signed, Dr. Hunter let the person carry it out on his own. It must have been hard at times to watch people bungle, but it certainly promoted their growth and independence to be forced to find their own way through the problems of research, teaching or administration. As a result, Hunter's students and associates have a deep admiration and fondness for him, yet all have developed along the lines of their own interests rather than following a path he laid down.

Fortunately, Dr. Hunter was in excellent health until the end. On 22 March, his 65th birthday, he resigned the chairmanship of the Brown department of psychology but he looked forward to another 5 years of teaching and research. In July he took an extensive motor trip with Mrs. Hunter. A few days after his return to Providence he had what appeared to be a slight coronary occlusion and went to the hospital as a precautionary measure. Two days later, on 3 August, he had another attack, and died that evening.

We all feel keenly the loss of this wise leader and kind friend. There is consolation in the knowledge that his life was full and satisfying. And we must remember that he always taught us to devote our full energies to the job ahead; the greatest tribute we can pay him is to continue building on the solid foundations he laid.

HAROLD SCHLOSBERG
Brown University, Providence, Rhode Island

News and Notes

Soviet Astronomy

This report attempts to convey our impressions of some of the scientific institutions in Leningrad and Moscow gathered during a recent, but unfortunately very brief, visit [*Science* **119**, 794 (4 June 1954)]. We traveled to Russia in order to participate in an international astronomical meeting in connection with the dedication of the rebuilt Pulkovo Observatory, which is located on the outskirts of the city of Leningrad. The invitation to attend this meeting came from the president of the Academy of Sciences of the Soviet Union. From western Europe, 10 astronomers attended, from Canada and Mexico, one each, while the representation from countries behind the iron curtain, not including Soviet Russia, numbered about 40, not all of whom were astronomers. During our 16-day stay in Russia, we were given the opportunity to visit various scientific institutions.

Dedication ceremonies of the observatory were held from 20 to 22 May and included addresses dealing with its history and current work in several fields of research. These were followed by 3 days of symposiums, one on "Astrometry" and the other on "Variable stars," during which we were invited to present papers.

Pulkovo Observatory has a distinguished history, particularly in the field of astrometry. It was established in 1839 and in 1885 possessed the largest telescope in the world, a 30-in. refractor. During World War II its buildings were completely destroyed. However, most of the instruments and the greater part of the library were saved. The Kepler manuscripts and other historical papers, which were in the library, are now in the Academy Building in Leningrad. The mounting of the large refractor was destroyed, but the lens was saved. In its place a 26-in. refractor is to be mounted in a building that is now approaching completion. This instrument was constructed in Germany.

The present telescopic equipment of the observatory consists principally of the carefully reconditioned old instruments and a few new, but small, instruments made in Leningrad. These latter are a fixed-tube polar telescope to study the motion of the celestial pole among the stars, a beam-type interferometer for measuring the angular separation of double stars, a Maksutov-Schmidt telescope to be used for photoelectric spectrophotometry, and a number of still smaller instruments. The objectives of these telescopes have diameters of less than 24 in. The horizontal solar telescope is well equipped with interference filters, gratings, and photoelectric registrations.

The auxiliary equipment of the observatory—such as crystal clocks, stellar photometers, microphotometers, and comparators—is new and was constructed in Leningrad. We understand that a 19-stage multiplier is used in connection with the photoelectric equipment. The observatory is staffed with 75 scientific workers and has a total personnel of 200. Housing is now being made available for the staff on the grounds of the observatory.

The Institute for Theoretical Astronomy at Leningrad performs functions that correspond to those of the Nautical Almanac Office in Washington and similar offices in other countries. This institute concentrates much of its effort on the computation of ephemerides of minor planets and publishes an annual volume of these emphemerides. This work is facilitated by the use of an elaborate set of punched-card machines, which includes four or five tabulators and five multipliers. The latter are not of the most modern type now in use in the United States, and we did not see an electronic computing machine.

The University of Moscow, which without doubt is the leading institution of higher education in the Soviet Union, is undergoing a phenomenal growth. The present building activities are concentrated outside the city limits. More than 30 buildings have been completed and a number of others are under construction. Some of these buildings are large skyscrapers. The old university buildings near the Kremlin continue to house the humanities, law, and medicine. The new buildings house the departments of science,

together with living quarters for the instructional staff and for 6000 students. Each student occupies a separate room in a two-room suite. A number of theaters, swimming pools, and other recreational facilities are provided. The principal building houses the central library as well as the department libraries. Separate reading rooms for graduate and undergraduate students are provided.

The total enrollment of the university is 18,000 students, of which 4000 are students by correspondence. The number of science students is 8000, of which 1500 are in the graduate schools. This does not include students in engineering. Special institutions provide instruction in technology. Admission to the universities is by high-school diploma, although Moscow accepts only one out of five applicants. Young people from all over the Soviet Union seek admission, 67 nationalities being represented in the university. Women students are more numerous than men. Admission to the graduate school requires, in addition to scholastic attainments, the passing of an examination on the political philosophies of Marx and Lenin.

The undergraduate studies extend to 5 yr and an additional 3 yr are required for a student to receive training equivalent to the doctorate. The greatest proportion of students receive from the state adequate stipends for living expenses. A graduate student receives about twice what an undergraduate receives, plus additional funds for books. Last year's enrollment in the division of mechanics and mathematics, which includes astronomy, was 400 graduate students. This year 19 have received diplomas in astronomy. A staff of 12, of which 5 are professors, is provided in this field. Instruction is given in astrometry, geodesy, and astrophysics.

Observational astronomy in Moscow is centered around the Sternberg Institute, established in 1831, and at present occupying overcrowded quarters in the city. Its staff is composed of 110 workers of which 60 are scientists. The largest instrument at this observatory is a 13-in. astrograph and is used primarily for the determination of proper motions of stars. As in the case of Pulkovo Observatory, astrometry is emphasized and a number of meridian instruments and clocks are in operation. The time service of the Soviet Union is entrusted to this institution. A new 100-mm broken transit, the first to be built in Russia, is to be used for the determination of time. It is to be equipped to register star transits photoelectrically. Another new telescope now in operation is a small, 18 by 20 in. Maksutov-Schmidt-type instrument that is provided with objective prisms. The library of the observatory contains 40,000 volumes. One of the principal services of the institute is the preparation and publication of the *General Variable Star Catalogue,* an indispensable publication for many workers all over the world.

This fall the observatory is to be moved into its new and spacious quarters near the new university buildings, and it will be equipped with all new, but small, instruments including a small solar telescope. The primary function of the Sternberg Institute is to serve as a training center for the university students specializing in all branches of astronomy. As a matter of fact the principal members of its staff are professors at the university. Plans for a research center in astronomy are now going forward at a location 40 km from the city. It is hoped that it will be completed by 1960.

It is difficult to evaluate the over-all activities in astronomy in the Soviet Union. This is partly due to the language barrier. The fact that the Soviets have trained and are training a large number of astronomers is evident. Their output in publications is enormous, both in journals and in popular and advanced books in astronomy. Nearly every observatory or institute has its own publication series. From the standpoint of equipment they are deficient, but the indications are that they are determined to build their own instruments. The largest telescope in operation at present is a 50-in. reflector. The largest refractor has a diameter of 26 in. Both instruments are of German make. Likewise no significant large Schmidt-type telescopes are in operation or are planned for the near future. We have no knowledge of the existence of any radio telescopes.

During our brief visit to Russia, the Soviet astronomers were most helpful and always ready to make us acquainted with their work and their instruments. The Soviet Academy, our host, made our stay very pleasant and comfortable. The translators assigned to us proved very efficient and eagar to help us. We are grateful to all of them. We are also indebted to the National Academy of Sciences for making the necessary arrangements in securing our passports and visas and to the National Science Foundation for travel grants so generously provided.

J. J. NASSAU
DIRK BROUWER
Case Institute of Technology, Cleveland, Ohio;
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Science News

An editorial in the 9 Aug. issue of *Chemical and Engineering News* protests salary discrimination against Ph.D. scientists in the armed forces and the Public Health Service. Physicians, dentists, and veterinarians holding active commissions in these fields of government service receive by law $100 a month more than is paid to chemists and other scientists with the Ph.D. degree who hold similar commissions.

> . . . we feel that all the arguments advanced to support extra pay for physicians and dentists and, particularly veterinarians apply equally well to chemists and other scientists. . . . In government facilities such as the Public Health Service's National Institutes of Health, physicians and dentists are often engaged in research projects exactly the same as those carried out by chemists, biochemists, and other scientists. In some such cases project directors are scientists and some of the subordinates are physicians and dentists. Yet the latter get $1200 a year more than their project supervisors.

We believe that in all fairness Congress should give equal treatment to government employees with comparable education, training, and experience. This could be done by extending the provisions of Public Law 84 to cover scientists who hold earned doctor's degrees and who hold active commission in the Armed Services or the Public Health Service.

A new high-flux reactor for fundamental research and engineering studies is to be constructed at the Atomic Energy Commission's Oak Ridge National Laboratory for an estimated $2,800,000. The reactor will have a heterogeneous core with enriched uranium as fuel. It will use ordinary water as a moderator and coolant, and will operate at a power level of 5000 kw.

In delivering the presidential address of the **British Association for the Advancement of Science,** E. D. Adrian, president of the Royal Society and master of Trinity College, Cambridge, warned that

> We must face the possibility that repeated atomic explosions will lead to a degree of general radioactivity which no one can tolerate or escape. Unless we are ready to give up some of our old loyalties we may be forced into a fight which might end the human race. Our predicament is the inevitable result of our curiosity and of the physical nature of the world we live in, but if we can make our behavior worthy of our increased knowledge we can live safely.
>
> The scientist, therefore, has a double responsibility. He must apply his science to learn as much as possible about the mental and physical causes which make us behave as we do, he must study human nature to prevent its failures. But he cannot wait for the discoveries which might make us act more wisely: he must take us as we are and make it his task to point out that the human race cannot stand more than a few thousand large atomic explosions whether they hit their target or miss it.
>
> If we must continue to make war there is no kind of scientific investigation which might not be used to make it more effective. There can be no guarantee that discoveries in the field of human conduct would be harmless. A drug or a system of education which would make us all do as we are told, a method of producing radical conversion to a new system of belief, a knowledge of new ways of rousing patriotic ardor, all these might be used with consequences almost as grim as the genetical deterioration in a radioactive world. The psychiatrist who discovers a cure for paranoia may find that he has also revealed a convenient way of producing it.

Discoveries relating to our own nature may mean a painful readjustment of our beliefs, Adrian observed. He recalled the great discussion over Darwin's theory of natural selection 100 yr ago and drew a close parallel with the impact of Freud's theories on our own generation.

> The theory of unconscious forces moulding our thought has certainly diminished our stature as intelligent beings. Yet the parallel still holds, for again we have recovered our equanimity. We are reconciled to the unconscious, though we may not have digested all the elaborations of psychoanalytic theory. We are no doubt less sure of ourselves, inclined to spare the rod and to put nothing in its place, but, on the whole, Freud has left us with a better understanding of human conduct and we are not down-hearted at finding it less rational than we used to suppose.

Adrian urged that there be more investigations in the field of the social sciences, even though it is difficult for those who study social activities, so enmeshed with human actions, to do controlled experiments. Even after it is discovered what is likely to happen in a particular situation, the statesman who consults an expert may not be able to act to prevent trouble. Adrian commented that we may find out a great deal about the tensions which lead to war without seeing the way to keep ourselves clear of it. He is optimistic about the future, however.

> We are constantly acquiring new habits and new ways of thought. It does not take us very long to see the way round old quarrels. Darwin and Freud no longer trouble us. We are no doubt born with brains like those of our remote ancestors and when we are grown up we have no more native intelligence than they had, but our brains must have been so modified by what we have learned that they are physically and chemically different, better adapted for the complex social life of our time. We have more knowledge at our disposal. If all goes well with our training the brains we have ought to be more civilized than those of our fathers and those of the next generation, more civilized than ours.

The *Journal of the American Medical Association* for 7 Aug. contains an account of the relationship between **smoking habits and human death rates** by E. C. Hammond and D. Horn of the medical and scientific department, American Cancer Society. These workers present preliminary findings, covering about 20 mo, of a follow-up study of 187,776 men between the ages of 50 and 69. The available information indicates that the over-all death rate, the death rate from diseases of the coronary arteries, and the death rate from cancer, are all much higher among men with a history of regular cigarette smoking than among men who never smoked.

The workers state that the findings prove a definite association between smoking habits and death rates, and feel that the associations found between regular cigarette smoking and death rates from coronary artery disease and lung cancer reflect *cause and effect relationships.*—E. M. L.

J. C. Bartlet and C. G. Farmilo of the Food and Drug Laboratories, Canadian Department of National Health and Welfare, Ottawa, have discovered that the **geographic origin of raw opium** can be determined by chemical analysis of the ash when the opium is burned. Knowing the source of the drug should help tighten control measures and suppress illegal production. The investigation, which was a UNESCO project, was reported in the 27 Aug. issue of *Nature.*

The Canadian research group has analyzed more than 100 opiums—from Yugoslavia, two regions in Turkey, Iran, India, Indo-China, Korea, and China. Tests were made for both major and minor constituents. The elements determined were potassium, cal-

cium, phosphorus, sodium, magnesium, silicon, iron, aluminum, titanium, boron, manganese, molybdenum, lead, tin and copper. Spectrographic, colorimetric and flame photometric procedures were used.

The latest nationwide tabulation of statistics on **mental patients in public hospitals** shows that 622,000 persons were on the books at the end of 1952. A year earlier the figure was 610,000. The end-of-year figures for 1952 listed just under 100,000 patients for New York State's public hospitals for the mentally ill—more than double that of the next highest state total. The comprehensive tabulation is titled *Patients in Public Hospitals for the Prolonged Care of the Mentally Ill, 1952,* and is the third of a series of such reports prepared by the National Institute of Mental Health's Biometric Branch. It is available from NIMH; specify "Current Reports Series IMH-B54—No. 1."

Ground granite can be used as a fertilizer according to results of a research program being conducted by Charles J. Lyon, chairman of the Dartmouth College botany department, with the aid of the New Hampshire State Planning and Development Commission. Lyon's studies show that the minerals feldspar and mica, both common ingredients of granite, may be useful as postassium fertilizers for a variety of plants. This is particularly significant not only for New Hamsphire, the "Granite State," but for many other parts of the nation where crop soils are deficient in potassium, which is one of the three main fertilizer elements.

However, a number of crop plants tested—such as tomatoes, sweet corn, and tobacco—cannot utilize this potash mineral. Why these do not benefit and legumes do is a question that is still to be answered.

The problems caused by the contact of modern civilization with culturally more primitive societies are acute ones that have led to assimilation, depopulaton or extermination of many of the native groups. Nowhere is this more evident than among the Pacific islands. A study of the factors involved in the **depopulation of Yap,** an island group of western Micronesia with an area totaling 38.67 mi^2 enclosed within a single coral reef, is therefore especially pertinent. E. E. Hunt, Jr., N. R. Kidder, and D. M. Schneider have reported results of a Harvard expedition of 1947–48 correlated with other available data [*Human Biol.* **26,** 21 (1954)].

The population of Yap prior to its annexation by Spain is not known, although on theoretical grounds it may have been as much as 51,000; the authors, however, regard this estimate as probably excessive. Over a century ago, the Yapese began to decrease in numbers. The first census, in 1899, showed a total of 7808. Under subsequent German and Japanese occupations the population steadily decreased, so that in 1946, one year after U.S. occupation, it numbered only 2582. Subsequently, it has undergone a slight increase.

The authors conclude that increase in mortality, chiefly as a result of severe infectious diseases, probably started the population decline. Even after several decades of foreign rule the crude death rate was still high; from 1917 to 1930 (under Japan) it was about 40 per 1000. The crude birth rate during the same years was only about 15 per 1000, so that depopulation continued unabated. The low birth rate seems not to be explained by the absence of men from Yap; indeed, permanent immigration and emigration apparently have had no appreciable effect on the depopulation rate. The low birth rate may be partially explained by the high frequency of genital pathology and intestinal parasites. However, numerous Yapese cultural patterns seem to have limited fertility.

Since American occupation the crude birth rate has doubled and the crude death rate has halved. Health has improved, and several social and cultural changes have apparently helped to increase fertility. The authors conclude that with improved health and sanitation and a high morale, the population of Yap will probably continue to increase moderately.—W. L. S., JR.

According to a brief communication in the *Physical Review* for 15 July, Atterling, Forsing *et al.* of the Nobel Institute of Physics, Stockholm, have used the 225-cm cyclotron to produce a beam of high-energy oxygen-16 ions sixfold charged, of energy approximately 180 Mev, and current about 0.03 μamp. By bombarding uranium with this beam, they found an activity that is ascribed to the new **element 100** with a half-life of 0.5 hr. From alpha particle emission theory, they conclude that their data for alpha disintegrations with an energy of 7.77 Mev correspond to an atomic mass of about 250.—K. L. H.

Scientists in the News

Robert W. Allard, University of California agronomist at Davis, has left for a year's study in Europe. He will be a Fulbright senior research scholar at the University of Birmingham's Biometrical Laboratory, in England, for most of his stay abroad. There he hopes to find answers to certain problems that will help him and other plant breeders develop higher-yielding, disease-resistant crop varieties better adapted to various growing conditions.

Ross H. Arnett, Jr., entomologist for the U.S. Department of Agriculture and curator of insects at the U.S. National Museum, has been named associate professor of biology at St. John Fisher College, Rochester, N.Y.

Marvel L. Baker, associate director of the Nebraska Agricultural Experiment Station (Lincoln), and **Truman E. Hienton,** head of the Department of Agriculture's farm electrification section (Beltsville, Md.), have been elected members of the Scientific Manpower Commission. Their election increases the membership of the commission to 18.

New members of the board of trustees of Biological Abstracts, Inc., are **Stanley A. Cain,** chairman of the department of conservation at the University of Michigan; **H. Bentley Glass,** professor of biology at the Johns Hopkins University; and **William B. Sarles,** acting chairman of the department of bacteriology at the University of Wisconsin.

Two surgeons originally trained at the University of Chicago are returning to serve in the university's department of surgery. **Joseph P. Evans,** associate professor of surgery in charge of neurosurgery at the University of Cincinnati Medical School, will become professor of neurosurgery, and **John Van Prohaska,** formerly professor of surgery at the University of Illinois, has been appointed professor of surgery.

John M. Fogg, Jr., professor of botany and since 1 July director of the Morris Arboretum of the University of Pennsylvania, has recently returned from a 2-mo visit to India where he went to collect plants for the Arboretum.

Victor H. Fraenckel, former liaison scientist in physics at the General Electric Research Laboratory, Schenectady, N.Y., has been appointed consultant on scientific relations. He will be responsible for informing and counseling the management of the laboratory regarding scientific work under way outside the General Electric Co.

Jack Gross, associate professor of anatomy at the New York State University College of Medicine in Brooklyn, received the 1954 Chilean Iodine Educational Bureau award in Boston, Mass., at the 101st convention of the American Pharmaceutical Association. The ward of $1000 and a citation certificate was given to Gross for his fundamental contributions in the field of iodine that have revised the entire concept of the metabolism of the thyroid hormone. Gross has demonstrated the presence of a new iodine compound, triiodothyronine, in human blood. Together with R. Pitt-Rivers at the National Institute for Medical Research, London, he 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.

Robey W. Harned, one of the founders of professional entomology in the South and long a leader in cotton insect research, retired from the U.S. Department of Agriculture at the end of July after having directed cotton insect work for the Bureau of Entomology and Plant Quarantine for more than 20 yr. Since the department's reorganization last fall he has been acting as consultant and staff assistant to the chief of the Entomology Research Branch, Agricultural Research Service.

Prior to his federal employment, Prof. Harned was for 25 yr professor of entomology and zoology at Mississippi A. & M. College and entomologist at the Mississippi Agricultural Experiment Station. He also was in charge of state nursery inspection and of regulatory and extension work, served as executive officer of the Mississippi State Plant Board from the time of its organization in 1918, and did research on cotton, scale, and pecan insects. Prof. Harned was honored 16 July by friends and associates—many of them ex-students—and among the gifts presented to him were a vacation check for $800.00 and a collection of some 300 letters from friends in 26 states and 3 foreign countries. The Cotton States Branch of the Entomological Society of America, of which he is a past chairman, honored him at a banquet in Biloxi, Miss., last January.

Takeru Higuchi, associate professor in the University of Wisconsin School of Pharmacy, is 1954 winner of the Ebert medal for outstanding pharmaceutical research. He received the honor for significant investigations in the physicochemical aspects of pharmacy, with specific reference to his work on the physics of tablet compression and on the complexes formed in solution by caffeine. Two former Wisconsin graduate students share in the honors as Higuchi's coworkers: **A. Narsimha Rao,** now in charge of laboratories in the Indian Division of Parke, Davis and Co.; and **D. A. Zuck** of Eli Lilly and Co. Both received certificates of honorable mention.

Following 4 yr of service with Bell Telephone Laboratories, **Thomas R. Hoffman** has become an associate professor of electrical engineering at Union College, where he had previously been a faculty member.

Aviation's Daniel Guggenheim medal will go this year to **Clarence Decatur Howe,** Canadian engineer and Minister of Trade and Commerce and Minister of Defense Production. Presentation will be made in Los Angeles, 8 Oct., at a session of the National Aeronautic meeting of the Society of Automotive Engineers, which sponsors the award jointly with the American Society of Mechanical Engineers and the Institute of the Aeronautical Sciences.

Howe, a native of Waltham, Mass., and a 1907 graduate of M.I.T., is being honored for "initiating and organizing commercial air routes and services, promoting aeronautical research, development and production of aircraft and engines, and advancing the art of aeronautics." He is a civil engineer who as a Canadian cabinet minister since 1935 has been responsible for most of his government's developments in aviation.

William T. Ingram has established a consulting practice in sanitary engineering in New York. He will continue his association with the New York University College of Engineering as adjunct professor.

Waldemar Kaempffert of the New York *Times* is this year's Kalinga prize winner. The prize is awarded annually through UNESCO from the endowment of P. Patnaik, a member of the legislative assembly of

the state of Orissa, India. The Kalinga Trust Fund was set up in 1951 to emphasize the importance of the competent presentation of science to the public and to establish a cultural contact between India and the scientifically advanced nations. The winner will attend the annual meeting of the Indian Science Congress and spend a month in India lecturing at scientific and public meetings. The official UNESCO announcement stated that Mr. Kaempffert was nominated by the British Association of Science Writers and was chosen from among 10 nominees from Austria, Brazil, France, Germany, Great Britain, India, Peru, Venezuela and the United States.

B. Marr Lanman has been appointed head of clinical research for Schenley Laboratories, Inc. Before joining Schenley in 1952, Lanman was resident in thoracic surgery at Presbyterian Hospital in New York.

William C. Moloney, on leave of absence for 2 yr while serving as director of the medical research program for the Atomic Bomb Casualty Commission in Hiroshima, Japan, has returned to the Boston City Hospital where he has been appointed director of the Clinical Laboratories. Moloney will also continue his position as clinical professor of medicine and assistant drector of the first and third medical services (Tufts) at the Boston City Hospital.

The University of Michigan has announced the dismissal of **Mark Nickerson,** associate professor of pharmacology in the Medical School, and **H. Chandler Davis,** instructor in mathematics in the College of Literature, Science, and the Arts. Simultaneously the reinstatement of **Clement L. Markert,** assistant professor of zoology, was announced. All three were suspended on 10 May when they refused to answer questions by the U.S. House Committee on Un-American Activities about alleged membership in the Communist party. The committee was headed by Rep. Kit Clardy of Michigan. Davis relied only on the First Amendment and has since been cited for contempt of Congress. He was indicted by a Federal District Grand Jury in Grand Rapids on 25 Aug. on 26 counts. These actions were not under consideration by any university group investigating Dr. Davis's case. Nickerson and Markert refused to answer the committee on the grounds of the Fifth Amendment.

An advisory committee of the university senate, made up of five faculty members, unanimously recommended the dismissal of Davis, as did a special appeal committee known as the Committee on Intellectual Freedom and Integrity. Davis would answer no questions about his alleged membership in the Communist party.

The university advisory committee voted three to two for Nickerson's reinstatement with severe reprimand and the Committee on Intellectual Freedom and Integrity supported that recommendation unanimously; however, the dean and executive committee of the Medical School, where Dr. Nickerson taught and carried on research, unanimously recommended his dismissal. Before both faculty committees, Nickerson admitted former membership in the Communist party, but he said he had gradually withdrawn between 1944–45 and 1947–48, primarily because he did not have time to carry on the party's work. This weighed heavily in the decision to recommend dismissal.

All committees investigating the Markert case were convinced that his one-time membership in the Communist party, when he was young, and his subsequent membership in the party and his withdrawal from it, and his present attitude toward the party are all of such a nature that there is no justification for his summary dismissal as the facts are now before the university. A letter of censure was authorized.

Harold H. Plough, head of the department of biology at Amherst College, has been appointed to serve for the balance of the late Joseph H. Bodine's term as secretary of AAAS Section F—Zoological Sciences. The term runs through Dec. 1955.

Meetings

Announcement is made of the **First Electronic Computer Clinic,** to be held in conjunction with the First International Automation Exposition at the 244th Regiment Armory in New York, 30 Nov.–2 Dec. (The exposition opens 29 Nov.) The clinic is a lecture and demonstration course planned for top management, management and production engineers, physicists, chemists, and others who contemplate using digital or analog computers in the plant or laboratory. Advance registration (fee, $5) is required. Forms can be obtained from Richard Rimbach, Electronic Computer Clinic, 845 Ridge Ave., Pittsburgh 12, Pa. Registration will not be accepted from individuals employed by computer manufacturers.

The first five lectures of the **Harvey Society's 50th anniversary series,** to be given under the patronage of the New York Academy of Medicine at its headquarters, are as follows:

23 Sept., "Hormones of the posterior pituitary gland: oxytocin and vasopressin." Vincent du Vigneaud, professor of biochemistry, Cornell University Medical College.

14 Oct., "The metabolism of the heart." Richard J. Bing, professor of experimental medicine and clinical physiology, Medical College of Alabama.

18 Nov., "Lipoproteins of human plasma." J. L. Oncley, professor of physical chemistry, Harvard University.

16 Dec., "Control and interrelations of metabolic and viral diseases of bacteria." André Lwoff, head of the department of microbial physiology, Pasteur Institute, Paris.

20 Jan., "The intermediary metabolism and biological activities of ferritin." Ephraim Shorr, associate professor of medicine, Cornell University Medical College; and research associate, Russell Sage Institute of Pathology.

The fall meeting of the **Operations Research Society of America** is to be held at the Sheraton-Park Hotel in Washington, D.C., 19–20 Nov. The program will consist of symposiums on the accomplishments of operations research in industry, dynamic programing, and the use and value of war-game methods in solving operations research problems. In addition to sessions of contributed papers, papers on theoretical developments have been invited.

The 5th annual scientific meeting of the **Society for Clinical and Experimental Hypnosis** will take place on 30 Oct. at the New York Academy of Sciences. Inquiries about membership in this society should be addressed to the president, Jerome M. Schneck, 26 W 9 St., New York 11.

This country's first society for scientists and engineers working in the atomic energy field has been formed. It is known as the **Society of Nuclear Scientists and Engineers.** The purpose of the organization is to foster the "integration and advancement of nuclear science and technology primarily through the holding of meetings and the publication of papers." SNSE's first major activity will be a 3-day technical conference to be held in June 1955 at Pennsylvania State University.

The society has been organized by a group of 27 scientists and engineers from every important atomic energy installation in the country.

The organizing committee for SNSE was established on 10 Dec. 1953, and the first 6 mo of 1954 were spent in intensive investigation to determine the need for an independent society. Details about membership can be obtained from Dr. Urner Liddel, 1104 Fisher Bldg., Detroit, Mich.

The **Society of Rheology** will hold its annual meeting in Washington, D.C., 3–5 Nov. The technical sessions will take place at the National Bureau of Standards, and the headquarters hotel will be the Sheraton Park. Four main groups of papers are scheduled: (i) time dependent mechanical behavior of monomeric liquids, elastomers, plastics, glass, and asphalts; (ii) statistical and molecular theories of liquids with particular regard to rheologic processes; (iii) volumetric strain in monomeric liquids, glass, and organic polymers; and (iv) critical velocities and impact strength, anisotropy, and chemically induced relaxation of fibers. In addition, individual papers will be given on a wide variety of rheologic topics.

Among the 25 authors scheduled to deliver papers are: Henry Eyring of the University of Utah; R. B. Lindsay, A. H. Lee, and R. S. Rivlin of Brown University; Charles Mack of Imperial Oil Limited, Sarnia, Ont., Canada; A. Michels of the University of Amsterdam, Holland, and the University of Maryland; Melville Green of the University of Maryland; Simon Rodbard of Michael Reese Hospital, Chicago; and C. van der Poel of Royal Dutch Shell, Amsterdam, Holland.

An informal dinner on 4 Nov. will feature the award of the society's Bingham medal, and an address by Alan T. Waterman, director of the National Science Foundation, on the generel subject of government support of research. Further information about the meeting can be obtained from F. D. Dexter, Bakelite Company, Bound Brook, N.J.

Dedication ceremonies for the new $10 million building of the **University of Texas M. D. Anderson Hospital and Tumor Institute** in the Texas Medical Center, Houston, will be held 23 Oct. The ceremonies will be preceded by a 3-day program for general practitioners and laymen.

Education

The first course in **air pollution** to be given in New Jersey will be inaugurated this fall by **Rutgers University.** It will be a general and beginning course and will be open to qualified persons from industry and governmental agencies as well as to undergraduate and graduate students.

A research team at Oberlin College (Ohio) has begun a study of **preparation for medical education in a liberal arts college,** aided by a grant from the Commonwealth Fund of New York. While medical schools are encouraging prospective students to gain a liberal educational background, little is known about the progress in medical schools of students with such backgrounds as compared with students whose undergraduate programs have been heavily weighted with premedical courses.

The University of Oklahoma's School of Journalism has prepared a 4-yr curriculum for premedical students or newspaper men interested in **science journalism.** It is designed to aid in the preparation of scientific papers and to help the premedical student who ultimately pursues another career.

Successful operation of a program in correlating the **teaching of pathology** with other disciplines in the University of Kansas Medical School has been reported in the September *Journal of Medical Education* by Robert E. Stowell, chairman of the departments of pathology and oncology.

This fall the **University of California Extension** will inaugurate a course in "**Application of the principles of industrial medicine to private practice.**" Requests for information should be made to Thomas H. Sternberg, Division of Postgraduate Medical Education, University of California Medical Center, Los Angeles 25.

A **wind tunnel** especially designed for heat transfer studies just below the speed of sound will be constructed at **Illinois Institute of Technology** under an Air Force research contract. Purpose of the studies will be to gather basic information which can be used

in such problems as de-icing and anti-icing at high subsonic speed levels. The tunnel will maintain a jet of 575 hp. Unlike the better known wind tunnels, this one will be small and relatively inexpensive but will incorporate many of the features of the larger tunnels.

A report on the first 30 yr of the **"Yale Plan of Medical Education,"** a method of study which differs in many respects from that of most American medical schools, appears in the September issue of the *Journal of Medical Education.* Vernon W. Lippard, dean of the Yale University School of Medicine and president-elect of the Association of American Medical Colleges, is the author of the report. The Yale program is based on four characteristics: a required dissertation, lack of fixed course requirements for qualified students, emphasis on elective courses, and the absence of required course examinations. Each student prepares an original hypothesis for the faculty member under whom he chooses to work. From that point on, he is treated as though he were a graduate student, and if he can demonstrate competent knowledge in a particular course, he is excused from attendance and given more time for elective work.

Since instruction is carried out in small groups, facilitating the evaluation of achievement, the necessity for required examinations is eliminated. Lippard feels that the Yale plan has been a success, since the students have established and maintained an excellent record in the national board examinations, successful completion of which is the threshold requirement at Yale for advancing from the preclinical to the clinical years, and for graduation. Yale's record compares favorably with the records of other medical schools.

Available Fellowships and Awards

The division of medical sciences of the **National Academy of Sciences–National Research Council** is accepting applications for postdoctoral research fellowships for 1955–56. These awards are designed to offer research experience to promising individuals who look forward to investigative careers, and not to provide practical experience in the clinical field. Ordinarily fellowships are not granted to persons over 35 yr of age. The following programs are announced:

Fellowships in cancer research are awarded by the American Cancer Society on recommendation of the Committee on Growth of the division of medical sciences. Awards are available for study in all branches of the biological, chemical, and physical sciences and also for clinical investigation applicable to the study of growth, typical or malignant. Citizens of the United States are eligible.

British-American exchange fellowships in cancer research also are awarded by the American Cancer Society upon recommendation by the Committee on Growth. They are offered to citizens of the United States for advanced study in Great Britain in specialized fields pertaining to the problem of growth. Similar fellowships are awarded by the British Empire Cancer Campaign to young British scientists for research in the United States.

Fellowships in the medical sciences supported by the Rockefeller Foundation and the Lilly Research Laboratories are administered by the medical fellowship board of the division. Fellows are expected to devote themselves to research in the basic medical sciences. The fellowships administered for the Rockefeller Foundation are open to citizens of the United States and Canada; the Lilly Fellowships only to citizens of the United States.

Fellowships in tuberculosis are also administered by the medical fellowship board under a grant from the National Tuberculosis Association. These awards are designed to promote the development of investigators in fields related to tuberculosis. They are open to citizens of the United States who are graduates of American schools.

Fellowships in radiological research are administered for the James Picker Foundation by the division's Committee on Radiology. The Foundation has expressed particular interest in the support of candidates who propose to carry on research oriented toward the diagnostic aspects of radiology. Appointments are not limited to citizens of the United States.

Applications for any of these programs must be postmarked on or before 10 Dec. Fellowships are awarded in the early spring. Complete details and application blanks may be obtained from the Fellowship Office, National Academy of Sciences–National Research Council, 2101 Constitution Ave., NW, Washington 25, D.C.

Grants and Fellowships Awarded

The following **AAAS research grants** have been awarded:

Alabama Academy of Science to R. E. Wingard, Alabama Polytechnic Institute. Specific heat and heat capacity of furfural, and so forth.

Ohio Academy of Science to P. Chacharonis, Ohio State University. Protozoa on sphagnum plants in a bog in central Ohio.

Ohio Academy of Science to E. Smith, Akron, Ohio. Life histories of non-cave-dwelling bats.

Ohio Academy of Science to T. D. Howe, Defiance College. Flora of northwestern Ohio.

A series of studies of the distribution of heat generated during the cutting of metals will be carried out during the coming year by Columbia University's School of Engineering under a $10,000 grant from the **American Society of Tool Engineers.** This is the first research contract entered into by the society. In discussing the work, Victor Paschkis, adjunct associate professor of mechanical engineering at Columbia and technical director of the university's Heat and Mass Flow Analyzer Laboratory, said "Thermal studies of this nature, which are closely tied in with the question of tool life and efficiency, have been severely limited up to now by the equipment and measurement techniques available."

Georgetown University Medical Center has announced receipt of $109,885 in research grants. Seven of the 8 individual grants reported were from the U.S. Public Health Service and totaled $106,537.

The following grants and fellowships have been awarded by the **National Tuberculosis Association** and its medical section, the American Trudeau Society, for the 1954–55 fiscal year.

Grants

T. L. Badger, Boston City Hospital. Pulmonary physiology.

V. Bryson, Biological Laboratory, Cold Spring Harbor, N.Y. Genetics of mycobacteria.

M. I. Bunting, Yale University. Genetics of mycobacteria.

A. Christie, Vanderbilt University. Histoplasmosis and pulmonary calcification.

C. Cohen, Jackson Memorial Laboratory. Genetic resistance to tuberculosis in rabbits.

G. F. Filley, Trudeau-Saranac Institute. Pulmonary function.

J. E. Forney, University of Southern California. Allergy and serology of tuberculosis.

B. Gerstl, Veterans Administration, Oakland, Calif. Breakdown of the tubercle bacillus by host tissue as a factor in resistance to tuberculosis.

E. M. Lincoln, New York University-Bellevue Medical Center. Pathogenesis, prognosis, and treatment of tuberculosis in children.

M. B. Lurie, University of Pennsylvania. Genetic resistance to tuberculosis.

C. J. Martin, Firland sanatorium, Seattle. Equality of ventilation in lobes of the lung.

G. M. Meade and R. S. Mitchell, Trudeau-Saranac Institute. Statistical study of treatment of tuberculosis.

Q. N. Myrvik, University of Virginia. Tuberculostatic substances in mammalian tissues.

C. E. Palmer, Division of Chronic Disease and Tuberculosis, Public Health Service, Washington, D.C. Minimal tuberculosis in student nurses.

E. M. Papper, Columbia University. Effects of anesthesia during pulmonary resection.

H. Pope, Duke University. Metabolism of tubercle bacilli.

S. Raffel, Stanford University. Virulence, immunity, and allergy in tuberculosis.

L. J. Roth, University of Chicago. Distribution of C^{14} labeled para-aminosalicylic acid in mice and guinea pigs.

L. D. Scheel, Trudeau-Saranac Institute. Metabolism of isonicotinic acid hydrazide by tubercle bacilli.

F. B. Seibert, University of Pennsylvania. Antigens of the tubercle bacillus.

W. Steenken, Jr., Trudeau-Saranac Institute. Maintenance of mycobacterial culture depot.

K. L. Terplan, University of Buffalo. Pathogenetic studies on human tuberculosis.

T. R. Watson, Jr., Dartmouth Medical School. Lung function during thoracic surgery.

H. S. Willis, Gravely Sanatorium, Chapel Hill, N.C. Vaccination against tuberculosis.

National Society for Medical Research. Annual contribution to educational program on scientific animal experimentation.

M. Berthrong, Glockner-Penrose Hospital, Colorado Springs, Colo. Tissue culture studies on resistance to tuberculosis.

E. Bogen, Olive View Sanatorium, Olive View, Calif. Classification of mycobacteria.

S. P. Colowick and N. O. Kaplan, Johns Hopkins University. Mechanism of action of isonicotinic acid hydrazide and related compounds.

M. S. Dunn, University of California, Los Angeles. Chemistry of tubercle bacilli.

A. Goldman, City of Hope Medical Center, Duarte, Calif. Electrolyte, protein and adrenal function studies in tuberculous patients.

W. F. Kirchheimer, Northwestern University. Correlation of mycobacterial enzyme and growth inhibition.

W. McDermott, Cornell University. Host-parasite relationships in tuberculosis.

R. W. Manthei, Jefferson Medical College. Metabolic studies on C^{14} labeled isoniazid.

G. Middlebrook, National Jewish Hospital, Denver. Chemotherapy and pathogenesis of experimental tuberculosis.

P. M. Seebohm, State University of Iowa. Pathogenesis of pulmonary emphysema.

J. E. Sifontes, Sanatorio Alejandro, Puerto Rico. Chemotherapy of primary tuberculosis and tuberculous meningitis in children.

D. N. Walcher, Indiana University. Enzyme therapy in tuberculous meningitis.

J. J. Waring, Fitzsimmons Army Hospital and Colorado General Hospital, Denver. Minimal tuberculosis in military personnel.

L. E. Wood, University of Kansas. Tuberculin-histoplasmin rates as an indication of the prevalence of infection in Kansas City, Mo.

Fellowships

C. M. Coleman, National Jewish Hospital, with G. Middlebrook. Chemotherapy of tuberculosis, with special reference to mode of action of isonicotinic acid hydrazide.

A. J. Crowle, Stanford University, with S. Raffel. Immunizing factors of the tubercle bacillus.

National Research Council. Reimbursement for increased increments and administrative costs on current and past fellowships.

National Research Council. Research project at choice of applicant, candidate to be chosen by NRC.

In the Laboratories

A research program in molybdenum chemicals has been launched by the **Climax Molybdenum Co.** with a $250,000 expansion of the company's laboratories in Detroit. The new program will be devoted mainly to research in molybdenum catalysts for upgrading low octane gasolines; in the synthesis of new molybdenum chemicals; and in Moly-sulfide, a new lubricant.

The **General Electric Co.** has announced formation of the chemical and metallurgical division, which includes the former chemical division and the carboloy department. Robert L. Gibson, who will make his headquarters in Pittsfield, Mass., has been appointed general manager of the new division. Under the reorganization arrangement, the former chemical division's four operating departments will remain unaffected; their general managers will continue to report to Mr. Gibson. The chemical and metallurgical division will be made up of five operating departments: carboloy, plastics, silicone products, chemical materials, and laminated and insulating products.

Plans for a research laboratory devoted exclusively to industrial products have been announced by the DuPont Co.'s textile fibers department. To be known as the **Industrial Products Research Laboratory,** it will be located at Newport, Del., and will develop additional uses for available fibers as well as establish objectives for the development of new fibers to meet the demands of American industry. Approximately 40 persons will be assigned to the new laboratory.

Modern Pharmacy, bimonthly publication of Parke, Davis and Co., celebrates its golden anniversary with the September issue. The magazine is distributed to nearly 100,000 pharmacists and pharmacies in the United States, Canada, Puerto Rico, and the Philippines.

Gordon Dean, former chairman of the Atomic Energy Comission, has announced the formation of the **Nuclear Science and Engineering Corp.** Dean is

chairman of the board of directors of the new company, and Ronald A. Brightsen, who was previously associated with the atomic power division of the Westinghouse Electric Corp., is president. The American Metal Co., Ltd., and the Ketay Manufacturing Corp., with Lehman Bros., investment bankers, participated in the creation of the new enterprise. The firm, which has headquarters in Pittsburgh, will provide a variety of technical services to organizations engaged in nuclear power development and to industries interested in the application of radioactivity to industrial products and processes.

John A. MacCartney of Parke, Davis and Co. reported recently that America's **pharmaceutical industry** is spending approximately $60 million a year for research.

Miscellaneous

The National Academy of Sciences–National Research Council has announced the availability of the *1952–53 Report of the Committee on the Measurement of Geologic Time.*

The October issue of *The Scientific Monthly* features articles on "Superficial aspects of modern organic reefs," by Preston E. Cloud, Jr.; "Should fluorides be added to public water supplies?" by James H. Shaw; "The world's principal food plants," by Karl S. Quisenberry, this being the second article of a series on *Species that feed mankind*; "Radio and television," as mediums for education, by C. V. Newsom; seven papers comprising a group on the general topic, *The present state of operationalism,* by Henry Margenau, Gustav Bergmann, Carl G. Hempel, R. B. Lindsay, P. W. Bridgman, Raymond J. Seeger, and Adolph Grünbaum. The issue also contains 24 book reviews and 8 communications from W. D. Hambly, C. G. Abbot, P. A. M. Dirac, Ernest Hocking, and others.

A new 134-page report on the **smog research** program conducted by the Stanford Research Institute in Los Angeles County during the past 6 yr has been released jointly by S.R.I. and the Western Oil and Gas Association, sponsors of the research. The report indicates that the stagnant condition of the air over such a large metropolitan area as Los Angeles, with its many industrial, commercial, and domestic activities, allows time for the ordinarily harmless chemicals emitted to remain in intimate contact and to react with one another photochemically. Sunlight is also a critical factor in the production of "parent" substances responsible for smog conditions.

The **Society for General Microbiology,** England, has recently undergone some reorganization. This society was founded in 1945, and since 1947 has published through the Cambridge University Press the *Journal of General Microbiology* and a series of symposiums. It has approximately 1260 members and has established a permanent office at the Institute of Biology, Tavistock House South, Tavistock Sq., London, WC 1. Inquiries regarding application for membership and payment of subscriptions should be made to this office. Other questions should be addressed to the appropriate officer of the society, and inquiries about the journal made to the Cambridge University Press. All matters regarding meetings are dealt with by the meetings' secretary, E. F. Gale, dept. of biochemistry, Cambridge University. Other officers are pres., H. J. Bunker; sec., K. E. Cooper, dept. of preventive medicine, Bristol University; and treas., R. Lovell. Editors of the journal are B. C. J. G. Knight and A. F. B. Standfast.

Speakers have been announced for the 1954–55 **traveling lecture program,** a joint activity of the Oak Ridge Institute of Nuclear Studies and Oak Ridge National Laboratory in cooperation with the Atomic Energy Commission. The ORINS university relations division has just issued a brochure that lists the speakers, their subjects, and gives instructions for requesting lectures. A copy of the brochure and other information on the program may be obtained from W. W. Grigorieff, Chairman, university relations division, ORINS, Oak Ridge, Tenn.

"Man measures the universe" is the theme of **UNESCO's 4th traveling science exhibition** which will have its first public showing in October in Brussels, Ghent, and Liége, Belgium. It has been prepared especially for display in the countries of Western Europe during 1955 and 1956. The exhibition stresses measurement of distances and dimensions as the basis of all science. In the 4 yr during which UNESCO exhibitions have been traveling about the world, they have been shown in 26 countries to approximately 1¼ million persons.

Necrology

Eugene M. Bacigalupi, 73, head of the physics department at the University of Santa Clara, Santa Clara, Calif., 26 Aug.; **Max W. Ball,** 68, geologist, petroleum engineer, and former chief of the oil and gas division of the Interior Department, Washington, D.C., 28 Aug.; **Arthur Carpenter,** 64, archeologist, explorer, roentgenologic and radiation scientist for the Army Medical Research Laboratory at Fort Knox, Ky., 17 July; **Bascom H. Palmer,** 64, eye specialist, surgeon, and past president of the Florida Council for the Blind, Miami, Fla., 2 Sept.; **Glenn A. Shook,** 72, professor of physics and astronomy at Wheaton College, Norton, Mass., 26 Aug.; **Franklin R. Strayer,** 89, former instructor in physics and chemistry at Cornell University, Ithaca, N.Y., 2 Sept.; **Herbert C. Woolley,** 73, psychiatrist and former head of the Philadelphia State Hospital, Philadelphia, Pa., 28 Aug.; **Roderick B. Young,** former associate director of research at the Ontario Hydro-Electric Commission, Toronto, Canada, 24 Aug.