponsored by the State Department.

Henry Wise, senior physicist, has joined the physical sciences division of Stanford Research Institute. He was formerly a group leader in chemical kinetics and combustion in the Jet Propulsion Laboratory of California Institute of Technology. At S.R.I. Wise will aid in the establishment of a group in chemical physics to conduct fundamental research on problems related to combustion processes.

Walsh McDermott, editor of *American Review of Tuberculosis and Pulmonary Diseases,* will succeed **Esmond R. Long** as director of medical research of the National Tuberculosis Association when the latter retires on 1 July. In addition, **Floyd M. Feldmann,** formerly assistant to N.T.A.'s managing director, has been named medical director and will be associated with McDermott in the conduct of the research program.

Long, who is also director of the Henry Phipps Institute of the University of Pennsylvania, Philadelphia, is relinquishing all administrative work to devote his time to research and writing. He has headed the N.T.A. division of medical research since an expanded research program was launched in 1947 and has directed the program through its years of greatest growth.

James S. Robertson heads the newly formed medical physics division, formerly a part of the physiology division, at the Brookhaven National Laboratory, Upton, N.Y. Other members of the group are V. P. Bond, E. E. Stickley, and Richard I. Weller. The new division studies problems of radiation dosimetry, both biological and physical.

An **international team of scientists** is joining the staff of the United Nations in New York to assist in preparations for the International Conference on the Peaceful Uses of Atomic Energy that will be held in Geneva next August. These men will serve as scientific secretaries under the conference secretary-general, Walter G. Whitman, and his deputy, Viktor Vavilov. Fourteen of them have started on their duties, and the other three are expected soon. The group contains three men from the United Kingdom, two each from Canada, France, the Union of Soviet Socialist Republics, and the United States, and one each from Argentina, Brazil, India, Japan, the Netherlands, and Yugoslavia. A list of the scientific secretaries follows:

Robert A. Charpie, assistant director of research, Oak Ridge National Laboratory, Oak Ridge, Tenn.; physicist, age 29.

Frederic de Hoffmann, assistant vice president for nuclear planning, Convair Division of General Dynamics Corp., San Diego, Calif.; physicist, age 30.

Donald J. Dewar, scientific adviser to the Atomic Energy Control Board of Canada, Ottawa; chemist, age 39.

Nikolai A. Dobrotin, deputy director and chief of the Laboratory on Cosmic Rays of the Lebedev Physical Institute of the Academy of Sciences of the U.S.S.R., Moscow; professor, physicist, age 46.

André Finkelstein, Ingénieur au Commissariat à l'Energie Atomique, Paris; chemist, age 32.

John Gaunt, principal scientific officer, United Kingdom Atomic Energy Authority, Harwell, Berkshire; chemist, age 35.

Jacob A. Goedkoop, senior scientist, Norwegian-Netherlands Joint Establishment for Nuclear Energy Research, Kjeller, Norway; physical chemist, age 33.

Reinosuke Hara, research fellow at Harvard Medical School and secretary of the Japan Radioisotope Association; chemist, age 30.

Elwyn O. Hughes, research officer, Division of Applied Biology, National Research Council of Canada, Ottawa; biologist, age 39.

Leonard F. Lamerton, senior assistant physicist, Royal Marsden Hospital, London; reader in physics applied to medicine, University of London; biophysicist, age 39.

José Leite Lopes, member, Atomic Energy Commission of the Brazilian National Research Council; professor, physicist, age 36.

Derrik J. Littler, principal scientific officer, United Kingdom Atomic Energy Authority, Harwell, Berkshire; physicist, age 35.

Aleksander Milojevic, Institute "Boris Kidric," Vinca, Belgrade, Yugoslavia, physicist.

Brahm Prakash, Atomic Energy Commission of India; metallurgist.

Ivan D. Rozhansky, scientific secretary of the physical section of the Physics and Mathematics Department, Academy of Sciences of the U.S.S.R., Moscow; physicist, age 41.

César A. Sastre, staff member of the reactor group, Comisión Nacional de la Energia Atómica, Argentina; engineer, age 27.

Michel Trocheris, Commissariat à l'Energie Atomique, Centre de l'energie nucléaire de Saclay, France; physicist, age 34.

Maj. Gen. J. D. O'Connell has been sworn in as Chief Signal Officer of the U.S. Army; he had been the Deputy Chief Signal Officer for the past 3½ years.

James W. and Constance S. Warwick, both of Harvard University, have been appointed to the scientific staff of the University of Colorado's High Altitude Observatory. They will carry out research on the formation of solar flares and their relationship to the solar corona, and will also study effects of solar activity on the earth, with particular emphasis on ionospheric effects.

The Franklin Institute and the Rittenhouse Astronomical Society held a joint meeting at the institute on 22 Apr. during which the society presented its Rittenhouse medal to **Harold Spencer Jones,** head of the Greenwich Observatory since 1933 and British Astronomer Royal. Jones spoke on "Life on other worlds," the title of a book that he wrote 25 years ago.

The Johnson Plaquette, an international award established by the Royal Swedish Academy of Engineering Sciences, was presented for the first time to **Pierre Ailleret,** the Research Director of Electricity of France. Ailleret was recognized for contributions to the development of the French electric power system.

The Johnson Plaquette is supported by a gift from the first honorary member of the Swedish academy, the shipowner and industrialist Axel A. Johnson. Every second or third year, a technologist is to be invited to deliver an honorary public lecture describing his research contribution to the engineering sciences. In conjunction with the lecture, the plaquette will be presented to the lecturer, and in addition he will be invited to make a study tour of Sweden, accompanied if he wishes by a member of his family.

Robert L. Fullman has been appointed manager of the new materials and processes studies section at the General Electric Research Laboratory in Schenectady. He has been at the Research Laboratory since 1948, specializing in studies of recrystallization, grain growth, and the origin of microstructures in metals and alloys.

Maurice S. Tarshis, former director of the tuberculosis research laboratory, Veterans Administration Medical Teaching Group Hospital, Memphis, Tenn., and director of tuberculosis bacteriology research at the Veterans Administration Hospital, Oteen, N.C., has been appointed to the research staff of the department of bacteriology, University of California, Berkeley.

Helgi Johnson, director of the Bureau of Mineral Research and chairman of the department of geology at Rutgers University, has been named executive director of the Yellowstone-Bighorn Research Association at Red Lodge, Mont., effective 1 June.

Meetings

The 1955 **Heat Transfer and Fluid Mechanics Institute** that will take place at the University of California, Los Angeles, 23–25 June, is the eighth of a series initiated in 1948 for the purpose of making avaliable to engineers of the western region a program of high scientific caliber representing fundamental contributions to the engineering sciences. Participation in the institute has been on a nationwide basis, with representation both in audience and speakers from industrial centers and universities throughout the nation. Preprints of all papers are included in a bound volume that will be available at the meeting.

Sponsored by the University of Minas Gerais, a **Symposium on Cytology and Cytochemistry of Secretion** was held in Belo Horizonte, Minas Gerais, Brazil, 14–18 Mar. Visiting participants came from the University of São Paulo and from the University of Brazil, Rio de Janeiro.

There were reports and discussions on: general aspects of cell secretion, biochemistry of cell secretion; role of mitochondria and Golgi apparatus in cell secretion; behavior of the nucleolus in secretory cells; intranucleolar modifications during regeneration of the liver; cytochemistry of the salivary chromosomes of *Rhyncosciara angelae.* The papers presented will be published in English by the University of Minas Gerais under the editorship of G. Schreiber of the university's Institute of Biology.

Fisk University is sponsoring its 6th annual **Infrared Spectroscopy Institute,** 29 Aug.–2 Sept. Morning sessions will be devoted to introductory lectures, afternoons to laboratory work, and evenings to lectures on more advanced topics of a specialized nature. Laboratory facilities will include a variety of single- and double-beam spectrometers of both uni-

versity and commercial design that will permit the covering of a spectral range from the visible to the far infrared.

In addition to introducing the participants to the methods and scope of infrared spectroscopy, the institute will provide an opportunity for advanced workers to enter into discussions with faculty members concerning problems of their own particular interest. This year the guest faculty is composed of Robert C. Gore of the American Cyanamid Co.; Alvin Nielsen of the University of Tennessee; and A. Lee Smith of the Dow-Corning Co. Regular faculty members include Nelson Fuson of Fisk University; Ernest Jones of Vanderbilt University; and James Lawson of Tennessee A. and I. State University. Further information may be obtained by writing to Nelson Fuson, Infrared Spectroscopy Institute, Fisk University, Nashville, Tenn.

A 3-day international symposium on **Enzymes: Units of Biological Structure and Function,** sponsored by the Henry Ford Hospital, Detroit, Mich., and the Edsel B. Ford Institute for Medical Research, will be held in the auditorium of the hospital, 1–3 Nov. Interrelationships between enzymology and other fields, notably genetics, physiology, biochemistry, and pharmacology, will constitute the general theme of the symposium. The specific topics for the six sessions will be as follows: origin of enzymes; status of the gene-enzyme relationship; enzymes and cell structure; enzymatic basis of some physiological functions; cellular energy sources; and regulation of enzyme activity. More than 30 internationally known scientists have agreed to participate.

Interested persons may secure a copy of the preliminary announcement by writing to Dr. Clarence E. Rupe, Henry Ford Hospital, Detroit 2, Mich. Invitations will be sent to as many as can be accommodated.

Seven symposiums will highlight the 32 technical sessions scheduled for the 58th annual meeting of the **American Society for Testing Materials** to be held at Chalfonte-Haddon Hall, Atlantic City, N.J., 27 June to 1 July. The symposiums, some of them continuing through 3 sessions, will deal with impact testing, judgment of factors in soil testing, high purity water corrosion, atmospheric corrosion of nonferrous metals, speed of testing, and metallic materials for service above 1600°F. Many sessions of individual papers will cover soils, nonferrous metals, steel, tests of concrete, fatigue, and effect of temperature. There will be a panel discussion on pyrometric practice in elevated temperature testing sponsored by the Joint A.S.T.M.-A.S.M.E. Committee on Effect of Temperature on the Properties of Metals. In addition, about 50 of the society's chief technical committees and their subgroups have scheduled about 600 meetings in the 5-day period.

The annual Marburg lecture, established by the society to honor its first secretary, will be presented by Walter J. Hamburger, director, Fabric Research Laboratories, Inc., Boston, Mass., who will speak on "A technology for the analysis, design, and use of textile structures as engineering materials." The Gillett Memorial lecture, sponsored jointly by A.S.T.M. and the Battelle Memorial Institute to honor Horace W. Gillett, the first director of Battelle, will be presented by Fritz V. Lenel of Rensselaer Polytechnic Institute. He will discuss "Powder metallurgy—now." The address by retiring president Norman L. Mochel will review problems relating to the identification of materials.

Society Elections

New Orleans Academy of Sciences: pres., Willis Eggler, Sophie Newcomb College; v. pres., Leon Segal, Southern Regional Laboratory; sec., John H. Mullahy, Loyola University; treas., Hyacinth Blanchard, Metairie High School.

Brooklyn Institute of Arts and Sciences: pres., Robert E. Blum; sec., Lloyd R. McDonald; treas., Paul F. Ely. The vice presidents are Francis T. Christy, Charles Pratt, and Donald G. C. Sinclair.

New York Academy of Dentistry: pres., Willard T. Keane, New York; pres.-elect, C. Raymond Wells, Brooklyn; v. pres., W. Ward Tracy, New York; treas., Gustav P. Frahm, Flushing; sec., Norman L. Hillyer, Hempstead.

Iowa Academy of Science: pres., U. A. Hauber, St. Ambrose College; v. pres., Walter F. Loehwing, State University of Iowa; sec.-treas. and representative to AAAS Council, Jean L. Laffoon, Iowa State College; editor, David G. Mobberley, Simpson College.

Ohio Academy of Science: pres., Paul Rothemund, Yellow Springs; sec., Ralph W. Dexter, Kent State University; treas., Elton Paddock, Ohio State University.

American Society of Biological Chemists: pres., J. Murray Luck, Stanford University; pres.-elect, Herbert E. Carter, University of Illinois; sec., Philip Handler, Duke University; treas., Philip P. Cohen, University of Wisconsin.

Electron Microscope Society of America: pres., T. F. Anderson, University of Pennsylvania; pres.-elect, W. L. Grube, General Motors Research Department; past pres., R. G. Picard, Radio Corporation of America, Camden, N.J.; sec., Miss J. R. Cooper, General Electric Co., Nela Park, Cleveland 12, Ohio; treas., Max Swerdlow, National Bureau of Standards, Washington 25, D.C.

The **Kresge-Hooker Science Library Associates:** pres., Stanley S. Kresge, Kresge Foundation, Detroit, Mich.; v. pres., Harvey M. Merker, Parke-Davis and Co., Detroit, Mich.; sec.-treas., Icie Macy Hoobler, Merrill-Palmer School, Detroit, Mich.; acting exec. sec., Wendell H. Powers, Wayne University. The representative to AAAS Council is Byron Soule, University of Michigan.

Education

The **Smithsonian Institution** and **Harvard University** have announced that they will associate their activities in astrophysical research to strengthen and enlarge the programs of both institutions. Fred L. Whipple of Harvard will become director of the Smithsonian's Astrophysical Observatory, effective 1 July. He succeeds L. B. Aldrich, who is retiring. At the same time, headquarters of the Smithsonian's Astrophysical Observatory will be moved to Cambridge, Mass., in order that astronomers may work in close association with Harvard's program of solar research. Some administrative and mechanical work will continue in the laboratories and shops of the Astrophysical Observatory at the Smithsonian Institution in Washington, and the two observatories of the Smithsonian Institution in Chile and at Table Mountain, Calif., will be maintained.

Whipple will continue to be professor of astronomy at Harvard, and it is contemplated that there will be other joint appointments by the two institutions. As a professor, Whipple will remain a member of the Harvard College Observatory Council, the policy-making group for research and teaching in astronomy at the university. As director of the Smithsonian's Astrophysical Observatory, he will become a member of the Solar Associates group, a coordinating body of scientists representing Harvard, the High Altitude Observatory at Climax, Colo., the Upper Air Research Observatory of the Air Force at Sunspot, N.M., and the Central Radio Propagation Laboratory of the National Bureau of Standards at Boulder, Colo.

The new **Richard B. Wetherill Chemistry Laboratory** at Purdue University will be dedicated 16–17 June. The $4-million building contains 3 million cubic feet and provides 160,000 ft^2 of usable floor space. The new unit is designed to contain all activities of the department except the teaching of freshman chemistry. Among those who will participate in the dedication program are Willard Libby, commissioner, U.S. Atomic Energy Commission; John C. Warner, president-elect, American Chemical Society; Max Tishler, vice president, Merck and Co.; and Linus Pauling, head, department of chemistry, California Institute of Technology.

How important scientific advances have affected national affairs and international relations is the subject of a course to be introduced in the College of Arts and Science, University of Rochester, next September.

Entitled **"Science in National and International Affairs,"** the course is aimed at nonscience majors who have had some science courses and who may—in the course of their future careers in government, business, and industry—have to make decisions that involve fundamental knowledge of scientific developments and problems related to them.

The course will be taught by W. Albert Noyes, professor of chemistry and former chairman of the department, and dean of the graduate school. The effect of scientific advances on national and international affairs will be illustrated by selected examples. The scientific activities of the United States government and their relation to the national economy and the national defense will be discussed, and the scientific activities of the United Nations and its specialized agencies and their relation to the foreign policy of the United States will be considered.

Miscellaneous

Among the articles in the June issue of **The Scientific Monthly** is "Cultivating our science talent—key to long-term security" by Donald A. Quarles. Quarles' article is based on an address given at the awards banquet of the Fourteenth Annual Science Talent Search, in Washington, 28 Feb. The other articles included in this issue are "New science of radio astronomy," Bart J. Bok; "What is ecology?" Lee R. Dice; "An insect Pompeii," Reginald D. Manwell; "Spontaneous activity and behavior," Kenneth D. Roeder; and "Medicinal uses of plants by native Inaguans," William H. Sawyer, Jr. There are 30 book reviews in this issue and letters from Arthur L. Mottet, Charles E. Whitmore, Addison Gulick, H. C. Lansdell, H. Richard Rasmusson, Lou Bahm, and Richard H. Lampkin.

William M. Mann, director of the National Zoological Park in Washington, D.C., has presented his collection of more than **117,000 specimens of ants** to the Smithsonian Institution. This gift makes the Smithsonian's ant collection one of the most complete in the world, raising the number of type specimens it contains from 1200 to 1900. There are approximately 8000 kinds of ants in the world, but type specimens are widely scattered. (A type specimen is a specimen on which the original scientific description of a species is based.)

In order to provide more adequate space for its news service and regional editorial staff, the **American Chemical Society's New York office** has moved to 2 Park Ave., New York 16.

The following **chemicals** are wanted by the Registry of Rare Chemicals, Armour Research Foundation of Illinois Institute of Technology, 35 W. 33 St., Chicago 16, Ill.: 2-chloro-3-nitroaniline; 2,3,5-tribromoaniline; 2,3,6-tribromoaniline; 2,3-dibromoaniline; 2-bromo-3-nitroaniline; 2,5-dibromoaniline; 2-methyl-1,3-dioxolane; 2-benzoyl-1,3-diphenyl-1,3-propanedione; *tert*-butyl chomate; tris-hydroxymethyl melamine; glyceric acid-2,3-diphosphate; tetrahydro-2-methyl-6-(3-pyridyl)-2H-1,2-oxazine; 3,5-dinitrophenylisocyanate; 4-biphenyl isocyanate; 1-naphthyl isothiocyanate; 2,4,6-trimethylphenol (Mesitol); 1,2-diaminocyclohexane; chloroiodomethane; phenanthro (1,10,9,8,fghij)perylene (meso-naphthodianthrene); and cyclohexanecarboxaldehyde.