only to have a look at the way the country's money is spent to realize that this is mere lip service. Nobody can really uphold that a cut of, say, 1 percent in our defense expenditure would be of any great consequence—while these £15m per year would *double* the sums available to science and technology in the universities and the Department of Scientific and Industrial Research. Such a switch would increase our defense potential, as well as our chances for industrial survival, infinitely more than the damage due to the small reduction in the number of conventional weapons, which anyway will most probably be obsolete before they are ready.

These figures show clearly that the fact that this country must depend on its scientific and technologic manpower has not yet sunk in. This may be because the general public—certainly in this country—is not really science-minded. How often do we see people snobbishly dismissing all scientists and engineers as "narrow specialists," even though they themselves do not know the difference between science and gadgeteering. They do not realize that it is *their* narrow outlook which is an essential cause of our deficiences.

To sum up: It seems that the West has not yet learned to think in terms of the real values of this scientific age. The most important of these realities is the quality and quantity of scientific and technologic manpower. The Americans seem to be too blinded by their preoccupation with spy hunting to see that they are doing incalculable harm to their own scientists and that they are in grave danger of being overtaken by the Russians by quite legitimate means.

We in this country are fortunately free from the spy hysteria, but our share in the weapons project is anyway no more than that of a junior partner. On the other hand, the peaceful applications of atomic energy are bound to become essential for our future and here again the scientific manpower question is paramount. The facts are there for everyone who wants to see, but a deep paralysis seems to prevent us from doing what is necessary.

We are used to hearing Western papers loudly expressing contempt of the Communist countries, but this is neither sufficient nor even essential. We must *do better* than they, otherwise future historians may well be tempted to pass the famous verdict also on our generation: "Deus quos vult perdere, dementat prius."

News and Notes

International Weights and Measures, 1954

Continuing a series begun in 1889, the Tenth General Conference on Weights and Measures was held in Paris and Sèvres, France, 5 to 14 Oct. Of the 35 countries that belong to the international organization, 32 appointed delegates or observers, the total number being more than 70. As representatives of the United States, the Department of State appointed Allen V. Astin, director of the National Bureau of Standards, and E. C. Crittenden, consultant to the NBS.

These general conferences, which are convened at 61-yr intervals, exercise general authority over a permanent international committee of 18 members, which meets biennially. The committee is responsible for directing all projects in metrology that the member-countries decide to undertake jointly, including the preservation of the international metric standards and other activities of the International Bureau of Weights and Measures. The Bureau is housed at Sèvres in the Pavillon de Breteuil, an ancient residence designated as international territory. The International Bureau has a staff of about 16 persons. Besides providing a depository for international standards, it carries on important researches on many metrological problems, calibrates standards for other laboratories, both national and privately owned, and serves as a permanent secretariat for the international committee and the General Conferences on Weights and Measures.

Problems of measurement have become so diverse that no single small group of men can deal with them. Consequently to assist the International Committee on Weights and Measures in special fields, four advisory committees have been set up, each consisting of representatives of seven or eight national laboratories and some experts selected individually from smaller countries. The present advisory committees cover measurements and standards in electricity, in photometry, and in thermometry and the project for a new definition of the meter.

Many countries that belong to the international weights and measures organization do not have representatives in the permanent committees. Consequently one of the purposes served by each general conference is to inform member-countries of the progress made during the preceding 6-yr interval. The conferences are called upon to make decisions only on matters of principle or on changes of policy or practice.

Current work of the International Bureau was reported to the conference by Charles Volet, director of that Bureau, and various members of the Bureau's staff. It included comparisons of electric and photometric standards from all the larger countries, showing a very satisfactory degree of uniformity in the new electric units as adopted in 1948 and good progress toward uniformity of photometric measurements on all types of lamps. Comparisons of end-gages calibrated at various national laboratories by means of light-waves indicated that such calibrations are now sufficiently precise to meet the ordinary needs of in-

dustry but that the measurements would not be fully satisfactory for the establishment of basic standards, because the results obtained in different countries might differ by as much as 0.05 μ on a 100-mm gage, that is, 5 parts in 10 million. Further research is needed to determine the causes of these discrepancies.

In many physical measurements the force of gravity at the particular location must be known or assumed. The International Bureau therefore has in progress a determination of that force at Sèvres. Preliminary results reported to the conference indicate that the "Potsdam" basis for values of gravity, which has been generally used for half a century, is too large by 24 parts in a million. This agrees rather closely with determinations made at the National Bureau of Standards and the British National Physical Laboratory. However, additional determinations are under way in other laboratories. Consequently the international committee, following a recommendation of its Advisory Committee on Thermometry, agreed that values of the force of gravity involved in the determination of atmospheric pressures should conform to the classical Potsdam system until the international committee approves a change.

The International Bureau also reported the results of a recalibration of national kilogram standards completed since the Ninth General Conference in 1948. Of 24 standards originally certified in 1889, two showed no perceptible change, 14 had slight apparent increases in mass, and 8 showed small losses, the largest loss being 0.06 mg, or 6 parts in 100 million. Kilogram No. 20, which belongs to the United States, appeared to have increased by 2 parts in 100 million between 1889 and 1948; but if this was a real change, nine-tenths of it occurred before 1937, when the last previous comparison was made. The weighings of 1889 were not sufficiently precise to make it certain that any change has occurred in any of the national standards except one.

An intercomparison of national and international meter bars is scheduled to begin in 1955, and on this account special attention was directed to the possibility of increasing the precision of observations by ruling new lines to replace the original ones on the bars distributed in 1889. It is claimed that the lines can now be made so much better that the uncertainty of calibrations can be reduced by a factor of 10. Additional lines can be also be ruled to give a length of 1 m when the bar is at 20° instead of 0°C. Some countries have expressed a desire to have their meter standards reengraved to gain these advantages.

On the project to redefine the meter unit by basing it on wavelengths of light in a spectral line given by some single isotope, definite progress was reported. The Advisory Committee on Definition of the Meter, at a meeting in Sept. 1953, recommended that when a new definition is adopted it shall be expressed in terms of a wavelength in vacuum, derived from the presently accepted wavelength of the red cadmium line in air under standard conditions. The conversion from air to vacuum wavelengths is to be made in accordance with a formula for the dispersion of normal air adopted in 1952 by a Commission on Spectroscopy recognized as the best authority in this field. The international committee approved this procedure for developing the new definition, but the actual adoption of a definition was not possible because four different isotopes have been proposed as sources of light suitable for this purpose. Several years ago W. F. Meggers of the National Bureau of Standards proposed that the wavelength of the green line of mercury of mass number 198 be adopted. Workers at the German Physikalisch-Technische Bundesanstalt have advocated the use of a line in the spectrum of krypton 86 and, this year, have added xenon 136 as another possibility. Reports from the Russian Institute of Metrology have favored the retention of cadmium, using, however, cadmium 114 instead of the natural metal. The British National Physical Laboratory and the Canadian National Research Council Laboratory have studied some of these possibilities, but more information concerning the spectral lines of the isotopes, the types of lamps to be used, and other operating conditions is needed to give a basis for choice of a particular line. Consequently the conference, while recognizing the progress made, urged the laboratories to expedite their work on monochromatic radiations in order that the Eleventh General Conference may reach a decision on the problem.

The question of defining a unit of time more constant in value than the mean solar second as now determined by current astronomical observations was brought up by a resolution adopted by the International Union of Astronomy in 1952. The astronomers point out that the length of the mean solar day has varied by as much as 1 part in 10 million during the period from 1870 to 1950, and there is no assurance that even larger variations will not occur. Consequently the union recommended that for highly precise data (such as the frequencies assigned for some radio signals) the *second* be taken as a fraction of a single specified year. The formal resolution, however, referred to a "sidereal" year when it should have said "tropical" year. Consequently the general conference did not consider it advisable to act on the recommendation. Instead it authorized the international committee to decide the matter without waiting until another general conference convenes. The second will presumably be defined as "the fraction 1/31,556,925.975 of the tropical year 1900.0."

In accordance with a recommendation of the Advisory Committee on Thermometry, the conference adopted a new definition of the thermodynamic, or absolute, scale of temperature by assigning the value of 273.16°K for the triple point of water as the sole fixed fundamental point of the scale. This method of defining the scale has been advocated in recent years by W. F. Giauque of the University of California but was originally suggested a century ago by Lord Kelvin. Furthermore, any changes in assigned temperatures resulting from the change in definition of the scale are not likely to be greater than the uncertainty

of present measures. The name *Kelvin* is therefore retained.

In response to a request from the International Organization for Standardization for the establishment of a standard value for normal atmospheric pressure, the conference announced that the value adopted by the Ninth General Conference in the definition of the International Temperature Scale should be accepted for all purposes. It is 1,013,250 dynes/cm^2, or, in the mks system, 101,325 newtons/m^2.

A proposal for the establishment of a system of practical units for use by all countries submitted by the French Government in 1948 gave rise to such diverse comments that the international committee was unable to prepare a generally acceptable revision. By a divided vote on some details, the conference decided that as a basis for such a system the following units should be adopted: for length, the *meter*; for mass, the *kilogram*; for time, the *second*; for electric current, the *ampere*; for thermodynamic temperature, the *degree Kelvin*; for luminous intensity, the *candela*.

With regard to finances it was reported that, following a request made by the Ninth General Conference, 21 countries have made special gifts totaling about 79,000 gold francs ($25,800) for the improvement of the plant and equipment of the International Bureau. Although the United States Government has made no special cash gift in response to this request, it may be recalled that private American agencies have in the past given material assistance to the International Bureau. In particular the Rockefeller Foundation gave funds for the enlargement of the Bureau laboratory to provide room for work on electric standards.

By action of the international committee, valid because delegates of no country objected when the decision was reported to the conference, the basic budget (contributions of countries that adhered to the Convention of the Meter before 1921) was increased from 175,000 gold francs to 300,000. On a corresponding scale eight countries that have adhered more recently will pay 55,000 gold francs, making the total of dues for the support of the International Bureau 355,000 gold francs ($116,000) per year.

As a final act the general conference elected members of the international committee to bring the membership up to the total of 18, as provided by the Convention of the Meter. Five members elected in 1948 or earlier remain. These are from Argentina, Italy, Roumania, Sweden, and Yugoslavia. Eight members elected provisionally by the international committee between 1948 and 1954 were confirmed. These members are from Canada, Czechoslovakia, France, Germany, Japan, the Netherlands, Spain, and the U.S.S.R. The remaining five vacancies were filled by electing members from Australia, Austria, Finland, the United Kingdom of Great Britain and Northern Ireland, and the United States of America. Allen V. Astin is the new American member succeeding E. C. Crittenden, who resigned at the close of the conference. At a meeting after the conference, the international committee elected as its president A. Danjon, director of the Observatory of Paris; as vice-president F. Vieweg, president of the German Physikalisch-Technische Bundesanstalt; as secretary, G. Cassinis, rector of the Polytechnic School of Milan, Italy.

E. C. CRITTENDEN

National Bureau of Standards, Washington, 25, D.C.

Science News

The following editorial on the loyalty case of **John F. Peters,** professor of medicine at Yale University, appeared in the 29 Nov. issue of the *Washington Post and Times Herald.*

In consenting recently to review the case of Dr. John F. Peters, the Supreme Court accepted an opportunity to come back to the difficult issues which it left unresolved in the *Bailey* case two years ago. The issue in simple terms is whether the Government, by reliance on unsworn statements by anonymous informants, can declare employes in nonsensitive positions to be disloyal and disqualify them from Government service.

Dorothy Bailey was dismissed from the Government in 1949 under such circumstances. The Loyalty Review Board, after a hearing in which all the testimony was favorable to her, and in admitted reliance on informers whose identity was unknown to the board as well as to Miss Bailey, recommended her dismissal because of doubts as to her loyalty. A Federal District Court denied her plea that this procedure violated her constitutional rights and the intent of the loyalty order. The Court of Appeals affirmed by a division of 2 to 1; the Supreme Court divided 4 to 4 (Mr. Justice Clark having disqualified himself), with the result that the lower court decision was sustained.

Dr. Peters is an eminent physician and the senior professor of medicine at Yale University. For several years, prior to 1951, he served as a special consultant to the Public Health Service, advising the Surgeon General on proposals to grant Federal assistance to medical research projects—work which involved no access to confidential or strategic information. Charges were lodged against him in 1949 by unknown persons; but he was promptly cleared by the agency loyalty board. The charges were brought up again in 1951; and after a hearing he was cleared once more. In 1953, however, he was called before the Loyalty Review Board for a post-audit; and the board concluded there was a "reasonable doubt" as to his loyalty.

In the hearing before the board, Dr. Peters affirmed his loyalty to the United States and answered all questions under oath. Among the witnesses who appeared, also under oath, to assert their belief in his loyalty were Charles W. Seymour, former president of Yale; Judge Charles E. Clark of the Second Circuit Court of Appeals, and C. M. H. Long, former dean of the Yale Medical School. The only evidence against him came at second hand from informants whose testimony was not taken under oath and whose identity, with a single exception, was unknown to the board. Dr. Peters, of course, had no opportunity

to cross-examine them and no real means of refuting their allegations, since he could not know precisely what they were.

Few Americans will dispute the need for a fair and efficient loyalty check system in Government. The question is whether the procedures in the Peters case served to impose a kind of punishment without due process. It will be constructive for the Supreme Court to examine these procedures and say definitely whether they comport with the Constitution.

The **American Physiological Society** passed this resolution at its autumn meeting in Madison Wis.

Whereas The American Physiological Society was founded to facilitate the advancement and utilization of the physiological sciences, and is therefore deeply concerned about practices which might obstruct the services of physiologists to the public, and

Whereas the present state of international tension has brought about in the United States of America a legitimate concern for the security of our country, which has, however, unfortunately led to the institution of practices which are in our opinion both improper and unwise; and which have resulted in the denial or withdrawal of grant-in-aid funds to support the unclassified researches of investigators suspected but not convicted of subversive or disloyal acts.

Now therefore be it resolved that The American Physiological Society publicly record its unqualified opposition to any abridgment of the basic tenets of the United States Constitution and its amendments, and the American principle of maintaining that a person is innocent until proven guilty of a specific offense; and we condemn any invasion of the American community by principles and practices which are characteristic of authoritarian, dictatorial governments, and urge that a firm stand be made against the introduction of punitive devices to circumvent the constitutional rights of United States citizens; and we call special attention to the fact that the whole nation loses when a scientist is improperly and unnecessarily prevented from contributing to new knowledge; and

It is further resolved that this Society appeal to the proper authorities to conduct our national government so as to preserve the principle of innocence of citizens until guilt is proven, and to make adequate provision for appeal to an impartial body by those scientists denied financial support, to the end that the talents of worthy scientists will be utilized in the promotion of knowledge in the public interest, which is best served by the preservation of the principles of justice and tolerance without which any struggle against authoritarianism becomes meaningless, and

It is further resolved that nothing in this document is intended to advocate protection for those guilty of disloyal or subversive acts against the United States.

R. S. Satoskar and R. A. Lewis of Seth G. S. Medical College, Bombay, India, report in the current issue of *Antibiotics and Chemotherapy* (vol. 4, No. 11) that there is evidence that **terramycin raises blood protein** when given to a person on a low-protein diet. The investigators analyzed the effect of small daily doses of terramycin and vitamin B_{12} on the blood protein make-up of 14 of their students. For control purposes the students were divided into three groups. One group received only the antibiotic, another the vitamin supplement alone, and the third, the two in combination.

At the end of 2 mo all students receiving terramycin, either alone or in combination with vitamin B_{12}, had increased blood proteins. The group receiving the vitamin alone showed little change. From these observations, Satoskar and Lewis believe that terramycin may increase the body's ability to use the proteins in the diet by changing the bacterial population in the intestines.

Albert André Nast, an obstetrician in Chelles, a Paris suburb, recently delivered his 4500th baby, his **2000th delivery since he became blind** 24 yr ago. He has so developed his sense of touch that he regularly performs surgery.

Two types of rare **"living insect fossils"** from the Ice Age have been discovered in Death Valley in a pond near Saratoga Springs by John Belkin and William McDonald of the department of entomology at the University of California at Los Angeles. One group, *Corethrella laneana,* is evolutionally midway between gnats and true mosquitoes. This species is different enough to suggest a distinct subspecies.

The other find is a true mosquito. Known as *Uranotaena anhydor,* it is related to a type found in Texas. It is thought to feed on frogs. Both populations of insects apparently have been isolated in the desert area since the end of the last glacial period.

In the same area Carl L. Hubbs of the Scripps Institution of Oceanography found a "living fish fossil." This was the desert pupfish that is thought to have been isolated in the area for 11,000 yr.

Mucic acid has been isolated for the first time from fresh fruit. E. F. L. J. Anet and T. M. Reynolds of Homebush, N.S.W., Australia, report the achievement in the 13 Nov. issue of *Nature.* The only other known natural occurrences of the acid are in putrified blood and in sugar beet juice. From almost 4½ lb of ripe peaches or pears only a trace, approximately 1/10 gr, was obtained. The method of isolation makes it almost certain that the acid, a white crystalline oxidation product of milk sugar, was present in the fruit in a natural state. Mucic acid is a substitute for cream of tartar in baking powder.

New Jersey antivivisectionists are **opposing establishment of any medical school** or dental college in the state, although the state has more than 4 million residents and not a single medical school.

A major expansion and reorganization of the **commissioned reserve of the Public Health Service,** Department of Health, Education, and Welfare, as a national defense measure has been announced. The USPHS expects to commission an additional 2000 re-

serve officers by 30 June 1955, and present plans call for the commissioning of another 3000 officers during 1955–56. In addition to building up the commissioned reserve to emergency strength, USPHS is stepping up research in disaster health problems and is developing a program to reinforce state and local health departments in time of national crisis.

C. V. Raman, professor of physics at the Indian Institute of Science, and director of the Raman Research Institute, both in Bangalore, India, has reported the discovery of a new kind of **gypsum that is doubly refractive.** Raman received the Nobel prize in 1930.

Russia is attempting to establish A. M. Butlerov, a 19th century Russian chemist, as the **father of organic chemistry** in the same manner that biologist T. D. Lysenko was once idolatrized. An interesting by-product of this attempt is the simultaneous effort to discredit Linus Pauling, 1954 winner of the Nobel prize for chemistry, whose work is related to that of Butlerov.

In a recent report to the American Chemical Society's *Journal of Chemical Education,* I. Moyer Hunsberger of Antioch College stated that the criticisms of Pauling's work and the elevation of Butlerov are an "extremely obvious exaggeration of Butlerov's contributions to organic chemistry." Hunsberger also reported that the great majority of Russian papers extolling the work of Butlerov and other Russians in the field of organic chemistry inevitably include "torrents of invective" against Western science in general and Pauling in particular. Russia believes that Pauling has contributed theories to organic chemistry that directly oppose communistic philosophy, and are therefore "an example of world outlooks hostile to the Marxist view."

R. A. Hefner, professor of zoology at Miami University, Oxford, Ohio, has reported that a student, Alan Linn, discovered more than 20 **multilimbed bullfrogs** in a pond in southern Ohio. Multiple limbs have been induced on frogs artificially, but in nature such duplications are freaks. The frogs found vary in abnormality from one extra hind leg below the knee to as many as six hind legs.

A subcommittee of the House Committee on Education and Labor is assembling data on **Federal support of medical research** in teaching institutions. The study is part of its general investigation of Government activities in relation to education at all levels. At the request of Rep. Ralph W. Gwinn (R., NY), subcommittee chairman, Federal agencies are furnishing great quantities of information bearing on their grants-in-aid, teaching assistance, and graduate education programs. The Gwinn subcommittee has conducted hearings intermittently since September. These were concluded on 7 Dec. and a final report is to be published soon.

Scientists in the News

Grant L. Rasmussen has been appointed chief of the section on functional neuroanatomy in the laboratory of neuroanatomical sciences, National Institute of Neurological Diseases and Blindness, Bethesda, Md. He formerly was professor of anatomy, in charge of neuroanatomy, at the Medical School of the University of Buffalo. He is well known for studies of the central auditory mechanisms of the brain.

Carl S. Hallauer, executive vice president of Bausch and Lomb Optical Co., Rochester, N.Y., has been elected president of the 101-yr-old firm, the largest integrated optical plant in the world. He began his business career as a newsboy when orphaned at the age of nine.

Paul C. Bucy, professor of neurology and neurological surgery at the University of Illinois since 1941, has joined the faculty of Northwestern University's medical school as professor of surgery.

A research scientist and an electronics engineer were awarded the first National Electronics Conference award at the tenth anniversary session of the conference held recently in Chicago. Recipients of the $250 award were **E. D. McArthur,** manager of the electron tube section at the G.E. Research Laboratory, Schenectady, N.Y., and **E. F. Peterson,** manager of marketing for the G.E. radio and television department in Syracuse, N.Y. They were honored for their paper entitled "The lighthouse tube; a pioneer ultra-high-frequency development" presented at the first NEC conference in 1944.

The new award will be presented annually to "the author or authors of a paper presented at a previous conference which introduced developments of a new and revolutionary character capable of significantly influencing an electronic field or of opening an avenue to a major field of electronic science of application."

Pierre Grabar, director of the biophysics section of the Pasteur Institute, Paris, has accepted appointment as a senior fellow in the James W. McLaughlin Fellowship Program in Infectious Diseases and Immunity at the University of Texas Medical Branch, Galveston. He will work in the tissue culture laboratory and in the tissue metabolism laboratory.

Another visitor from abroad is **Bingt Yohanson,** professor of plastic surgery, University of Stockholm, who is at the Medical Branch to survey the methods being used for the treatment of severe burns.

The Bendix Aviation Corp. has announced the appointments of **A. P. Fontaine** as director of engineering and of **A. C. Hall** as general manager of the Research Laboratories. Fontaine, who will also have jurisdiction over the laboratories of the corporation, will supervise an engineering program that during the past year expended $70,000,000 and used the services of a staff of more than 7000 persons. Prior to his present ap-

pointment Fontaine helped direct expanded operations in aircraft control, navigation and instrument equipment, electron tubes, ignition systems, meteorological instruments, precision electric units, and other products at six of the 24 manufacturing divisions of Bendix.

Hall, previously an associate professor at MIT, has been serving as technical director of the Bendix Research Laboratories. Since he joined the firm, he has directed development work for missile guidance systems, hydraulic control components, digital and analog computers, automatically controlled machine tools, and special instruments for process controls.

Carl Binger has been appointed lecturer in psychiatry at the Harvard Medical School and consulting visiting psychiatrist at Massachusetts General Hospital. Binger, who is particularly interested in the problems of mental health in relation to education, has also been appointed psychiatric consultant to the medical staff of Radcliffe College. He will participate in the Radcliffe Seminars, an adult education program at the graduate level offered to women in Greater Boston.

Binger, editor-in-chief of *Psychosomatic Medicine,* was formerly associated with the Rockefeller Institute for Medical Research, and until recently practised psychiatry in New York, where he was on the faculty of the Cornell University Medical College and on the visiting staff of New York Hospital.

The Browder J. Thompson memorial prize for 1955 has been awarded by the Institute of Radio Engineers to **Blanchard D. Smith, Jr.,** of Melpar, Inc., Alexandria, Va., for his paper "Coding by feedback methods," which appeared in the Aug. 1953 issue of the *Proceedings of the I.R.E.* The award is made annually to an author under 30 yr of age at date of submission of manuscript for a paper, recently published by the IRE, that constitutes the best combination of technical contribution and presentation of the subject. Smith is a consulting project engineer on electronic research and development projects.

William A. Hunt, chairman of Northwestern University's psychology department, delivered the three Thomas W. Salmon lectures before the New York Academy of Medicine early this month. He discussed the role of the clinical psychologist in the study and treatment of mental illness. This was the first time since the establishment of the lectureship in 1932 that the honor was extended to a psychologist.

Morris M. Leighton, emeritus chief of the Illinois State Geological Survey, was an official guest of the Board of Natural Resources and Conservation, State of Illinois, at a dinner given in his honor on 20 Oct. to commemorate his completion of 31 yr as chief of the survey. During his tenure, Leighton extended the geological research of the survey along fundamental and applied lines, added geochemistry and mineral economics as substantial sections of the organization, gradually increased the full-time staff from 15 to 125 persons, and was instrumental in interesting the General Assembly and the Governor of Illinois in appropriating nearly $3 million for the construction and equipment of the National Resources Building for the research work of the Geological Survey and the Natural History Survey. The research laboratories of the Geological Survey number more than 40 and the biennial budget exceeds $1,600,000.

With the combined staffs of the department of geology of the University of Illinois and of the Geological Survey, Urbana has become one of the largest and most active geologic research centers in the country. On 1 July Leighton retired from his administrative duties; he has resumed his research on the Pleistocene geology of Illinois. His successor is **John C. Frye,** former state geologist of Kansas and professor of geology at the University of Kansas.

Ernest O. Lawrence, director of the University of California Radiation Laboratory, has been awarded the 1954 medal of the American Cancer Society for his "distinguished contribution to cancer control." He was cited for opening up new fields of cancer research through his development of the cyclotron.

Peter Brian Medawar, Jodrell professor of zoology and comparative anatomy at the University of London, gave the annual New York University Post-Graduate Medical School Sigmund Pollitzer lecture at the NYU–Bellevue Medical Center on 15 Nov. He spoke on "Skin transplantation and the homograft problem."

Clyde H. Bailey, retired dean of the University of Minnesota's Institute of Agriculture, has been presented the 1954 Gamma Sigma Delta national award for distinguished service to agriculture. The honor society of agriculture recognizes one outstanding agriculturist each year. Bailey retired on 30 Dec. 1952 after more than 40 yr of service as a teacher, biochemist, and administrator—all at the University of Minnesota, the institution he enrolled in at the age of 13. His research resulted in many advancements in cereal chemistry and food technology. He devised many methods of flour quality testing and is recognized for them throughout the world. His work on grain storage chemistry and his ability to develop new research devices have also won him wide recognition.

He helped establish the American Association of Cereal Chemistry and is author of three books and more than 300 scientific and technical articles. A member of the American Association of Cereal Chemists, he has been its president and editor and has served on many of its committees.

Maurice G. Kelliher, formerly of the Mullard Research Laboratories at Surrey, England, and an engineer whose field is linear accelerator design and construction, has joined the staff of High Voltage Engineering Corp., New York. The company has built, in cooperation with Stanford University, a 50-Mev "li-

nacc" for the Atomic Energy Commission's Argonne Cancer Research Hospital in Chicago and has just completed the first of a new line of small, high-power linear accelerators to operate in the 4 to 8-million-volt range for use in radiography, industrial processing, and medical research.

William D. Robinson, professor of medicine at the University of Michigan Medical School, has been appointed editor of the *Journal of Laboratory and Clinical Medicine,* the official organ of the Central Society for Clinical Research; **William H. Beierwaltes,** associate professor of medicine at Michigan, is the new associate editor. They replace **Clayton G. Loosli,** professor of medicine, University of Chicago School of Medicine, who has held the editorship for the past 6 yr, and his colleague Robert H. Ebert, associate professor of medicine, who has been associate editor for 1½ yr. After 1 Jan. manuscripts submitted for possible publication in the *Journal* should be sent to Dr. Robinson.

Alfred Weissler, former chief of the Washington office and of the chemistry branch of the Office of Ordnance Research, U.S. Army, has joined the research grants branch of the National Cancer Institute, Bethesda, Md.

Necrology

Tadeusz Banachiewicz, 72, astronomer, mathematician, author, and director of the Krakow Astronomical Observatory, Krakow, Poland, late November; **Robert R. Chace,** 44, instructor in ophthalmology at Columbia University's College of Physicians and Surgeons, New York, 24 Nov.; **Edwin M. Chance,** 69, chemist, mining engineer, inventor, and president of United Engineers and Constructors, Philadelphia, Pa., 26 Nov.; **Enrico Fermi,** 53, pioneer nuclear physicist, Nobel prize winner, former associate director of the Los Alamos Laboratory, and distinguished service professor for nuclear studies at the University of Chicago, Chicago, Ill., 28 Nov.; **Winifred Hathaway,** 84, educator and associate director of the National Society for the Prevention of Blindness, New York, 1 Dec.

Leon Menzl, 71, consulting engineer for the sugar industry, Westport, Conn., 29 Nov.; **Jerome Mullane,** 73, retired horticulturist with the Boyce Thompson Institute for Plant Research, Yonkers, N.Y., 24 Nov.; **Herbert Osborn,** 98, professor emeritus of zoology and entomology at Ohio State University, Columbus, Ohio, 20 Sept.; **Edwin A. Stevens,** 72, marine engineer, specialist in propeller design, and author, Hoboken, N.J., 1 Dec.; **Joseph W. Stewart,** 54, chief mechanical designing engineer for the Cochrane Corporation, Philadelphia, Pa., 24 Nov.; **Wallace R. Turnbull,** 84, mechanical and electrical engineer, pioneer in aeronautical development, and inventor of the variable-pitch propeller, St. John, N.B., Canada, 26 Nov.

Meetings

Alcoholism and narcotic addiction will be reviewed in the 30th annual Hermann M. Biggs memorial lecture at the New York Academy of Medicine, 3 Feb. The lecture will be in two parts. Giorgio Lolli, director of the Silkworth Memorial Service at Knickerbocker Hospital in New York, will speak on "Alcoholism as a medical problem." Lolli is also director of the Yale Plan Clinic at Yale University, and is consultant on professional services to the Connecticut Commission on Alcoholism. The second speaker, Harris Isbell, director of the Addiction Research Center at the U.S. Public Health Service Hospital, Lexington, Ky., will lecture on the "Medical aspects of drug addiction."

The 11th annual **Conference on Protein Metabolism,** sponsored by the Bureau of Biological Research of Rutgers University, will be held in New Brunswick, 28–29 Jan. 1955. General subject of the conference will be *Some Physiological Aspects and Consequences of Parasitism.* Reports will be given by William Trager, Clark P. Read, James W. Moulder, Ernest Bueding, W. H. Taliaferro, and Leslie A. Stauber on cultivation of intracellular parasites, intestinal physiology and the host-parasite relationship, protein metabolism of intracellular parasites, glycolytic enzymes of schistosomes, antibody formation, and leishmaniasis and metabolism of the host. The conference is open to all registrants. Reservation blanks may be obtained from Prof. William H. Cole, Rutgers University, New Brunswick, N.J.

A group of approximately 30 investigators and clinicians who are prominent in the development of artificial kidneys, artificial heart-lung machines, and similar biomechanical equipment have organized a society, the **American Society for Artificial Internal Organs,** for the purpose of exchanging information and of stimulating developments in this field. The first meeting of this group will be held in conjunction with the meeting of the American Medical Association, 4–5 June 1955, in Atlantic City, N.J. Arrangements for a scientific program and for a dinner meeting are being made at this time. Information may be obtained from the acting secretary, Dr. Peter F. Salisbury, Institute for Medical Research, Cedars of Lebanon Hospital, 4751 Fountain, Los Angeles 29, Calif.

The annual meeting of the national **Association of Geology Teachers** is to be held in combination with the annual meeting of its East Central section at Columbus, Ohio, 28–29 Jan. 1955. The geology department at Ohio State University is acting as host and a local committee is making plans. There will be a tour through the research quarters of the Battelle Memorial Institute, which employs a large staff of geologists, and there will be visits to the U.S. Geological Survey Coal Laboratory and the Ohio division of the Geological Survey. Exhibits of teaching aids in geology are invited. The meetings will include a sym-

posium, *Geology on TV,* and a film and panel on "Increasing college enrollments: what will they mean to geology?" There will be a short business session, and at the annual banquet the 1954 Neil Miner award will be made and the president and retiring president, Leland Horberg and W. H. Shidler, will speak.

Available Fellowships and Awards

In recognition of the contributions to science of Selman A. Waksman, **the Waksman-Merck postdoctoral fellowship** in the natural sciences related to the fields of medicine and health has been established at Rutgers University by Merck and Co., Rahway, N.J. The fellowship is open to citizens of the United States or Canada who have received, or are about to receive, the Ph.D. or equivalent degree and are interested in further training and research experience in biochemistry, chemistry, entomology, microbiology, nutrition, physics, physiology, or zoology as related to medicine and health.

The award is $4000 for 1 yr, beginning 1 July 1955. *The closing date for receipt of applications is 10 Jan. 1955.* Application forms may be obtained from the Dean of the Graduate School, Rutgers University, New Brunswick, N.J.

Nominations are now being received by the American Pharmaceutical Association for the 1955 **Chilean Iodine Educational Bureau, Inc., award** recognizing outstanding research in the chemistry and pharmacy of iodine and its compounds as applied in pharmacy or medicine. The award consists of $1000 and a diploma setting forth the reasons for selection of the recipient. It may be presented each year at the annual meeting of the association.

Any member of the association may propose a nominee by submitting eight copies of each of the publications to be considered in the competition, a biographic sketch of the nominee including date of birth, and a list of his publications. Eight copies of the nomination must be submitted to Robert P. Fischelis, Secretary of the American Pharmaceutical Association, 2215 Constitution Ave. NW, Washington 7, D.C. To be eligible for the 1955 award, *nominations must be received on or before 1 Jan. 1955.*

The Institute of International Education, 1 E. 67th St., New York, has announced that the **University of Ceylon,** Peradeniya, is offering two fellowships to American graduate students for the 1955–56 academic year. Awards cover room, board, and tuition. Grantees should have funds to pay their own travel and incidental expenses. *Closing date for application is 15 Jan. 1955.*

The Ceylon fellowships offer Americans an opportunity to study a variety of subjects, including sociology. Male candidates under 35 yr of age are preferred. Other eligibility requirements are U.S. citizenship; a good academic record; good moral character, personality, and adaptability; a broad knowledge of the culture of the United States; and good health. Applicants should write to the institute's U.S. Student Department.

Applications are being received for the **Drummond fellowship for research in nutrition.** The value of the fellowship will be £900 per annum, to which may be added a grant for expenses of research not exceeding £50 per annum. In addition up to £90 may be paid for superannuation. The fellowship will normally be tenable for 2 yr. Full particulars can be obtained from the Honorary Secretary, Drummond Trust, University College London, Gower Street, London W.C.1. Completed application forms *must be received not later than 15 Jan. 1955.*

Grants and Fellowships Awarded

The Committee on Dentistry of the National Research Council has officially approved 10 dental research projects sponsored by the Research and Development Division of the Office of the Army Surgeon General. The period of approval is for 12 mo beginning 1 Dec.

University of Michigan. J. K. Avery. Development and growth of the human tooth.

University of Minnesota. W. D. Armstrong. Determination of microquantities of fluoride in biological materials.

Indiana University. H. G. Day. Fluorine in nutrition and dynamic state of teeth and bones.

Indiana University. R. B. Fischer. Physical structure of dental enamel and bones.

Indiana University. R. W. Phillips. Electrical and thermal conductivity of dental cements and restorative materials.

Medical College of Virginia. S. B. Kreshever. Effect of local irritants on oral tissues.

Tufts College Dental School. R. S. Manly. Synthetic dental plaques prepared from strains of oral microorganisms.

University of Illinois. M. B. Engel. Histochemical studies of dental tissue.

Harvard School of Dental Medicine. R. S. Seganaes and J. M. Shaw. Interrelations between the oral hard structures and their internal and external environments in health and disease.

New York University. O. R. Trautz. Apatites of dental enamel.

The **National Foundation for Infantile Paralysis** has recently awarded 127 scholarships and fellowships in the fields of physical therapy and occupational therapy and 66 scholarships in medical social work. In addition, the following awards were made.

Teaching fellowships

Yolanda Diaz, Hato Rey, Puerto Rico; div. of physical therapy, Stanford University, 18 mo.

Ronald A. Hershey, Los Angeles, Calif.; dept. of physical therapy, University of Southern California, 17½ mo.

V. Joyce Lim, Los Angeles, Calif.; dept. of physical therapy, University of Southern California, 12 mo.

Rachel Lee Nunley, Greenville, S. Car.; dept. of anatomy, Duke University, 15 mo.

Melvin A. Orser, Los Angeles, Calif.; dept. of physical therapy, University of Southern California, 12 mo.

Betty J. Sanders, Oklahoma City, Okla.; div. of physical therapy, Stanford University, 18 mo.

Sara M. Schoppenhorst, Kansas City, Kan.; div. of physical therapy, Stanford University, 14¾ mo.

E. Joan Turnquist, Salt Lake City, Utah; div. of physical therapy, Stanford University, 11½ mo.

Marian Williams, Stanford, Calif.; dept. of anatomy, Stanford University, 9½ mo (extension).

Shirley M. Bowing, Tacoma, Wash.; dept. of occupational therapy, University of Southern California, 8¾ mo.

Mailyn R. Fakler, Iowa City, Iowa; dept. of speech pathology, State University of Iowa, 14 mo.

Travel grants

Margaret O. Camp, Middletown, Conn.; observation and experience in centers in England, Denmark, France, Switzerland, Germany, Italy, Netherlands, Sweden, Norway, 3 mo.

Ruth Cook, San Francisco, Calif.; International Poliomyelitis Congress, Rome, and observation and study of facilities in clinics and hospitals in Switzerland and Southern Germany, 2 mo.

Ermine R. Duccini, Fair Oaks, Calif.; study of facilities in clinics and hospitals in Italy, 2 mo.

In the Laboratories

Ground was broken on 3 Nov. for the $750,000 Research-Laboratory Building at the **New York Botanical Garden.** The Garden's research program has been conducted under difficulties imposed by inadequate facilities in the basement of the Museum and Administration Building. The new structure, with microbiology, biochemistry, plant physiology, and plant pathology laboratories, will permit expansion of studies in antibiotics, plant nutrition, and plant growth of significance to man, and of studies of insect pests and plant diseases and their control.

When Honduras was hard hit by storm and flood this fall **Parke, Davis and Co.,** Detroit, donated 5000 doses of Chloromycetin and 5000 doses of Camoquin. The medicine was flown from the firm's branch at Colon, Panama, to health authorities at Tegucigalpa.

The new address of the **Armour Laboratories** general office is Kankakee, Ill. All executive and administrative personnel and equipment were transferred to the new Armour Pharmaceutical Center in early October.

The Naval Ordnance Development Award has been given for the second time to the **Applied Physics Laboratory of The Johns Hopkins University,** Silver Spring, Md. The laboratory, which is under the direction of R. E. Gibson, was cited for "continued outstanding scientific achievement since 1945, and in appreciation of exceptional service to Naval Ordnance Development."

Miscellaneous

A new periodical, ***Clinical Chemistry,*** official journal of the American Association of Clinical Chemists, will begin publication in January 1955. Designed to serve the clinical laboratory worker, the new journal will be devoted to the publication of original articles on all aspects of clinical chemistry. It will also supply the only central abstracting service covering the field. Establishment of the journal brings to fruition 5 yr of planning by the association. Material of utmost importance to clinical chemistry and to clinical laboratories previously scattered throughout scientific literature will now be available in a single source. It is hoped that the new journal will make a positive contribution to modern medical progress by shortening the time lag between new findings and their practical use in the laboratory.

Harold D. Appleton, Metropolitan Hospital, New York, and the present editor of *The Clinical Chemist,* has been named chairman of the editorial board of the new journal. The board will consist of Hugh J. McDonald, Loyola University, Chicago; Marschelle H. Power, Mayo Clinic, Rochester, Minn.; John G. Reinhold, University of Pennsylvania; Joseph I. Routh, University of Iowa; Harry Sobotka, Mt. Sinai Hospital, New York; and Warren Sperry, N.Y. Psychiatric Institute, New York.

Papers submitted for publication should be addressed to Harold D. Appleton, Editor, *Clinical Chemistry,* Box 123, Lenox Hill Station, New York 21. Papers from European scientists may be sent directly to the New York address or to the publication's foreign editors: Dr. J. C. M. Verschure, Emmalaan 41, Utrecht, The Netherlands; and Prof. E. J. King, Postgraduate Medical School, University of London, London.

Clinical Chemistry will be published bimonthly by Paul B. Hoeber, Inc., 49 E. 33rd St., New York 16. The annual subscription price will be $8 in the U.S.A. and countries of the Pan American Union, $8.50 in Canada, and $9 elsewhere.

To assist scientists engaged in studies on the **chemotherapy of cancer,** a program for wide exchange of information in this field of medical research has been established by the Committee on Chemotherapy of the National Advisory Cancer Council in cooperation with the National Cancer Institute, the American Cancer Society, and the Damon Runyon Fund. All investigators interested in cancer chemotherapy are invited to take part in the program. Chairman of the committee is Sidney Farber, director of the Children's Cancer Research Center, Boston.

A variety of activities will be developed through the program. Among them are (i) issuance of a periodic compilation of informal reports on current research in cancer chemotherapy; (ii) formal conferences and symposiums on cancer chemotherapy; (iii) compilation and issuance of a bibliography of cancer chemotherapy literature covering the period from 1946 through 1954; (iv) provision of opportunities for individuals and small groups to meet informally in various parts of the country for discussions of interinstitutional studies, of standards for evaluating chemical agents, of difficulties in this research area, of potentially useful agents, and of other topics the conferees consider pertinent.

In addition, the committee plans to bring to the attention of investigators chemical agents that may be of interest to them and to assist them in obtaining the chemicals in sufficient quantity for evaluation. Investigators who wish to take part in any of the activities of the program are invited to write to Dr. Gordon Seger, Secretary, Cancer Chemotherapy Committee, National Cancer Institute, Bethesda 14, Md.