News and Notes

NSF Summer Institutes for Teachers of Mathematics and Science

During the past two summers the National Science Foundation has supported "summer institutes" designed to help teachers of science and mathematics increase their competence. In these institutes teachers from high schools and the smaller liberal arts colleges and universities—especially those remote from centers of research—have gathered together to learn, from persons noted for both scholarship and skill in exposition, about some of the more important and recent concepts and methods in their fields. It has been hoped that these teachers, armed with new information and insights and enthusiasms, could then return to their colleagues and students and think anew with them about teaching materials, methods, and objectives in the light of modern scientific research.

In the summer of 1953 two such institutes for college teachers were supported by the foundation: one in mathematics at the University of Colorado, and one in physics at the University of Minnesota. In the summer of 1954 four were supported. Of the four, three were again for college teachers: one in mathematics at the University of North Carolina, another in mathematics at the University of Oregon, and one in chemistry at the University of Wyoming. (In three instances the Fund for the Advancement of Education supported concurrent institutes for high-school teachers: at Minnesota in 1953, and at Oregon and Wyoming in 1954.) The fourth, for high-school teachers of mathematics, was held at the University of Washington.

The typical summer institute differs from both the typical academic summer session and the typical summer workshop in several important respects. The staff is not local in character but is selected from a wide geographic region, generally from the country at large. The emphasis is on subject matter, yet with a view to increasing the competence of teachers as teachers, not as research workers. The program may combine both extended series of lectures by a few people and short series by many, but the institute is long enough (4 to 8 weeks) and well enough coordinated to constitute a significant educative experience for the participants.

It has been thought important to locate institutes on campuses that have climates conducive to summer work, and to provide adequate recreational activities for participants and their families. Every attempt has been made to secure living quarters for all participants, including families and staff, that will foster the extended informal contacts and conversations deemed so important by members of past institutes.

The expenses of some participants have been paid by their home institutions, and some have attended at their own expense; but, in the case of every institute, funds have been provided for modest stipends to enable 20 to 30 persons to attend who could not otherwise afford to do so. In some instances no academic credit has been offered for the work done, in others optional credit has been provided at a reasonable cost, and in still others a certificate of attendance has been issued. In all cases applications for membership and stipends are issued and handled by the college or university conducting the institute.

In the summer of 1955 nine institutes will be supported by grants from the National Science Foundation. Their locations, the groups they are designed to serve, and *the persons to whom all inquiries about them should be addressed* are as follows.

University of Minnesota, for college teachers of chemistry; Robert C. Brasted, Dept. of Chemistry, University of Minnesota, Minneapolis 14.

University of New Mexico, for high-school and college teachers of physics; John R. Green, Dept. of Physics, University of New Mexico, Albuquerque.

Oak Ridge Institute of Nuclear Studies, for high-school teachers of science; Ralph T. Overman, Special Training Division, Oak Ridge Institute of Nuclear Studies, Inc., P.O. Box 117, Oak Ridge, Tenn.

Oklahoma Agricultural and Mechanical College, for college teachers of mathematics; L. Wayne Johnson, Dept. of Mathematics, Oklahoma A. and M. College, Stillwater.

Pennsylvania State University, for high-school teachers of science; William H. Powers, Arts and Science Extension, Pennsylvania State University, University Park.

Stanford University, for college teachers of mathematics; Harold M. Bacon, Dept. of Mathematics, Stanford University, Stanford, Calif.

Syracuse University, for college teachers of chemistry; Henry E. Wirth, Dept. of Chemistry, Syracuse University, Syracuse 10, N.Y.

University of Wisconsin, for high-school and college teachers of mathematics; C. C. MacDuffee, Dept. of Mathematics, University of Wisconsin, Madison 6.

University of Wyoming, for college teachers of biology; William B. Owens, Dept. of Zoology, University of Wyoming, Laramie.

More detailed information about several of the institutes appears in *Science,* 18 Feb., page 239; 11 Mar., page 358; and elsewhere in this issue. Details concerning others will appear in forthcoming issues.

The National Science Foundation expects to continue and hopes to expand its program of summer institutes in 1956. Proposals from colleges and universities for funds in support of 1956 institutes should be received at the foundation office not later than 1 Oct. 1955. *All proposals for 1956 or inquiries preliminary to them should be addressed to*: Program Director of Education in the Sciences, Division of Scientific Personnel and Education, National Science Foundation, Washington 25, D.C.

HARRY C. KELLY
National Science Foundation, Washington 25, D.C.

Indian Science Congress

The 42nd Indian Science Congress was held at Baroda under the auspices of the M. S. University, Baroda, 4–10 January 1955. Shri Jawaharlal Nehru, Prime Minister of India, opened the congress. About 5000 visitors, including 2000 delegates attended the Session.

At the opening session S. K. Mitra, president of the session, feelingly referred to the sudden and sad demise of S. S. Bhatnagar, secretary to the Government of India, Ministry of Natural Resources and Scientific Research, and director, Council of Scientific and Industrial Research, a past general president and an honorary member of the Indian Science Congress Association. The audience stood in silence for 1 minute when business of the ceremony commenced.

Welcoming the scientists and other visitors to the session, Hansa Mehta, vice chancellor, M. S. University, and chairman of the local reception committee, made an appeal for the application of science in the service of man so that the destructive potentiality of science could be usefully converted to doing good for people.

In his short inaugural address Shri Jawaharlal Nehru exhorted the scientists to coordinate activities and render all help in framing the 2nd National Five-Year Plan for improvement of the conditions of people.

P. C. Mahalanobis introduced the guests from countries abroad, numbering about 60, to the audience. Mitra emphasized the need for application of modern scientific methods in the industrial sphere with a view to raising the production and making things available to consumers at lower prices.

The scientific business of the session was carried on in 13 different sections, representing different branches of science. More than 1000 papers were presented and read. Twenty-nine symposiums on different scientific aspects and problems were held in the 13 sections. The following popular lectures were given: "Symmetry in the atomic world" by P. A. M. Dirac, "On the human value of scientific progress" by P. Auger, "Volcanic eruptions" by T. Watanabe, "Relation of science to democracy" by W. Kaempffert, "Hemoglobin" by Linus Pauling, "Scientific foundation of the planning in the U.S.S.R." by K. V. Ostrovityanov, "Study of India in the U.S.S.R." by A. A. Guber, "Scientific research in New China" by Chien Tuan-Sheng, "Science and its social relations" by A. R. Wadia. Some of the interesting special lectures were "Synthesis and stereochemistry of carotenoids" by Paul Karrer, "Metallogenetic provinces and epochs in Japan" by T. Watanabe, "Extensive showers of cosmic rays" by P. Auger, "Iron and manganese resources of Japan" by T. Watanabe, "Present state of geological education in Japan" by T. Watanabe, "Structure of proteins" by Linus Pauling, "Soda-ash industry" by T. P. Hou, "Chinese herbal medicines" by Hsieh Yu.

The meetings of the executive committee and the council of the Indian Science Congress Association were held on 3 January 1955. The meeting of the general committee was held on 8 January 1955. B. C. Roy was elected as general president for the year 1956–57. M. S. Krishnan, director, Geological Survey of India, is general president for the year 1955–56. The next session of the Science Congress will be held at Agra in 1956.

U. P. BASU, *General Secretary*
Indian Science Congress Association,
1 Park Street, Calcutta, India

Science News

Recently the Hoover Commission made public its recommendations on the **Federal medical services,** which it characterized as a cumbersome system that breeds inefficiency and huge waste. The commission's 16-member Medical Services Task Force noted that the services cost more than $2 billion annually exclusive of another $2 billion spent for disability allowances; that the Federal Government uses 10 percent of the nation's physicians, 9 percent of its dentists, and 6 percent of its nurses; and that the Federal Government operates 13 percent of the nation's hospital beds.

The fundamental recommendation in the report is the one that suggests the creation of a Federal Council of Health to further coordination, eliminate duplication, and develop over-all policies on Federal health services. In his letter transmitting the task force's report to former President Hoover, Theodore G. Klumpp, chairman, said:

> We place first in importance, among all of our recommendations, the creation of a Federal Council of Health. Without such a council, many of the remaining recommendations will fail of success; with it, they are almost sure of eventual, if not immediate, usefulness.

The proposed council would consist of members of the various branches of the medical profession and of eminent citizens who would serve by appointment of the President.

The Federal medical services have grown to include 26 Federal departments or agencies made up of 66 separate administrative units engaged in one or more health functions. Most of these groups have different objectives and responsibilities and serve different groups of the citizenry.

Recently Robert J. Havighurst, professor of education at the University of Chicago, told an American Council on Education subcommittee, which was established to study a Federal scholarship program, that each year approximately 100,000 qualified American high-school seniors have a strong **desire to go to college, but cannot afford it.** He said that annually approximately 300,000 graduates are in the top one-quarter of their classes, but never go on to higher education.

He placed these students in three categories of 100,000 students each: (i) those who have the necessary grades and a very strong desire to go to college, but not enough money; (ii) those who also have the

grades, and may or may not have the money, but who have only a weak motivation to continue their education after high school; and (iii) those who, although they may have both the money and desire, are felt to be unfit for college and in all probability would not be recommended by their high schools.

The complicated controversy over the **Arnold Arboretum of Harvard University** [*Science,* **119,** 369 (19 Mar. 1954); **119,** 459 (9 Apr. 1954)] has finally been resolved. The question involved a challenge of the Harvard Corporation's right, as administrators of the Arboretum trust, to plan the removal of the principal research collections of the library of the Herbarium of the Arnold Arboretum from Jamaica Plain to more accessible quarters in the new Harvard University Herbarium in Cambridge.

A decision on 11 Feb. by the Supreme Judicial Court of the Commonwealth of Massachusetts upheld the Attorney General's authority to determine a question involving the breach of a charitable trust. This action allows the Attorney General's decision of 2 July 1953 to stand. As described by the *Harvard Alumni Bulletin* of 26 Feb., the decision states that:

> . . . the judgment of trustees cannot be overridden by the courts unless the trustees decide arbitrarily, capriciously, or in bad faith; that the College reached its decision honestly, faithfully, and for what it considers to be the best interests of the Arboretum; that "there is no legal breach of trust;" and that under such circumstances to allow the question to come to court would "open the door to unreasonable and vexatious litigation."

William Penney, director of atomic weapons research for the British Atomic Energy Authority, has accepted an invitation to visit the United States to discuss a greater **exchange of nuclear information** and to observe the bomb tests that are taking place in Nevada. It has been suggested that this invitation reflects a belief here that Britain has developed processes for making hydrogen bombs that are more efficient and economical than this country's.

The McMahon Act of 1946, which forbids the exchange of atomic information even with friendly nations, was somewhat liberalized by Congress last August so that the way has been opened for the proposed discussion. However, Britain has no such restricting legislation and Penney is said to have the full authority of his government to make decisions.

The skull of Swanscombe man was discovered in Kent, England, in 1935 and 1936. Its assignment to the second interglacial period of the Pleistocene seems indisputable. The constituent bones, a parietal and an occipital, differ in no significant way from those of modern or sapiens man. It has been suggested, however, that the Swanscombe skull could have possessed a Neanderthaloid face such as occurs in the **Steinheim skull.** The latter, found in Germany in 1933, interestingly combines a Neanderthaloid face with a braincase that is rather more sapiens than Neanderthal in form. The Steinheim skull has generally been regarded as belonging to the third glacial or third interglacial period, and hence as younger than the Swanscombe skull. F. E. Zeuner, however, reports [*Man* **54,** 59 (Apr. 1954)] that a restudy by K. Adam of the gravels in which the Steinheim skull was found allocates them to the second interglacial period. Thus the Steinheim and Swanscombe skulls appear virtually contemporaneous. Zeuner insists that the question of the specific identity of these skulls must now be raised in earnest. In view of the known rather low degree of correlation between braincase and facial skeleton in Pleistocene man, it would of course be more than rash to assert that the Swanscombe skull represents true *Homo sapiens.* Contemporaneity notwithstanding, however, the burden of proof rests heavily on those who would hang a Steinheim or any other sort of Neanderthaloid face on the truly sapiens-like Swanscombe braincase fragments.—W.L.S., JR.

On 2 Mar., for the first time since 1952, the Government revised and shortened its **lists of essential activities** and critical occupations—lists that are used, especially by the Department of Defense and local draft boards, as guides in official decisions regarding the equitable distribution of manpower between the armed services, defense production, and the civilian economy. The original lists included 25 essential activities and 62 critical occupations. The new lists name 10 of the former and 32 of the latter.

Two changes of particular significance are the segregation of research and development services into a separate category, and the addition to the occupations list of high-school science and mathematics teachers. For some of the scientific and professional fields, it should also be noted that the new lists apply only to those having graduate degrees, masters or doctors, or at least 1 yr of equivalent postgraduate training or experience.

The increase in **Japan's budget appropriations** for the promotion of science is shown by the following figures (in thousands of dollars); the two amounts given are for 1949 and 1954, respectively: government research institutes, \$7513 and \$16,847; national university research institutes, \$1200 and \$5452; research funds allotted to university chairs, \$1690 and \$6711; subsidies and research contracts, \$1250 and \$6730; travel expenses to international scientific conferences, 0 and 10; travel expenses for scientists and engineers, 0 and 23.

In February Henry Schmitz, president of the University of Washington, Seattle, would not approve the recommendation of the university's physics department that J. Robert Oppenheimer be invited to deliver a week of lectures during the spring term. He based his decision on Oppenheimer's "governmental relationships."

Recently both Victor Weisskopf of Massachusetts

Institute of Technology and Perry Miller of Harvard University have **refused invitations to lecture** at the University of Washington. Weisskopf has said that no "self-resepcting" physicist should go to the university after such a ban, and Miller termed the action "not only an egregious insult to a great scholar, but also a flagrant violation of the fundamental principles of intellectual integrity and liberty of spirit upon which the education system of a free society is erected."

William Creasy, a major general and the U.S. Army's chief chemical officer, reported recently that artificial smoke **reduces the effects of thermal radiation.** Preliminary tests conducted at the Nevada proving ground indicate that two types of smoke can be used: the fog-oil type, created by releasing hydrocarbon oil droplets into an artificial "smog" where they scatter and attenuate heat or light; and carbon smoke, which absorbs the heat radiation.

Many roads in Great Britain have been found to have been metalized by a **uranium-bearing slag** that is highly radioactive. A dispatch from London to *Foreign Trade,* an Ottawa publication, reports that as a result of the discovery, measures are being taken to discontinue the use of old mine dumps in Devon and Cornwall as sources of road metal. A survey has shown that many of these tailings are good uranium ore.

Scientists in the News

Hans Suess, physical chemist for the U.S. Geological Survey, Washington, D.C., became a naturalized United States citizen on 8 Mar. He is a native of Austria, and during World War II he conducted research for the German atomic energy program. Suess has developed an acetylene gas counting method for radiocarbon dating [*Science* **120,** 5 (2 July 1954)]. This method, for which smaller samples than those necessary for either solid-carbon counting or scintillation counting can be used, has extended the possible range of radiocarbon dates from about 17,000 yr to about 33,000 yr. Suess has also published one list of radiocarbon dates in *Science* [**120,** 467 (24 Sept. 1954)]. He is coauthor, with M. Rubin, of a second list that will appear soon.

Commenting on the recent appointment of **Samuel Devons,** physicist, to the Langworthy chair of experimental physics at Manchester University (England), the *Manchester Guardian Weekly* for 3 Feb. reported on a few of the previous incumbents in a review of physics partially quoted here:

> . . . The last 70 years have seen a breathtaking transformation of physics and each Langworthy professor has played an important part in it. Balfour-Stewart was the first holder; his textbooks on heat were standard works. Arthur Schuster followed him in 1887; he had worked with Clerk Maxwell. Physics was then just emerging as a separate science. Schuster's organization of the teaching of experimental physics set a pattern which became classical; his *Theory of Optics* was the standard textbook for years. Rutherford followed him in 1907, and, in his 12 years here, laid the foundation of our present understanding of atoms. His first act was to borrow a third of a gram of radium from Vienna and with this material a host of fundamental facts about radioactivity were discovered and Rutherford was able to formulate them in terms which are now accepted. He was awarded a Nobel prize in 1908. His successor, W. L. Bragg, was already a Nobel prize man. He devoted himself and his laboratory to an investigation of the structure of solids; he was a pioneer in the technique of x-ray diffraction. P. M. S. Blackett succeeded Bragg and his work in the field of cosmic rays is still fresh in the mind. In 1948 he, too, received the Nobel prize. A great professor of physics must be a man of many parts. He must be distinguished by his research or else he will not attract the right staff. He must be a teacher or he will not inspire his staff and students. He must have some of the talents of the business man or he will not effectively administer (or even acquire) the increasingly large sums needed to finance research projects. And he must have a feeling, too, for the life and balance of a university as a whole. . . .

John G. Bolton, who in 1948 discovered the first "radio stars," and who for the past 10 yr has served as a research officer in the division of radiophysics of the Commonwealth Scientific and Industrial Research Organization in Sydney, Australia, has been appointed a senior research fellow in physics and astronomy at California Institute of Technology. He will assume responsibility immediately as scientific director of a new project that will attempt to detect radio signals from outer space, find out what their sources are, and discover as much as possible about the position, strength, and size of these sources.

Elijah Adams, formerly of the Institute of Arthritis and Metabolic Diseases, Bethesda, Md., has been appointed associate professor of pharmacology at New York University College of Medicine.

President Ramon Magsaysay has awarded the following scientists the Distinguished Service Star for their outstanding contributions to Philippine science: **Joaquin Maranon, Nemesio B. Mendiola, Eduardo Quisumbing, Filemon C. Rodriguez, Alfredo C. Santos, Leopoldo P. Uichanco, Patrocinio Valenzuela, Deogracias Villadolid, Walfredo de Leon.**

George Ellis Armstrong, a major general and the surgeon general of the U.S. Army for the past 4 yr, has been named vice chancellor for medical affairs at New York University. His appointment as chief administrative officer of the New York University–Bellevue Medical Center is effective following his retirement from the Army in July. Armstrong has served with the Army for many years, having been an officer in the Medical Corps since his graduation

from Indiana University Medical School in 1925. Donal Sheehan, associate director of the Medical Center, has been acting director since the resignation of Edwin A. Salmon in March 1953.

Armstrong interned at Letterman General Hospital in San Francisco and has since served at many military posts in the United States and overseas. He is an honor graduate of the Army Medical School, Washington, D.C., a graduate of the basic and advanced courses of the Medical Field Service School, and a graduate of the Command and General Staff School.

Before World War II he was stationed at Schofield Barracks, Hawaii; Walter Reed Army Hospital, Washington, D.C.; Fort Benning, Ga.; Tientsin, China; Fort Stotsenberg, Philippine Islands; Carlisle Barracks, Pa.; and Camp Barkeley, Tex. During World War II he was assistant theater surgeon of the China-Burma-India theater in 1943–44, and for 2 yr was surgeon of the China theater. In 1946 he became chief of the personnel division of the surgeon general's office, and in 1947 he was appointed deputy surgeon general.

August W. Raspet, head of the department of aerophysics at Mississippi State College, is to deliver a lecture on "The sailplane in boundary layer research" before the Royal Institute of Technology in Stockholm, Sweden, on 5 Apr. He left on 21 Mar. in order to attend a conference on aviation research at the National Physical Laboratory, Teddington, England, and before he returns on 19 Apr. will go to Germany and France for conferences with leaders in aerodynamics research.

Avram Goldstein, assistant professor of pharmacology at Harvard University, has been appointed professor and executive head of the department of pharmacology and therapeutics at Stanford University School of Medicine, effective 1 July. He will fill the post left vacant by Windsor C. Cutting, who became dean of the Medical School in 1953.

Another new appointment at Stanford is that of **David M. Mason,** who is at present supervising research in chemical engineering at the jet propulsion laboratory of California Institute of Technology. He will become associate professor of chemical engineering on 1 Sept.

Andrey A. Potter, dean emeritus of Purdue University, will receive the annual award for outstanding service from the National Society of Professional Engineers when it meets 2–4 June in the Bellevue-Stratford Hotel in Philadelphia, Pa.

John F. Reinhard, former director of pharmacologic research in the Warner-Chilcott Research Laboratories, New York, has joined the Mead Johnson Research Laboratories, Evansville, Ind., as director of the pharmacology department. He succeeds **Marshall R. Warren,** who recently was promoted to director of the Pharmaceutical Research and Development Division.

Herbert E. Longenecker, a biochemist and dean of the Graduate School at the University of Pittsburgh, will become vice president of the University of Illinois in charge of the Chicago professional colleges. He will reach Chicago by 1 Aug. to fill the post held until July 1953 by Andrew C. Ivy. Longenecker will be administrative head of the university's colleges of medicine, dentistry, and pharmacy, graduate college in Chicago, school of nursing, research and educational hospitals, clinics, institutes, and other health science units at the West Side Medical Center.

Carroll Vincent Newsom, associate commissioner for higher and professional education of the State of New York and former professor and head of the department of mathematics at Oberlin College, will become executive vice chancellor of New York University on 15 July. He will fill the position to be vacated by **David Dodds Henry** when he assumes the presidency of the University of Illinois. Newsom is past president of the Southwest Division of the AAAS.

Erling Johansen, senior fellow in dental research at the University of Rochester School of Medicine and Dentistry, has been appointed chairman of the department of dentistry and dental research. He succeeds **John W. Hein,** who has been appointed dental director of the Colgate-Palmolive Co. Both appointments were effective on 1 Mar.

Martin Kamen, professor of biochemistry at Washington University, St. Louis, has been awarded $7500 damages by a District of Columbia jury, who agreed he had been libeled in 1951 by the *Washington Times-Herald.* The paper published a picture and two articles identifying him as the anonymous person described unfavorably by Sen. Hickenlooper (R. Ia.) in a Senate speech on 30 June 1951. A companion suit against the *Chicago Tribune,* which had printed the same material, was dismissed on a technicality; Kamen plans to appeal this ruling.

Olof Larsell, formerly professor of anatomy at the University of Oregon and at the University of Minnesota, is visiting professor of anatomy at the University of North Dakota School of Medicine for the current year.

Wilbur W. Hansen, former senior electrical engineer with Armour Research Foundation, has joined the staff of Stanford Research Institute, Stanford, Calif. He will work as a senior research engineer on the design of servomechanisms and controls for automation in the control systems laboratory of the engineering division.

The American Locomotive Co., Schenectady, N.Y., has announced several appointments to its atomic energy products department. One of the first projects that the new men will work on will be the construction of the Army package power reactor, for which the company was awarded a contract last December. The

APPR will be the Army's first nuclear-driven power plant and the first with components designed to be flown to remote bases in any part of the world.

J. L. Meem, Jr., for the past year a reactor physicist for the aircraft nuclear porpulsion project at the Oak Ridge National Laboratories, has been named chief reactor scientist.

Robert D. Robertson, formerly welding engineer with Air Products Corp., Emmaus, Pa., and Fitzgibbons Boiler Co., Oswego, N.Y., has been appointed materials engineer.

Harold Hoover, a project engineer who tested liquid metal components at the Knolls Atomic Power Laboratory, Schenectady, has become process design engineer.

Alice K. Bicknell, former chairman of the Wayne University bacteriology division, has been appointed chief of the bacteriology division at the New England Institute for Medical Research in Ridgefield, Conn.

R. Dana Russell, geophysicist and chairman of the Scientific Planning Board at the U.S. Navy Electronics Laboratory in San Diego, Calif., has accepted a position as head of geological research for the Ohio Oil Co. His principal office will be in Denver, Colo., where the company will construct a new laboratory. Before his departure from California, a commendation for meritorious service to the Navy was presented to Russell by Henry E. Bernstein, commanding officer of NEL.

James B. Lesh, a member of the staff of the Armour Laboratories, Kankakee, Ill., since 1939, has been appointed director of research. He succeeds **E. E. Hays,** who has resigned.

Webb Haymaker, chief of the neuropathology section of the Armed Forces Institute of Pathology, recently completed a 4-wk tour of the Federal Republic of Germany as a guest of the German Government. Haymaker's party was given an official welcome in Bonn, then held round-table conferences with appropriate Federal Ministries. The group of seven doctors, some of them leaders in the field of public health, also visited various German cities, including West Berlin.

The tour was part of an exchange program with the United States inaugurated in 1952. The objective is to give Americans an opportunity to become acquainted with present-day life and institutions in Germany, particularly in their fields of special interest.

Necrology

Charles H. Alvord, 82, retired agriculturist with the U.S. Department of Agriculture, Alexandria, Va., 20 Feb.; **Oswald T. Avery,** 77, bacteriologist, pneumococci investigator, emeritus member of the Rockefeller Institute for Medical Research, Nashville, Tenn., 20 Feb.; **Louis H. Baretz,** 59, former assistant professor of urology at the State University College of Medicine, Brooklyn, N.Y., 2 Mar.; **Allan P. Colburn,** 50, chemical engineer, provost of the University of Delaware, Newark, Del., 7 Feb.; **Frank J. Feely,** 63, retired engineer of manufacture for the Western Electric Co., Westfield, N.J., 22 Feb.; **Norman Gaskins,** 42, resin specialist, assistant professor of chemistry at Lincoln University, West Chester, Pa., 17 Feb.; **Calvin H. Goddard,** 63, medical historian, criminologist, developer of forensic ballistics, former asistant director of the Johns Hopkins Hospital and director of the Cornell Clinic, New York, 22 Feb.; **B. Britton Gottsberger,** 82, former instructor in mining and metallurgy at Yale University, New Haven, Conn., 28 Feb.

James C. Hening, 63, researcher and associate professor in the department of food science and technology at the State Agricultural Experiment Station, Geneva, N.Y., 17 Feb.; **Leon S. Johnston,** 67, author, professor of mathematics at the University of Detroit, Detroit, Mich., 18 Feb.; **Harold J. Kersten,** 56, investigator in roentgenology, author, professor of biophysics at the University of Cincinnati, Cincinnati, Ohio, 2 Mar.; **Wilhelmine E. Key,** 82, eugenist, former professor of biology at Lombard College, former eugenical field worker with the Carnegie Institution, Somers, Conn., 31 Jan.

Alwin M. Pappenheimer, 76, researcher on rickets, vitamin E deficiency, and viral diseases, professor emeritus of pathology at Columbia University, New York, 21 Feb.; **G. B. Reed,** 66, researcher on tuberculosis, gas gangrene, and rinderpest, retired head of the department of bacteriology, Faculty of Medicine, Queen's University, Kingston, Ont., Canada, 21 Feb.; **Victor C. Stechschulte,** 61, director of the Xavier University seismographical observatory and chairman of its mathematics-physics department, Cincinnati, Ohio, 3 Mar.; **Georg Tischler,** 77, dean of German plant cytologists, professor emeritus at the University of Kiel, Kiel, Germany, 6 Jan.

Meetings

The **Laurentian Hormone Conference of the AAAS** will hold its 1955 annual meeting at the Hotel Stanley, Estes Park, Colo., 11–16 Sept. Interested investigators and specialists in the hormone field may apply for attendance by writing to the Committee on Arrangements, 222 Maple Ave., Shrewsbury, Mass. Since accommodations at the hotel necessarily limit the number of participants, only those persons submitting applications can be considered. Completed forms must be received by the committee *no later than 6 May* in order to insure issuance of invitations a soon as possible thereafter. The program follows.

I. *Hormone Biosynthesis and Metabolism*: "The biosynthesis and metabolism of thyroid hormone," J. Roche, Collège de France; "The adrenal medulla and the formation of pressor amines," Paul Hagen and A. D. Welch, Yale University Medical School; "Biosynthesis of the sterols and steroid hormones, with particular reference to the estrogens," R. D. H. Heard, McGill University School of Medicine; "Biogensis of neutral steroid hormones," Mika Hayano, N. Saba, R. I. Dorfman, and O. Hechter, Worcester Founda-

tion for Experimental Biology; "Enzymatic mechanisms of steroid metabolism. (*a*) Oxidation-reduction reactions of the steroid nucleus. (*b*) Synthesis of steroid glucuronides," K. J. Isselbacher and G. Tomkins, National Institutes of Health.

II. *Hormones and Metabolism*: "Influence of steroids on cerebral metabolism in man," G. S. Gordan, University of California Medical Center; "Studies of aldosterone in relation to water and electrolyte balance," J. A. Luetscher, Jr., Stanford University School of Medicine; "Tissue metabolism and growth," M. E. Krahl, University of Chicago.

III. *Pituitary Hormones*: "Human urinary gonadotrophin," A. Albert, Mayo Clinic; "Hormonal control of melanin pigmentation," A. B. Lerner, University of Oregon Medical School; "Pituitary syndromes in man," R. F. Escamilla, San Francisco.

IV. "Male sex hormone and its role in reproduction," Thaddeus Mann, University of Cambridge, England; "Clinical studies of testicular hormone production," W. O. Maddock, C. A. Paulsen, and R. B. Leach, Wayne University College of Medicine; "The mechanism of progesterone effect on uterine muscle," A. Csapo, Carnegie Institution of Washington.

The 14th **National Organic Chemistry Symposium,** sponsored by the Division of Organic Chemistry of the American Chemical Society, is to be held in Lafayette, Ind., 13–16 June. Purdue University and the Purdue Section of the A.C.S. will act as hosts. The list of participants includes: Frederick L. Hovde, A. H. Blatt, Gilbert Stork, Stanley J. Cristol, Frank H. Westheimer, John D. Roberts, Arthur C. Cope, Nelson J. Leonard, Roger Adams, George S. Hammond, Melvin Calvin, John C. Bailar, Jr., E. J. Corey, William S. Johnson, and Vincent du Vigneaud.

The 16th general assembly of the **International Pharmaceutical Federation,** which is being organized by the Pharmaceutical Society of Great Britain, will be held in London, 19–23 Sept. For information, address the secretary of the federation's organizing committee, 17 Bloomsbury Sq., London, W.C. 1.

The **International Symposium on Modern Network Synthesis, II** forms a part of the celebration program commemorating the 100th anniversary of the Polytechnic Institute of Brooklyn. It will be held 13–15 Apr. at the Engineering Societies Building, 33 W. 39 St., New York, as the fifth in a series organized by the Microwave Research Institute of P.I.B.

The program will consider new advances in the synthesis of passive networks in the frequency and time-domains, including improved methods for designing RLC transducers and advances in the design of sampling filters. New developments in active and nonreciprocal circuits, such as recent unconventional applications of transistors, will also be presented. A round-table discussion is planned on the significance of new network-synthesis techniques to the solution of design problems in industry. Internationally known authorities will participate.

The cooperation of the Professional Group On Circuit Theory of the Institute of Radio Engineers and the cosponsorship of the Office of Naval Research, the Air Force Office of Scientific Research, and the Signal Corps permits this symposium to be held without admission charge or registration fee. The symposium proceedings will be published by October 1955; advance orders should be accompanied by a check for $5 made out to the Treasurer, Symposium Committee. For information, write Polytechnic Institue of Brooklyn, Microwave Research Institute, 55 Johnson Street, Brooklyn 1, N.Y.

The **Electrochemical Society** will hold its 107th meeting at the Sheraton-Gibson Hotel, Cincinnati, Ohio, 1–5 May. Sessions are scheduled on electric insulation; electronics, including luminescence, oxide cathodes, phosphor application, and semiconductors; electrothermics and metallurgy; industrial electrolytics; and theoretical electrochemistry. The program for the technical sessions lists 184 papers. Copies of the program booklet, which includes abstracts, will be available after 1 Apr. from the secretary, Henry B. Linford, Electrochemical Society, Inc., 216 W. 102 St., New York 25.

The 5th meeting of the **Congress of Nobel Prize Winners** will be held on 10–16 July in Lindau im Bodensee, Germany. For information write to the general secretary, Dr. F. K. Hein, Lindau, Germany. This is the second meeting of the prize winners in chemistry, and the program will include the following: Georg V. Hevesy, Stockholm; L. Ruzicka, Zurich; W. M. Stanley, Berkeley, Calif.; Artturi I. Virtanen, Helsinki; Harold C. Urey, Chicago; Richard Kuhn, Heidelberg; Robert Robinson, Oxford; H. Staudinger, Freiberg i. Br.; Hans v. Euler-Chelpin, Stockholm; Werner Heisenberg, Gottingen; Fritz Lipman, Boston. Acceptance by several others is expected.

The annual meeting of the **American Academy for Cerebral Palsy** is to be held in Memphis, Tenn., 10–12 Oct. The schedule will include instructional courses in the various phases of the disease as well as a formal program. The sessions are open to members of the medical and allied professions who are interested in cerebral palsy. Those wishing to attend may obtain an invitation from the secretary-treasurer, Robert A. Knight, 869 Madison Ave., Memphis 3, Tenn. Hotel reservations are to be made directly with Mr. Scott Stewart, Claridge Hotel, Memphis.

The annual summer conference sponsored by the biology department of the **Brookhaven National Laboratory,** Upton, N.Y., will take place 15–17 June. Those planning to attend should notify R. C. King of the laboratory's biology department *by 21 May.* Noncitizens of the United States should indicate nationality.

The program, which will be concerned with mutation, includes the following speakers and topics: S. Benzer, genetic fine structure and its relation to the DNA molecule; A. D. Hershey, chemical organi-

zation of virus genetic material; J. G. Gall, ultrastructure of chromosomes; A. W. Ravin, properties of bacterial transforming systems; G. Bertani, role of phage in bacterial heredity; Barbara McClintock, intranuclear systems controlling gene action and mutation; M. Demerec and Zlata Demerec, factors determining the effectiveness of certain mutagens; H. B. Newcombe, timing of the induced mutation process in *Streptomyces* spores; N. H. Giles, Jr., forward and back mutation at specific loci in *Neurospora*; H. J. Muller, relation between chromosome changes and gene mutation; J. S. Kirby-Smith, effects on the genetic material due to radiations of different linear energy transfer; H. B. Glass, properties of genetic material manifested by changed mutability during different stages of gametogenesis; W. L. Russell, mutational characteristics of specific loci; W. S. Stone, indirect effects of radiation on genetic material; W. K. Baker, oxygen effect and the mutation process; and A. Novick, mutagens and antimutagens. K. G. Stern, R. D. Hotchkiss, W. R. Singleton, A. Srb, A. H. Sparrow, and K. Sax are chairmen. The symposium committee consists of R. C. King, V. W. Woodward, A. H. Sparrow, Marian E. Koshland, and H. J. Curtis.

The location of the 3rd **International Congress of Vitamin E** [*Science* **121**, 159 (4 Feb. 1955)] has been changed from Milan to Venice, and the dates have been specifically designated as 4–7 Sept. Karl E. Mason, professor of anatomy at The University of Rochester School of Medicine and Dentistry, has been appointed American representative to the congress.

Society Elections

Society of Economic Paleontologists and Mineralogists: pres., F. J. Pettijohn, Johns Hopkins University; v. pres., Robert R. Shrock, Massachusetts Institute of Technology; sec.-treas., Samuel P. Ellison, Jr., University of Texas.

Interamerican Society of Psychology: pres., Willard C. Olson; v. pres., Guillermo Davila; sec.-gen., Werner Wolff; treas., Gustave M. Gilbert.

American Statistical Association: pres., Seymour L. Wolfbein, U.S. Bureau of Labor Statistics; pres.-elect., Felix Moore, National Institutes of Health; v. pres., Gladys Palmer, University of Pennsylvania and P. M. Hauser, University of Chicago; sec., A. J. Jaffe, Columbia University.

Mathematical Association of America: pres., W. L. Duren, Jr., Tulane University; 1st v. pres., H. S. M. Coxeter, University of Toronto; 2nd v. pres., G. B. Price, University of Kansas; sec.-treas., H. M. Gehman, University of Buffalo.

Florida Academy of Sciences: pres., Joseph C. Moore, Everglades National Park; pres. elect, H. K. Wallace, University of Florida; sec.-treas., R. A. Edwards, University of Florida.

Society of American Bacteriologists: pres., H. O. Halvorson; v. pres., Charles A. Stuart; sec.-treas., John Hays Bailey.

Institute of Radio Engineers, Inc.: sec., Haraden Pratt; treas., W. R. G. Baker, General Electric Co.; editor, John R. Pierce, Bell Telephone Laboratories.

American Mathematical Society: pres., R. L. Wilder, University of Michigan; v. pres., Emil Artin, Princeton University; sec., E. G. Begle, Yale University.

Western Society of Naturalists: pres., Lyman Benson; v. pres., Albert Tyler, California Institute of Technology; sec., Demorest Davenport, Santa Barbara College, University of California; treas., Ivan Pratt, Oregon State College.

National Society for Medical Research: honorary pres., Anton J. Carlson, University of Chicago; pres., Lester J. Dragstedt, University of Chicago; v. pres., Maurice Visscher, University of Minnesota; sec.-treas., Ralph Gerard, Illinois Neuropsychiatric Institute.

Education

A new examination, **Physical Chemistry Form L,** is featured in the national college testing program of the Examinations Committee of the American Chemical Society's division of Chemical Education. Form L has been assembled from items submitted and criticized by about 60 collaborators. The selection of questions included is based upon pretesting under classroom conditions in more than 30 institutions and upon an analysis of the difficulty and reliability of each question. To obtain more extensive coverage of theoretical concepts, questions dealing specifically with laboratory manipulation have been omitted. This examination covers topics customarily treated in the year's course in physical chemistry. In addition, the General Chemistry Form K has been reprinted.

These two tests are part of the spring testing program sponsored by the Examinations Committee. The program also includes tests in qualitative analysis, quantitative analysis, organic chemistry, and biochemistry. More than 48,000 students in 550 colleges and universities in the United States and several foreign countries were tested under this program last year. Further information and copies of the tests may be obtained from Dr. Theo. A. Ashford, St. Louis University, St. Louis 4, Mo. Limited copies of older examinations are available in addition to the tests featured in the testing program.

In February a branch of **Human Relations Area Files, Inc.,** was opened at **American University,** Washington, D.C. Donald H. Hunt, for 4 yr chief of the social relations section of the Library of Congress, is director. The presidents of seven neighboring universities were invited to participate in an inauguration ceremony for the new center, which is a unit of an inter-university research project that was established

at Yale University in 1949 and which is now sponsored by 16 universities extending from New England to Hawaii.

The organization's objective is to simplify the problem of finding out why human beings behave the way they do. The research cuts across the various branches of the social sciences, and factual data is organized and filed at each of the member universities. A system is used by which entire books are annotated according to subject, reproduced by a new electrical device, and the reproduced pages are then filed according to a numerical filing system. It takes only a moment to pick out a sheaf of 150 notes on a subject.

Yale University will begin next fall a new 2-yr **program in medical sociology** that is designed for Ph.D. candidates in sociology who have completed 2 yr of graduate study. The object of the course is to train students to apply the knowledge and techniques of sociology to the fields of medicine and public health.

A grant of $58,000 from the Commonwealth Fund will support the program itself, and a $9000 grant from the Russell Sage Foundation is to support a study unit in medicine and sociology that will guide the new program. In addition, Yale will provide some tuition scholarships.

An intensive 2-wk course for engineers in industry who have had no experience in nuclear technology will be offered by the University of Michigan this summer. Called **"Nuclear Reactors and Radiations in Industry,"** the course will run 15–26 Aug. The tuition fee of $200 will cover the cost of a complete set of printed course notes.

The Institutum Divi Thomae has announced a special summer seminar in **science and philosophy** to be held from 27 June through 29 July. Morning sessions will be devoted to an intensive series of lectures on adsorption and chromatography by H. G. Cassidy of Yale University, and in the afternoon there will be discussion of problems in the philosophy of science by members of the Albertus Magnus Lyceum. The subjects scheduled are "Logic and methodology in modern science," John T. Bonee; "Foundational physics," William H. Kane; and "Concepts and structure of the specialized sciences," Augustine Wallace. The series is planned primarily for teachers in liberal arts colleges, but is open to others. The cost will be $60, exclusive of living expenses A limited number of tuition scholarships is available. Inquiries should be addressed to the Dean, Institutum Divi Thomae, 1842 Madison Rd., Cincinnati 6, Ohio.

In order to combat the apathetic attitude to religion developed by students as they study science, the Danforth Foundation will sponsor for the third year a seminar workshop on the **Teaching of the Natural Sciences in Relation to Religious Concepts.** The sessions will take place 10–23 July at Pennsylvania State University. College science teachers will consider problems incident to the teaching of the natural sciences in relation to religious concepts. It is felt that the need that teachers concern themselves with religious interpretations of reality and of all human experiences has grown progressively greater, and that this need is present for all faiths and in all disciplines and instructional areas.

William G. Pollard, physicist and executive director of the Oak Ridge Institute for Nuclear Studies and an ordained member of the Christian ministry, again will be one of the seminar leaders and lecturers. His morning lectures and discussions will deal with "Scientific and religious categories of thought" and his evening series with "The Judeo-Christian tradition."

A lecture and discussion on "Educational issues and teaching problems—strategy and tactics" will feature the second part of each morning's session. Harold K. Schilling, professor of physics and dean of the Graduate School of Pennsylvania State University, will deal with these matters and will consider both curricular and extracurricular aspects of teaching.

The director of the seminar will be W. Conrad Fernelius, professor and head of the department of chemistry at Pennsylvania State. The cost of the conference, including meals and lodging, will be $95; Danforth scholarships in this amount will be available for 25 qualified registrants who *apply before 1 May.* A minimum of 3 yr of experience in teaching college courses in the natural sciences or mathematics is required for admission. It is hoped especially that younger staff members will attend. Registrants who are eligible and who meet certain requirements may earn two semester hours of graduate credit. Complete information is available from Dr. W. Conrad Fernelius, Pennsylvania State University, State College, Pa.

The Oak Ridge Institute of Nuclear Studies will present a summer institute for **secondary school science teachers** in Oak Ridge, 1–26 Aug. This program will be sponsored by the National Science Foundation and will be conducted by the ORINS Special Training Division. The institute is intended to provide to a selected group of approximately 48 teachers in the physical sciences an up-to-date review of scientific developments, emphasizing that science should be taught and learned as a whole rather than as a series of highly specialized and unrelated technologies.

Financial assistance up to $215 will be granted to a number of selected participants. *Deadline for return of application blanks is 15 Apr.* Information may be obtained from Ralph T. Overman, Special Training Division, Oak Ridge Institute of Nuclear Studies, P.O. Box 117, Oak Ridge, Tenn.

A department of metallurgical engineering has been established in the **New York University College of Engineering** under the acting chairmanship of John P. Nielsen. This brings to 12 the number of departments in the college. The last new one, the department of meteorology and oceanography, was created in 1937. Facilities of the new department include a completely equipped metallurgical research laboratory

and a smaller undergraduate laboratory. Heretofore, metallurgical work has been carried out in the department of chemical engineering and in the college's research division.

The 1955 **Summer Institute for Teachers of Mathematics** will be held at the University of Oklahoma, 6–17 June. Cost of participation is $15 for 1 wk or $25 for 2 wk. Interested teachers should communicate immediately with F. Lee Hayden, Short Courses and Conferences, University of Oklahoma, Norman.

Available Fellowships and Awards

With the aid of a grant from the Hewlett-Packard Co., Palo Alto, Calif., Stanford University has recently established a graduate fellowship in **medical electronics.** This fellowship is open to a man with a major interest in electronics coupled with an interest in medicine or biology. Such a man will normally have a bachelor's degree in electrical engineering or physics.

The fellowship will carry an annual stipend of $1800 to $2500, depending upon the qualifications of the candidate. Candidates should make application to the Assistantship and Fellowship Committee of the Electrical Engineering Department at Stanford *before 1 Apr.*

Research proposals directed to the Division of Biological and Medical Sciences of the **National Science Foundation** will be received at any time. The proposals on research projects to begin during the latter half of the academic year 1955–56 will be reviewed during October 1955. These proposals should be received by the foundation *before 15 Sept.*

A trust agreement establishing the Ruth Newman Van Horn Foundation has been completed recently by F. R. Newman of Cleveland, Ohio, providing an annual special **fellowship in urology** at Memorial Center for Cancer and Allied Diseases, 444 E. 68 St., New York 21. The fellowship approximates $3600 per year, and appointments will be made by the Memorial Board of Managers on recommendation of the chief of Urology Services.

Grants and Fellowships Awarded

The **John and Mary R. Markle Foundation** has announced that 22 faculty members of medical schools in the United States and Canada have been appointed scholars in medical science, in continuance of a program begun in 1948 to aid doctors planning careers in academic medicine. The foundation has appropriated $660,000 toward support of these men and their research, to be granted over a 5-yr period at the rate of $6000 annually, to each of the 22 medical schools where the men will teach and conduct their investigations. The scholars were selected from 52 candidates nominated by medical school deans.

Medical College of Virginia, Richmond. E. L. Becker. Internal medicine and renal physiology.

University of Pennsylvania. L. W. Bluemle, Jr. Internal medicine.

Washington University, St. Louis, Mo. H. R. Butcher, Jr. General surgery.

Johns Hopkins University. L. E. Cluff. Internal medicine and infectious diseases.

University of Cincinnati. J. J. Cohen. Physiology and internal medicine.

University of Manitoba, Winnipeg, Man. T. W. Fyles. Internal medicine, physiology, and bacteriology.

Laval University, Quebec, Que. P. M. Gagnon. Anatomy.

University of Washington, Seattle. N. B. Groman. Bacteriology, parasitology, virology.

Western Reserve University. J. W. Harris. Laboratory and physical diagnosis; advanced hematology; internal medicine.

Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N.C. A. Hinman. Growth and development: clinical pediatrics.

Columbia University College of Physicians and Surgeons. F. G. Hofmann. Pharmacology, physiology, and histology.

Yale University. E. H. Hon. Obstetrics, gynecology, and gynecologic endocrinology.

University of Saskatchewan, Saskatoon. R. B. Lynn. Surgery; intracardiac surgery.

Duke University. W. S. Lynn, Jr. Clinical medicine and biochemistry.

University of Kansas School of Medicine, Lawrence. C. A. Miller. Pediatrics and microbiology.

University of Utah. G. T. Perkoff. Metabolic diseases, physical diagnosis, and clinical pathology.

University of Wisconsin. G. G. Rowe. Medicine (cardiology) and anatomy.

Marquette University. R. H. Segnitz. Pediatric and general surgery.

Medical College of South Carolina. C. McC. Smythe. Medicine and clinical physiology.

University of Chicago. D. W. Talmage. Immunology and allergy.

Baylor University College of Medicine, Houston, Tex. H. Tivey. Medical statistics; medical physics and isotope techniques.

Emory University. H. L. Williams. Pharmacology and physiology.

Eli Lilly and Co. has announced these research grants.

Brigham Young University. H. S. Broadbent, chemistry. Hydroquinoxalines.

University of British Columbia. J. G. Foulks, pharmacology. Research program in dept. of pharmacology.

University of Chicago. M. E. Krahl, physiology. Renewal grant, 1 yr, research on insulin and related subjects.

State University of New York College of Medicine. J. S. Robb, pharmacology. Effect of drugs—in particular, Paveril Phosphate (Dioxyline Phosphate, Lilly) and Papaverine—on the perfused mammalian heart.

University of Pennsylvania School of Medicine. E. D. DeLamater, dermatology and microbiology. Cytochemical, cytological, and cytogenetic studies on the site of action of the antibiotics and other drugs in bacteria and other cells.

North Texas State College. J. J. Spurlock, chemistry. Barbituric acids.

University of Utah College of Medicine. L. S. Goodman, pharmacology. Anticonvulsant drugs.

Veterans Administration Hospital, New Orlenas. P. Pizzolato. *Malleomyces pseudomallei.*

Western Research University School of Medicine. (i) A. C. Barnes and R. A. Hingson. Evaluation of oxytocics with relation to effectiveness and incidence of side-effects, especially changes in blood pressure. (ii) W. F. H. M. Mommaerts, biochemistry. Insulin. (iii) H. G. Wood, biochemistry. Biosynthesis of nucleotides.

University of California School of Medicine. I. L. Chaikoff. Diabetes and insulin.

Cerebral Palsy Clinic, Dallas. W. H. Bradford. Drugs in cerebral palsy.

University of Chicago. D. J. Ingle, biological sciences. Mechanisms of hormone action on growth and metabolism.

Louisiana State University School of Medicine. G. J. Buddingh, microbiology. Research in the dept. of microbiology.

University of Michigan. Fellowship for dept. of chemistry.

Mount Sinai Hospital, New York. D. A. Dreiling, chemistry. To assist in publishing a monograph on the external pancreatic secretion of man.

National Science Teachers Association, Washington, D.C. To support development of the Future Scientists of America Foundation.

University of Oklahoma School of Medicine and University Hospitals. T. H. Haight. Problems of antibiotic therapy and research in infectious diseases.

Hospital of the University of Pennsylvania. J. E. Eckenhoff, anesthesiology. Work in the dept. of anesthesiology.

Purdue University. C. L. Porter, biological sciences. New sources of antibiotics.

Rockland State Hospital, Orangeburg, N.Y. N. S. Kline. Adrenocortical response to insulin.

University of Washington. R. H. Williams. Insulin and diabetes.

January and February research allocations by the **Damon Runyon Memorial Fund** are as follows:

Sloan-Kettering Institute, New York. Cancer research bed, $1185.

Medical College of Virginia. J. H. Salley. Oral neoplasia, $7000.

Vincent Memorial Hospital, Boston. J. B. Graham. Cancer immunity, $15,000.

Tufts College Medical School. W. H. Fishman, $8000.

State University of New York College of Medicine. I. Koprowska, $9000.

George Washington University, Washington, D.C. I. Cornman, $5500.

Wills Eye Hospital, Philadelphia. A. W. Vogel. Renewal for experimental fundal tumors of the eye, $6500.

A. P. Cooke Memorial Cancer Laboratory, Florida Southern College, Lakeland. B. Sokoloff, $2800.

Immaculata College, Immaculata, Pa. S.M. St. Agatha Suter. Supplementary grant, $540.

Institut Jules Bordet, Brussels, Belgium. H. J. Tagnon. Cancer research, $9700.

Connemaugh Valley Memorial Hospital, Johnstown, Pa. To expand its cancer program with particular reference to lung cancer, $7500.

Good Samaritan Hospital, Palm Beach, Fla. Cancer research beds, $5000.

St. Mary's Hospital, Palm Beach, Fla. Cancer research beds, $5000.

Columbia University, College of Physicians and Surgeons. G. C. Godman, $6500.

University of Rochester. S. Tarbell, $7500.

Washington University. C. E. Rubin, $8500.

University of Wisconsin. J. M. Price. Amino acid metabolism in patients with neoplastic cachexia, $5800.

National Academy of Sciences, National Research Council, Washington, D.C. To support U.S.A. National Committee on the International Union Against Cancer, $100.

Fellowships

O. Miro-Quesada, Sloan-Kettering Institute, $5400.

W. B. Summers, Veterans Hospital and Research Laboratory, Denver, Colo., $4800.

B. Bjorklund, Columbia University College of Physicians and Surgeons, $3000.

E. J. Mason, Western Reserve University, Cleveland.

P. S. Moorhead, University of Texas, Galveston.

The **National Council to Combat Blindness** approved the following grants-in-aid and fellowship awards for 1954–55:

Retina Foundation, Boston. E. A. Balazs. Synthesis of hyaluronic acid in the vitreous body of embryos and young animals, $4000.

University Hospitals, State University of Iowa. H. M. Burian. Temporal relationships of electric responses and chronaxie of human retina (continuation), $2000.

Ohio State University College of Veterinary Medicine. C. R. Cole. Ocular taxoplasmosis in domestic animals, $2000.

University of Buffalo Medical School. A. N. Dellaporta. Pathological studies on experimental retinal detachment, $2000.

Ohio State University, Department of Optometry, V. J. Ellerbrock. Compilation of a volume on research in subnormal vision, including evaluation of all aids, $960.

Presbyterian Hospital Medical Center, Institute of Ophthalmology, New York. W. G. Everett. Mensuration of the human eye by x-ray and the relationship of measurements to pathological states (renewal), $250.

New York Eye and Ear Infirmary. B. Goldberg, R. Levene, G. Kara. Possible role of hyperestrinism in the pathogenesis of retrolental fibroplasia (renewal), $1000.

Wills Eye Hospital, Philadelphia. H. Green, I. H. Leopold. Lens metabolism and cataract formation (renewal), $3000.

New York Eye and Ear Infirmary. J. H. Jacobson. Electroretinography in retinal diseases, $2400.

University of California Medical Center, San Francisco. S. J. Kimura. Study of kerstitis sicca and Sjogren's syndrome, $1200.

University Hospitals, State University of Iowa. P. J. Leinfelder. Effect of change in *p*H in the equeous humor on metabolism of the lens and cornea, $1500.

Government Hospital, Haifa, Israel. I. C. Michaelson. New vessel growth in the eye, particularly in the retina and cornea (renewal), $2800.

Kumamoto University Medical School, Japan. Y. Mitsui. Cultivation of trachoma virus in cultivated human conjunctival epithelium by roller tube, $2650.

Ziya Gun Institute for Research in Trachoma, University of Istanbul, Turkey. F. N. Sezer. Cultivation of trachoma virus (renewal), $2000.

Institute of Ophthalmology, Columbia University. G. K. Smelzer. Investigation of experimentally produced exophthalmos, $1200.

Royal College of Surgeons and the Royal Eye Hospital, London. A. Sorsby. Biochemistry of hereditary retinal lesions, $3000.

Manhatten Eye, Ear and Throat Hospital, New York. C. C. Teng. Optic nerve study, $2500.

College of Physicians and Surgeons, Columbia University. L. von Sallman. Clinical and experimental studies in the distribution of P^{32} in tumors of the eye, $1000.

Albert Einstein Medical Center, Philadelphia. C. Weiss. Exhibit of laboratory aids in the diagnosis of infections of the eye (bacteriologic, serologic, mycologic, virologic, and parasitologic procedures) at the International Congress of Clinical Pathologists, Washington, D.C., 6–11 Sept. 1954, $200.

Eye and Ear Hospital, University of Pittsburgh Medical Center. J. J. Wolken. Photoreceptor structure, $3000.

The **U.S. Atomic Energy Commission** has announced the award of 27 unclassified physical research contracts.

Kentucky Research Foundation. B. D. Kern. Study of nuclear energy levels, $28,705.

University of Utah. I. B. Cutler. Recrystallization and sintering of oxides, $7400.

University of Virginia. A. T. Gwathmey. The growth and chemical properties of nearly perfect crystals, $14,424.

California Institute of Technology. J. W. DuMond. Precision nuclear spectroscopy, $84,428.

California Institute of Technology. H. Brown. Study of the fundamental geochemistry of critical materials and the development of economic processes for their isolation, $138,240.

University of California. C. S. Garner. Isotopic exchange reactions, $19,599.

University of Illinois. P. A. Beck. Annealing of cold worked metals, $21,100.

Johns Hopkins University. G. N. Deike. Absorption and fluorescent spectra of solid uranium compounds, $37,100.

University of Michigan. W. C. Parkinson. 42-in. cyclotron program, $83,120.

University of Michigan. H. R. Crane. Nuclear research with 300 Mev synchrotron, $79,180.

University of New Hampshire. H. M. Haendler. Infrared spectroscopy of inorganic fluorides, $11,010.

University of Tennessee. H. A. Smith. Catalytic reactions involving deuterium and vapor pressure studies of H_2O-D_2O mixtures, $1988.

Vanderbilt University. E. A. Jones. Raman spectra of some inorganic fluorine compounds, $6983.

University of Illinois. T. A. Read. Diffusionless phase changes in nonferrous metals and alloys, $29,222.

University of Illinois. E. A. Alperovitch. Occurrence of technetium in nature, $18,117.

Kansas State College. R. E. Hein. Labeled chemical species produced by neutron irradiation of phosphorus trichloride and related compounds, $5980.

University of California. R. L. Scott. Research on fluorocarbons solutions, $13,000.

Columbia University. C. H. Townes. Microwave spectroscopy, $21,000.

University of Connecticut. R. Ward. Tracer element distribution between a solid and a melt, $7000.

Purdue Research Foundation. K. Lark-Horovitz. Linear electron accelerator for nuclear physics, $4000.

Pennsylvania State University. W. W. Miller. Chemical reactions induced in condensed systems by beta decay, $7995.

Purdue Research Foundation. R. M. Whaley. Basic research

clear reactions with fast alpha particles, neutrons, and deuterons and a study of nuclear structure, $50,000.

Purdue Research Foundation. R. M. Whaley. Basic research using high-energy electrons and x-rays produced by a 300 Mev synchrotron, $94,240.

University of Rochester. E. O. Wiig. Radiochemistry, $14,545.

University of Tennessee. P. B. Stockdale. Investigation of the Chattanooga black shale of Tennessee as a source of uranium, $22,895.

Vanderbilt University. M. D. Peterson. Radiation stability and inorganic radiochemistry, $27,034.

Yale University. W. W. Watson. Isotope separation by thermal diffusion and nuclear studies with separated isotopes, $11,000.

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

New Hampshire Academy of Science to Paul R. Doe, Spaulding High School, Rochester. Preparation of 4,4-disubstituted piperidines by means of the Guareschi reaction and reduction with lithium aluminum hydride.

Indiana Academy of Science to John S. Karling, Purdue University. The fungus genus *Synchytrium* in Indiana, Illinois, and eastern Wisconsin.

Ohio Academy of Science to Committee on "Ohio Flora."

Ohio Academy of Science to Harold Gray Multer, Ohio State University. Geology of Wayne County, Ohio.

The **National Foundation for Infantile Paralysis** has announced the following grants to 12 regional respirator centers. A 13th center, newly opened in New York, already has received its grant for the fiscal year.

Mary MacArthur Memorial Respirator Unit, Wellesley Hills, Mass., $62,956.

Poliomeyitis Respiratory Center, University of Illinois, Research and Educational Hospitals, Chicago, $83,664.

Jack Martin Polio Respirator Center of Mt. Sinai Hospital, New York, $66,296.

Poliomyelitis Respiratory Center, Fairmount Hospital, San Leandro, Calif., $67,151.

Respiratory Center, University of Buffalo Chronic Disease Research Institute, Buffalo, N.Y., $60,205.

Southwestern Poliomyelitis Respiratory Center, Houston, Tex., $206,332.

Poliomyelitis Respiratory Center, Vanderbilt Hospital, Nashville, Tenn., $21,634.

Poliomyelitis Respiratory Center, Creighton Memorial-St. Joseph's Hospital, Omaha, Neb., $30,429.

Northwest Poliomyelitis Respiratory Center, King County Hospital (Harborview), Seattle, Wash., $25,395.

University of Michigan Poliomyelitis Respiratory Center, Ann Arbor, $36,416.

Rancho Los Amigos Respiratory Center for Poliomyelitis, Hondo, Calif., $77,373.

In the Laboratories

ElectroData Corp., an affiliate of Consolidated Engineering Corp., has announced plans for the construction of a new $750,000, 40,000-ft^2 plant in Pasadena, Calif., that is expected to be completed by August. An unusual feature of the new facility will be a demonstration computing center that is to be housed within glass walls and visible from the main lobby area, making it possible for visitors and potential users of the company's Datatron to observe a complete high-speed electronic data-processing system in operation.

General Electric has inaugurated a four-way communication system for the rapid processing of engineering and research problems on two electronic calculators. Linked in the system are G.E. plants in Evendale, Ohio, where the computing center of the Aircraft Gas Turbine Division is using an IBM 701 on three shifts daily; the Medium Steam Turbine, Generator and Gear Department at Lynn, Mass., and the Large Steam Turbine-Generator Department at Schenectady, N.Y. Fourth point in the network is International Business Machines' Technical Computing Bureau in New York where G.E. is renting a second 701 for a full 8-hr shift daily. The link between the computing centers in this system is provided by I.B.M.'s recently announced Electronic Data Transceiver, a device that duplicates sets of punched cards at remote points by means of telephone, telegraph, or radio circuits. The transceiver arrangement augments a network of telegraphic equipment that G.E. has been using to deliver its problems and answers from turbine departments at Schenectady and Lynn to the computing facility in Evendale. The introduction of the transceiver into this type of operation will increase speed and at the same time will increase reliability in transmission. When telephone circuits are used, as will be the case in the early stages of the present hookup, cards are reproduced from point to point at the rate of 11 fully punched cards a minute.

W. A. Taylor and Co., Baltimore manufacturer of colorimetric control equipment, is observing its 25th anniversary of operation in 1955. The group of Taylor colorimetric comparators now includes instruments for determining *p*H, chlorine, bromine, and phosphate as well as complete sets for analysis of boiler, municipal, industrial, and swimming-pool water and for control of chemical processes. When the company first began business, only two types of comparators were made, one for general *p*H control and the other for chlorine control. Principals in the company are W. A. Taylor and G. E. Miller. F. R. McCrumb is in charge of development work and J. A. Lambrecht is serving as general manager.

Completion of the **Westinghouse Electric Corp.'s** 5-yr, $32-millon expansion program at its Steam Division, South Philadelphia, Pa., has more than doubled the division's productive capacity for steam turbines and associated equipment. In addition to the division's expanded manufacturing and testing facilities, a new $6-million steam- and gas-turbine research and development laboratory has been completed. The entire expansion program involved reoccupancy, under lease agreement, of the Navy-owned Merchant Marine plant adjoining the South Philadelphia works, extensions to existing buildings, and extensive purchases of new machine tools as well as the new development laboratory.

The development laboratory has been functionally designed so that it divides into several individual laboratories and special facilities. It consists of eight principal components: machinery test hall for testing steam- and gas-turbine plants and components; closed-circuit wind tunnel powered by a 9000-hp steam turbine for axial-flow compressor development; aerodynamics laboratory for investigating turbine and compressor blading and other special air- and steam-flow

problems; combustion laboratory for gas-turbine combustion and corrosion study; heat exchange and hydraulics laboratory; mechanical laboratory for vibration, control, mechanical, and lubrication studies; machine, woodworking, fabricating, and model shop; high-pressure and high-temperature boiler, supply line, and reheater. A key part of the new laboratory is the instrument room, which contains more than $300,000 worth of indicating, recording, and calibrating instruments.

Stauffer Chemical Co., New York, has completed a modern insecticide and fungicide blending plant at Lubbock, Tex. To assure rapid delivery of insecticide and fungicide formulations as required by local crop and pest conditions, the Lubbock plant now replaces Stauffer warehouse facilities established 3 yr ago in the same area.

The selection of a plant site near Antioch, Calif., for the manufacture of tetraethyl lead—antiknock additive for gasoline—and Freon refrigerants, has been announced by the **Du Pont Co.,** Wilmington, Del.

Instruments and Materials

Surface tension of liquids over a wide temperature range can be measured with a new Cassel type **surface tensiometer.** Minimum sample requirement is 0.02 ml. The instrument measures the maximum pressure attainable inside a small bubble that is formed over an orifice in such a manner that corrections for hydrostatic head are negligible. The components of the instrument are the orifice, a piston for applying gas pressure inside the bubble, and a manometer. The sample and orifice are situated inside a thermal jacket near a thermometer. Different sizes of orifices are available. (National Instrument Laboratories, Inc., Dept. Sc., 6108 Rhode Island Ave., Riverdale, Md.)

The Dyson **interferometer microscope,** which is manufactured by Cooke Troughton and Simms, Ltd., has been offered for general sale. It is reported that this instrument is especially useful as a quantitative tool for the measurement of dry mass, that it provides a continuously variable system of phase-contrast observation, that it provides either a color- or an intensity-contrast image, and that it eliminates the halo typical of conventional phase-contrast microscopes. (R. Y. Ferner Co., Inc., Dept. Sc., 110 Pleasant St., Malden 48, Mass.)

A new brochure describing the MF **Millipore filter** and its uses, including references to the literature, has been released. This membranous filter, which is made of cellulose-based chemicals, is available in sheet form. The material contains approximately 80 percent voids arranged in a uniform cell structure of about 50 million pores per square centimeter. It is about 150 μ thick and is available in two types, hydrosol assay with a pore size of 0.45 μ, and aerosol assay with a pore size of 0.8 μ. (Millipore Filter Corp., Dept. Sc., Watertown 72, Mass.)

Machlett has announced a new 45,000 rev/min **homogenizer,** the VirTis 45, that is useful for both micro and macro work. The instrument handles volumes from 0.2 to 200 ml through the use of four fluted homogenizing flasks. An aerosol free assembly that prevents aerosols from escaping and protects the substance being homogenized from outside impurities fits the top of the flask. The design of the top drive assembly is intended to eliminate heat formation and leakage. Speed of the 1/5-hp motor can be varied from 100 to 45,000 rev/min by means of a built-in variable transformer. (E. Machlett and Son, Dept. Sc., 220 E. 23 St., New York 10.)

New Journals Received

Antibiotic Medicine, vol. 1, No. 2, Feb. 1955, Journal of clinical studies and practice of antibiotic therapy. Henry Welch, Ed. Md Publications, 30 East 60th St., New York 22. $15 per year.

The ASB Bulletin, vol. 1, No. 3, Sept. 1954. Victor A. Greulach, Ed. Association of Southeastern Biologists, Chapel Hill, N.C. (Order from J. Paul Reynolds, Dept. of Zoology, Florida State University, Tallahassee). Quarterly. $2 per year.

Astronautics, vol. 1, No. 1, Fall 1954. Martin Caidin, Ed. American Astronautical Society, 516 Fifth Ave., New York 36. Quarterly. $6 per year; $1.50 per issue.

Bulletin of the International Institute of Social History, No. 1, 1954. (In English.) E. J. Brill, Oude Rijn 33a, Leiden, Netherlands. Triannually. About $2 per year.

The Bulletin of the Yamaguchi Medical School, vol. 1, No. 1, Feb. 1953. (In English, French, and German.) Yamaguchi Medical School, Ube, Yamaguchi, Japan. One vol. of 3 or 4 issues will be published yearly. Subscriptions by exchange.

Cormil Inventor, vol. 1, No. 10, Aug. 1954. The magazine by inventors for inventors. Cormil Creators Club, P.O. Box 2052, Austin 11, Texas. Monthly. $10 per year (includes club services).

Disease-a-Month, 1st issue, Oct. 1954. Mark Aisner, Ed. Year Book Publishers, 200 E. Illinois St., Chicago 11, Ill. Monthly. $9 per year.

The Egyptian Economic & Political Review, vol. 1, No. 2, Oct. 1954. Commercial & Industrial Research Organization, 26 A Sherif Pasha St., Cairo, Egypt. Monthly. P.T. 10 per issue.

Experimenta, vol. 1, No. 1, June 1954. Abelardo P. Piovano, Ed. Departamento de Consulta y Experimentación Regional, Universidad Nacional de Cuyo, Mendoza, Argentina.

Indian Journal of Fisheries, vol. 1, Nos. 1 & 2, May 1954. N. K. Panikkar, Ed. Ministry of Food and Agriculture, Government of India (Order from Edi-

tor, Central Marine Fisheries, Research Station, Mandapam Camp P.O., S.I.Rly., India. R.7 A.8 (May issue).

Información Técnica, vol. 1, No. 2, June 1954. División de Investigación, Ministerio de Agricultura, Bogotá, Colombia.

Jikeikai Medical Journal, vol. 1, No. 1, Jan. 1954. (In English.) Tokyo Jikeika School of Medicine (Order from T. Nakao, Pharmacological Institute, Tokyo Jikei-kai School of Medicine, Minato-ku, Tokyo, Japan). One vol. of 3 or 4 issues will be published yearly. Subscriptions by exchange.

Journal of the Geological Society of Australia, vol. 1 for 1953 (issued June, 1954). M. F. Glaessner, Ed. The Society, Adelaide, South Australia (Order from O. A. Jones, Dept. of Geology, University of Queensland, Brisbane). £2 2s.

Journal für Hirnforschung, vol. 1, Nos. 1/2, 1954. Organ des Instituts für Hirnforschung und Allgemeine Biologie in Neustadt (Schwarzwald). Successor to *Journal für Psychologie und Neurologie.* Cecile and Oskar Vogt, Eds. Akademie-Verlag, Berlin W 8, Germany. Irregular. DM. 12 per issue; DM. 72 per vol. (6 issues).

Kumamoto Pharmaceutical Bulletin, No. 1, Feb. 1954. (In English.) Tetsuji Munesada, Ed. Pharmaceutical Faculty, University of Kumamoto, Ohemachi, Kumamoto, Japan.

Polish Technical Abstracts, No. 1, 1954. (In English and Russian.) Centralny Instytut Dokumentacji Naukowo-Technicznej, Warsaw, Quarterly.

Publicaciones del Departamento de Cristalografía Y Mineralogía, vol. 1, No. 1, Oct. 1953. Universidad de Barcelona, Barcelona, Spain.

Yonago Acta Medica, vol. 1, No. 1, July 1954. (In English, French, and German). Atsushi Takagi, Ed. Tottori University School of Medicine, 86 Nishimachi, Yonago, Tottori-Ken, Japan. Irregular.

Miscellaneous

Which Fate? a 20-min sound and color film produced by the National Society for Medical Research, is now available. The film contrasts the fate of dogs destroyed in public pounds with the fate of those dogs withheld from destruction and sent to scientific laboratories for use in medical research and teaching.

The movie is a straightforward presentation of **medical science's need for experimental animals.** Prints may be purchased for $205 each from the National Society for Medical Research, 208 North Wells St., Chicago 6, Ill.

The Smithsonian Institution has just received more than 1000 specimens of **Liberian fishes,** chiefly from salt and brackish water, that were obtained over a 2-yr period by George C. Miller of the Fish and Wildlife Service of the Department of the Interior. The collection contains many species and varieties hitherto not represented in the national collections, but its particular interest is in the differences it shows between the sea creatures of the eastern and western Atlantic. Superficially they may be quite similar; when studied, however, they are found to represent quite different types.

Copies of the report on the **Conference on the Role of Women's Colleges in the Physical Sciences** that was held at Bryn Mawr College last June are now available from the Department of Physics, Bryn Mawr College, Bryn Mawr, Pa.

The **American Medical Association** has announced that it is discontinuing its "seal of acceptance" that makers of drugs, foods, cosmetics, and other products have used in advertising. The seal was in the form of the statement: "Accepted for advertising in the publications of the American Medical Association."

Management Science, a new quarterly magazine concerned with scientific research of management problems, features in its first issue, that for October, surveys of recent research on inventory control and mathematical methods in production control; an explanatory article on linear programing; and scientific papers on production and transportation scheduling. The publication of *Management Science* is the result of effort during the past year on the part of a nationwide group of management analysts, social scientists, mathematicians, and engineers with common interests in the scientific analysis of management problems. A new professional society, the Institute of Management Sciences, was established in December 1953 to lay the groundwork for developing and coordinating the diverse technical and scientific fields and to publish a journal of scientific research on management.

C. West Churchman of Case Institute of Technology is managing editor of the journal, with Alan O. Mann, SKF Industries, Philadelphia, as business manager. Members of the editorial board and their primary fields of management science interest are George Brown, International Telemetering Corp., Los Angeles (statistics and electronics); M. L. Hurni, General Electric Co., New York (business); Daniel Katz, University of Michigan (psychology); A. Charnes, Carnegie Institute of Technology (mathematics); and J. Marschak, University of Chicago (economics).

Information concerning the journal may be obtained from Alan O. Mann, SKF Industries, Philadelphia 32, Pa. General information on the Institute of Management Sciences may be had from George Kozmetsky, secretary, care of Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif., or Alex Orden, associate secretary, care of Burroughs Corp. Research Center, Paoli, Pa.

Erratum: In the article "On the protection against alloxan diabetes by hexoses" by G. Bhattacharya in the 19 Nov. 1954 issue, page 842, the heading for the second column of Table 2 should read "Oxygen uptake (μlit O_2/30 min)."