self-discipline must be coordinated with the effort of other individuals.

It is commonplace to say that graduate education is the most expensive type of education there is; moreover, graduate study is encumbered with a number of outmoded practices that make it difficult to determine the actual cost. In order to assist a graduate student in making ends meet, the university often awards him an assistantship with free tuition in the graduate school. If he is preparing for a career as a faculty member, the assistantship may give him a valuable opportunity for practical work in teaching. Unfortunately, however—and again, because of the pressure of numbers—the graduate assistant does not receive much guidance in carrying out his duties and so may come to look upon his assistantship work as a menial chore. This does not do him any good and it does even less good to the undergraduate students who are under his ministrations. It seems to me that in view of the national need for well-educated scientists, recognition should be given to the need of funds to support such a program properly. If graduate students plan on a teaching career, their practical work as assistants should form a part of their educational program and not be a distasteful job that has to be done in order to earn a little money.

I note that in the report of the President's Commission on Higher Education a recommendation is made that the Government give financial support to professional graduate study through a system of scholarships, fellowships, and direct grants to the colleges. I happen to be of the opinion that, while some governmental aid may undoubtedly prove most necessary and desirable to insure the solution of this problem, there are other and important steps that should be taken at least concurrently. The universities themselves, by making a thorough reappraisal and reorientation of the graduate program, can do much to make it more effective and to provide a fair proportion of the funds necessary. I believe, also, that industry, which certainly benefits from professional scientific study, should assist in meeting the cost. As is well known, a number of prominent industries already do this, and do it without imposing any restrictions whatsoever upon where the individual shall undertake employment. If, in the end, the measures undertaken by universities and industry should prove inadequate to meet the need, governmental support might be given through the media of scholarships and fellowships to those individuals who have fully demonstrated their ability and promise of further achievement.

In my opinion, however, it would not be good for science education or the Nation for the Government to undertake the whole financial support of insuring adequate scientific personnel resources. It has become too much the fashion to look to government for money to solve all problems. I believe that the surest and best solution lies in the strength of the individual student, professor, and university, with only such governmental participation as is needed as a last resort.

NEWS and Notes

Rufus Oldenburger, formerly professor of mathematics at Illinois Institute of Technology, has been appointed chairman of the Mathematics Department at De Paul University, Chicago.

Chester I. Barnard, president of the New Jersey Bell Telephone Company, will become head of the Rockefeller Foundation on July 1, succeeding **Raymond B. Fosdick,** who plans to retire. Mr. Barnard was national president of the USO during the recent war and is a consultant to the American representative on the UN Atomic Energy Committee.

Frederick K. Sparrow, Jr., associate professor of botany, University of Michigan, will take sabbatical leave covering the second semester of the 1948–49 year in order to participate in a study of aquatic plants in relation to mosquito populations in the region of Villaviciencio, Colombia, at the laboratories of the Rockefeller Foundation.

Carl Eckart, formerly director of the University of California's Marine Physical Laboratory in San Diego, on March 1 became director of the Scripps Institution of Oceanography, succeeding **H. U. Sverdrup,** who has held the post for the past 12 years.

E. V. Staker, associate professor of agronomy in the chemurgy project, University of Nebraska, Lincoln, joined the staff of Gen. MacArthur's Far East Command in Tokyo in mid-March. Dr. Staker will have the responsibility of determining fertilizer needs and assisting with importation and distribution of fertilizers and general supervision of the soil and crop program in Japan, southern Korea, and Okinawa. His assignment is for a minimum period of two years.

Bruce A. Rogers, who has been associated with the U. S. Bureau of Mines since 1935, has been appointed senior metallurgist in the Atomic Research Institute at Iowa State College.

Karl Ver Steeg, of the Department of Geology and Geography, College of Wooster, Wooster, Ohio, will mark his 25th year of service to the College this spring. In honor of this occasion a group of his former students, under the chairmanship of Shannon McCune, of Colgate University, are organizing a special program for May 7–9 at Wooster. There will be two formal sessions along the lines of Dr. Ver

Steeg's professional interests. One, to be directed by Paul Shafer, of the University of Illinois, will be concerned with the place and content of geology and geography in the liberal arts college. The second, arranged by H. T. U. Smith, of the University of Kansas, will consist of research papers contributed by some of Dr. Ver Steeg's former students. At a dinner on May 7 in honor of Dr. and Mrs. Ver Steeg letters from students scattered over the world and messages from colleagues, friends, and scientific societies will be read.

Zola M. Fineman, formerly with Alaska Agricultural Experiment Stations, Palmer, has been appointed associate horticulturist anl superintendent of the University of Arizona Vegetable Research Farm at Tempe.

Philip C. Huntly, head of the Department of Civil Engineering at Illinois Institute of Technology, has announced that he will retire at the end of August. Prof. Huntly has been department head since 1938 and an engineering consultant for the Armour Research Foundation since its establishment.

L. Frederic Hough, formerly assistant chief in horticulture, University of Illinois, was appointed professor and research specialist in horticulture at the New Jersey Agricultural Experiment Station on March 1. Prof. Hough will continue the breeding program with tree fruits and small fruits which the Department of Horticulture has been conducting for over 30 years.

Francis Cope Evans, at present assistant professor of biology at Haverford College, has been appointed assistant biologist in the Laboratory of Vertebrate Biology and assistant professor of zoology at the University of Michigan beginning on July 1.

Awards

The $5,000 cash award made annually by the Passano Foundation goes this year to Helen B. Taussig, associate professor of pediatrics, and Alfred Blalock, professor of surgery, Johns Hopkins Medical School, who developed the successful operative procedure popularly known as the "blue baby operation." The award will be presented at the Palmer House in Chicago on the evening of June 23, during the convention of the American Medical Association. Since the first such operation was performed late in 1944, more than 600 patients from all over the world have been operated on at Johns Hopkins alone.

The Passano Foundation, established by the Williams & Wilkins Company, Medical Publishers, Baltimore, Maryland, to aid the advancement of medical research, especially that which bears promise of clinical application, has made three previous awards. These have gone to E. J. Cohn, Harvard University, for his work on fractionation of blood; Ernest Goodpasture, Vanderbilt University, for virus culture by the chick embryo method; and Selman Waksman, of Rutgers University, for the discovery of streptomycin.

Marvin J. Udy, consultant in chemistry and metallurgy of Niagara Falls, New York, has been awarded the 1948 Jacob F. Schoellkopf Medal of the Western New York Section of the ACS for his contributions to the refining and utilization of chromium.

H. K. Hartline, associate professor of biophysics at the Johnson Foundation, University of Pennsylvania Medical School, was recently awarded the Howard Crosby Warren Medal by the Society of Experimental Psychologists. The award was made at the 44th annual meeting of the Society, held at Bryn Mawr College on March 26. Dr. Hartline received the medal "for his study of the processes of light and dark adaptation in single photoreceptor elements." The citation continued: "In this investigation Hartline applied the method of recording impulses from single photoreceptor units, a technique which he has raised to new levels of effectiveness. Hartline's application of a delicate and precise technique has provided us with information which will be invaluable for specifying certain limiting parameters of a theory of visual discrimination."

The Harold Albert Wilson Research Award in Physics has been established at the Rice Institute, Houston, Texas, by holders of advanced degrees in physics from that institution. Dr. Wilson became professor of physics at Rice in 1912 and retired in September 1947 as professor emeritus. A committee composed of Norman Ricker, of the Research Department, Carter Oil Company, Tulsa (chairman), Maurice Ewing, associate professor of geology at Columbia University, and T. W. Bonner, professor of physics at Rice, has been appointed to carry out the plans of the group. The award will be conferred annually on a Rice graduate student in physics for a piece of outstanding research done in the course of his study for an advanced degree.

Wortley F. Rudd, dean emeritus of the School of Pharmacy in the Medical College of Virginia, has been awarded the 1948 Herty Medal for outstanding contributions to chemistry in the Southeast. The Herty Medal is given annually by the Chemistry Department of the Georgia State College for Women to a scientist selected by the Georgia Section of the ACS. Dean Rudd, who retired last year after 41 years on the faculty of the Medical College of Virginia, is a former president of the Virginia Academy of Science, the American Association of Colleges of Pharmacy, and the Southern Association of Science and Industry, of which he was a founder.

Fellowships

A graduate Teaching Fellowship in Bacteriology is available for a woman at Smith College for the year 1948–49. The fellowship is renewable for a second year ($800 for the first year and $900 for the second year, plus tuition and fees). Under this type of fellowship a requirement of part-time assistance in laboratory work permits completion of work for the A.M. degree in two years. Inquiries should be addressed to: Chairman, Department of Bacteriology, Burton Hall, Smith College, Northampton, Massachusetts.

The Fanny Bullock Workman Travelling Fellowship, given to an outstanding graduate student at Bryn Mawr College, has been awarded for the coming year to Esther Duke Redding, a graduate student in physics. Mrs. Redding, who will use the fellow-

ship to spend a year at the University of California, Berkeley, took her undergraduate degree in chemistry at Wellesley College and spent several years with the National Institute of Health before entering the Graduate School at Bryn Mawr.

Colleges and Universities

The University of North Carolina has recently established an Institute of Fisheries Research with headquarters at Chapel Hill and a research laboratory at Morehead City. The director of the Institute is Robert E. Coker, Kenan professor of zoology at the University. Harden F. Taylor, of New York, has been designated as associate director. Members of the staff who have entered upon duty or will soon do so are W. A. Ellison, Jr., fisheries specialist, formerly staff production technologist with the Atlantic Coast Fisheries Company; A. F. Chestnut, specialist in oyster culture, recently director of the New Jersey Oyster Research Laboratory; E. W. Roelofs, specialist in hydrobiology, formerly with the Michigan Fisheries Research Laboratory and recently in charge of research on stream sanitation and textile waste disposal problems with the Institute of Textile Technology; and Carter Broad, scientific assistant, recently a graduate student in the University's Department of Zoology. Hilary B. Moore, of the Woods Hole Oceanographic Institution, is serving on a part-time basis as biologist on the Shrimp Survey.

A survey of shrimping grounds off the North Carolina coast is now in progress. For this work the Navy schooner *Reliance* is being employed with the cooperation of the Naval Hydrographic Office, and the Woods Hole Oceanographic Institution is furnishing two oceanographers and a geologist. The most modern equipment is being used to map the bottom and to study the general oceanographic and biological conditions. Shrimp trawls and try nets will be used in an effort to locate possible additional supplies of shrimp and commercial fishes. The staff hopes to learn more about the biology of the shrimp and to gain information that will be helpful not only to the shrimp fishery but also to other commercial fisheries.

In addition, studies and experiments concerning the oyster are being inaugurated which may serve to guide state planting and promote private oyster farming. Special studies will be made of the biological and physical conditions in the extensive sounds inward from the North Carolina Banks and of the relations of such conditions to the distribution and movements of oyster and clam larvae, shrimp, crab, and fin fishes. It is planned also to deal with the technology and economics of fishery industries in order to promote the most profitable utilization of North Carolina's extensive fishery resources.

The University already offers courses in hydrobiology with some introduction to oceanography. Expansion of the training program is contemplated.

Establishment of a Toxicology Division and Toxicology Laboratory in the Medical School of the University of Buffalo has just been announced. The new unit, supported jointly by the University and the County of Erie, will work closely with city and county authorities, with hospitals, and with industry in the determination of poisons. Niels C. Klendshoj, associate in pathology, who has been working under Kornel Terplan, head of the Medical School's Department of Pathology, is director of the Division, and Milton Feldstein, who has had considerable experience in this field at Bellevue Hospital, New York, and in the Army Sanitary Corps, will perform the experiments.

The 5th annual D. J. Davis Lecture on Medical History will be given this year at the University of Illinois College of Medicine, 1853 West Polk Street, Chicago, by John F. Fulton, Sterling professor of physiology at Yale University's School of Medicine. Dr. Fulton's talk, on "The Position of William Withering in the History of Scientific Medicine," will be given at 1:00 P.M., April 28. This lectureship was established by associates and friends of Dr. Davis upon his retirement as dean of Illinois' College of Medicine in 1943.

The 7th Edwin R. Kretschmer Memorial Lecture of the Institute of Medicine of Chicago will be delivered on Friday evening, April 23, at the Palmer House by Julius White, head chemist, U. S. Public Health Service, National Institute of Health, Bethesda, Maryland. Dr. White's subject will be "Experimental Studies on Leucemia in Mice."

Meetings

The Wisconsin Academy of Sciences, Arts and Letters will hold its 78th annual meeting at Central State Teachers College, Stevens Point, Wisconsin, on April 23–24.

The 80th annual meeting of the Kansas Academy of Science will take place at Pittsburg, Kansas, April 29–30 and May 1. A special symposium on Friday will be concerned with scientific discoveries which have implications of social change. There will be a field trip on Saturday, May 1.

The present officers of the Academy are John C. Peterson, president; F. W. Albertson, president elect; Paul G. Murphy, vice-president; Frank C. Gates, secretary; D. J. Ameel, co-secretary; and Standlee Dalton, treasurer.

Jacques Bronfenbrenner, professor of bacteriology and immunology, Washington University School of Medicine, St. Louis, will deliver the I. M. Lewis Lecture at the meeting of the Texas Branch of the Society of American Bacteriologists to be held at the Baylor Medical School in Houston, Texas, April 30–May 1. His topic will be "The Relation of Reagins to Antibodies in the Light of the Unitarian Hypothesis." He will be the first speaker under this lectureship, recently established in memory of the late I. M. Lewis, for many years professor of bacteriology at the University of Texas, Austin, and one of the founders of the Texas Branch.

The American Institute of Chemists will commemorate its silver anniversary at a meeting on May 7 at the Waldorf-Astoria in New York City. The afternoon program will feature an address by Foster D. Snell, retiring president, after which "The Professional Activities of Other Societies" will be discussed by a panel of speakers including Charles C. Wilson, assistant to the secretary, who will talk

on the AIEE; W. A. Mosher, head of the Department of Chemistry, University of Delaware, who will outline the work of the ACS; E. L. Chandler, assistant secretary, who will review the program of the ASCE; and W. T. Nichols, of Westvaco Chlorine Products Corporation, who will cover the activities of the AICE. The annual business meeting will also be held and new officers elected. In the evening there will be a joint meeting and dinner with the New York Section of the ACS, at which the Institute's gold medal will be presented to Charles Allen Thomas, executive vice-president and technical director of Monsanto Chemical Company. Francis J. Curtis, vice-president of Monsanto, will address the group on "The Career of the Medalist."

The Third Symposium on Combustion and Flame and Explosion Phenomena will be held at the University of Wisconsin September 7–11. Formal papers will be presented on fundamental, experimental and theoretical aspects of various phases of the subject, including, among others, mechanism and kinetics of reations of explosive mixtures, dynamics of flame, detonation, spectroscopic studies on flames, and measurement of temperature and pressure in combustion gases. There will also be contributions on applied subjects. In addition, round-table discussions will be held on thermodynamics and the physical properties of hot gases, thermochemistry, hydrodynamics of reacting systems, turbulence and its effect on combustion, applications of spectroscopy to flame research, chemical kinetics, and instrument development and experimental techniques for combustion studies. Those interest in attending may obtain announcements of the symposium from Joseph O. Hirschfelder, Department of Chemistry, University of Wisconsin, Madison. According to Dr. Hirschfelder, a large number of foreign scientists have accepted invitations to attend.

A Symposium on Electron and Light Microscopy, sponsored by Armour Research Foundation of Illinois Institute of Technology and the Institute's Physics Department, will be held on the campus at Technology Center, June 10–12. The three-day session will consist of invited papers and planned discussion covering instrumentation, techniques, and applications of both electron and light microscopy. The supplementary relationship between the two fields will be emphasized. A number of leading microscopists have already informally indicated their willingness to present papers and to take part in the discussions, and it is expected that the final program will include about 15 speakers. Ample opportunity will be afforded for interchange of ideas and problems either in large discussion groups and panel meetings or by personal contact. In addition to the sessions being planned there will be an exhibition of electron and light micrographs, an equipment exhibit, and school and plant visits.

The complete program will be announced later. In the meantime further details may be obtained from either of the co-chairmen, W. C. McCrone or C. F. Tufts, of Armour Research Foundation, 35 West 33rd Street, Chicago 16, Illinois.

In view of the increasing use of hyaluronidase both in the laboratory and in clinics, a preliminary meeting was held in New York on March 8 for the purpose of reaching agreement as to ways of standardizing the enzyme. Present at this meeting were F. Duran-Reynals, Yale University School of Medicine; R. Kurzrok, 1016 Fifth Avenue, New York; R. McCullagh, Schering Corporation; C. V. Seastone, University of Wisconsin Medical School; and J. Seifter, Wyeth Institute of Applied Biochemistry.

The Committee on Medical Science of the Research and Development Board (National Military Establishment), which has been recently formed, is to have as its chairman Francis G. Blake, Sterling professor of medicine, Yale University, according to an announcement just made by Vannevar Bush, chairman of RDB. The Committee will be concerned with the survey, analysis, and evaluation of all aspects of research and development activities in the field of medical and allied sciences, within the Military Establishment. In its research and development activities the Committee will work closely with the Hawley Committee, appointed by the Secretary of Defense to review all activity in the Military Establishment related to medicine and allied sciences.

A variety of C^{14} compounds will be available to meet the increasing demand for such materials when a plan recently announced by the AEC is fully developed. The Commission's Isotopes Division has invited a number of commercial firms to consider the desirability of engaging in the synthesis and sale of such substances, and several firms have indicated their interest in doing so. Such a procedure would make compounds labeled with C^{14} more readily obtainable and at a lower cost than would be possible if the compounds were synthesized in small individual lots by investigators in their own laboratories. To date, Tracerlab, Inc., 55 Oliver Street, Boston 10, Massachusetts, is the only firm which has formulated its synthesis program. This company is now ready to receive orders for the following compounds:

Barium carbide—70%—not to be stocked; available one week after order is received.

Acetylene—HC* ≡ C*H—not to be stocked; can deliver one week after order is received.

Sodium cyanide—dry solid containing small excess of alkali; now available.

Methyl alcohol and methyl iodide; available May 1.

Carboxyl-labeled acetic acid, acetyl chloride, ethyl acetate; available May 1.

Benzene—low activity, *ca* 1 mc/100 mM; available May 1.

Methylene-labeled ethyl alcohol and ethyl iodide; available July 1.

Methyl-labeled acetic acid, acetyl chloride, ethyl acetate; available August 1–September 1.

Methyl-labeled ethyl alcohol and ethyl iodide; available August 1–September 1.

Except in the case of benzene, the specific activity will be of the order of 1 mc/mM of compound.

While commercial firms are develop-

ing their synthesis programs the commercially available compounds will be supplemented by others prepared in AEC laboratories.

The Commission has outlined the procedure for obtaining compounds containing C^{14} from commercial firms as follows:

(a) Communicate with the company to determine the availability and price of the compound desired.

(b) Send to the Isotopes Division an "Application for Radioisotope Procurement," AEC Form 313, requesting C^{14} in the form of the compound desired and mentioning the name of the firm from which purchase is to be made. After review and approval of the application, the Isotopes Division will return two copies of "Authorization for Radioisotope Procurement," AEC Form 374.

(c) Place a purchase order for the allocated C^{14} compound with the commercial firm. The original copy of Form 374 must be attached to the purchase order.

On April 1 the Commission also announced that certain radioisotopes useful in *therapy, diagnosis,* and *research in cancer* will now be distributed in this country without charge, except for handling ($10 per shipment) and transportation. These isotopes, with their catalogue numbers, are: Iodine 131 (S–2), Phosphorus 32 (S–3), and Sodium 24 (73). They may be obtained by submitting AEC Form 313 to the Isotopes Division.

A British National Committee for Crystallography has recently been formed by the Royal Society with Sir Lawrence Bragg as chairman. Representing the Royal Society on the Committee are W. T. Astbury, J. D. Bernal, Mrs. D. C. Hodgkin, Mrs. K. Lonsdale, Sir George Thomson, and C. E. Tilley. Representatives of other organizations include G. M. Bennett (Chemical Society), D. A. Oliver (Institute of Metals), E. G. Cox (Institute of Physics), C. Sykes (Iron and Steel Institute), F. A. Bannister (Mineralogical Society), and H. Wilman (Physical Society). P. P. Ewald, R. C. Evans, and W. H. Taylor, as members of the Provisional Executive Committee of the International Union of Crystallography, are ex-officio members of the National Committee.

The first meeting of the Committee was held February 11, when preparations were begun for the first General Assembly of the International Union at Harvard University, July 28–August 30.

The Navy Department is currently expanding three comparatively new, permanent laboratories in California. One of these, the Naval Ordnance Test Station, China Lake (formerly Inyokern), 160 miles from Los Angeles, originally an activity of CalTech, is presently engaged in research, development, and test work with ordnance equipment and explosives. Another of these is the Navy Electronics Laboratory, San Diego, which is an outgrowth of work done by the University of California. Here the work concerns research, development, and testing of electronic control devices, detection and instrumentation equipment, and training aids. The third is the Navy Air Missile Test Center, situated at Point Mugu, 60 miles north of Los Angeles. The Center's work consists of flight and laboratory testing and evaluation of guided missiles and their components.

Each of these establishments needs qualified personnel in a variety of scientific fields, and it has been announced that examinations are now open for professional positions as chemist, mathematician, metallurgist, meteorologist, physicist, statistician, scientific research administrator, and scientific staff assistant. Examinations are also open in various branches of the engineering profession. Salaries for most of the positions range from $3,397 to $9,975 per annum.

According to the Navy Department Joint Board of U. S. Civil Service Examiners, 1030 East Green Street, Pasadena 1, California, from which further information may be obtained, the work programs of these laboratories are planned and directed by an outstanding staff of civilian scientists, and liaison is maintained wth other research organizations, universities, and scientific associations.

U. S. entomologists will undoubtedly be interested to hear that Fritz Priefert, well-known German entomologist, has offered to send free of charge to individual entomologists, institutions, or societies who have possibly aided him during past years insects which he collects and prepares. Because he and his wife are now living in one small room, he does not wish to begin extensive collections for himself. His own entomological collections, consisting of some 40,000 specimens, were lost. Knowledge of Mr. Priefert's offer has come to us through E. O. Essig, chairman of the Division of Entomology and Parasitology, University of California Agricultural Experiment Station. In transmitting this information Dr. Essig states: "This is an unusually generous offer, and I am sure that many systematic entomologists in this country might be interested in accepting it . . . possibly Mr. Priefert is in need of things that would enable him to get some satisfaction in later years out of doing some more work in entomology. Since he has lost his collection, perhaps he would like to have some pamphlets and books, if not actually the necessities of life." The Prieferts are now living at 24 Stade, Kehdingermühren 6, Germany.

Make Plans for—

American Physical Society, 285th meeting, April 29–May 1, Washington, D. C.

Nebraska Academy of Sciences, 58th annual meeting, April 30–May 1, University of Nebraska, Lincoln.

New York State Geological Association, annual field conference, April 30–May 1, Hamilton College, Clinton, New York.

West Virginia Academy of Science, April 30–May 1, West Virginia School of Technology, Montgomery, West Virginia.

American Society for Clinical Investigation, May 3, Chalfonte-Haddon Hall, Atlantic City, New Jersey.

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AAAS

Centennial Celebration

Washington, D. C.

September 13–17, 1948

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