NEWS and Notes

Charles F. Kettering, a co-sponsor of the Sloan-Kettering Institute for Cancer Research since 1943, has been named the chairman of the 1949 fund-raising campaign of the American Cancer Society, for which a minimum goal of $14,500,000 has been set. The drive is scheduled for April.

Robert Fross Rinehart, director of the Planning Division of the Research and Development Board since last July, has been appointed executive secretary of the Board, to succeed **Lawrence R. Hafstad.**

Parker R. Beamer, Department of Pathology at Washington University Medical School, has been appointed professor of microbiology and immunology and associate professor of pathology at the Bowman Gray School of Medicine, Wake Forest College, effective July 1.

Leon Campbell, Pickering Memorial Astronomer at the Harvard College Observatory, was the guest of honor at a dinner held in Cambridge January 29 and attended by 125 of his colleagues. In recognition of his 50 years' service to astronomy, he was presented an illuminated scroll by Donald H. Menzel, associate director for solar research in the Observatory.

W. R. Hatch has been appointed chairman of the Division of Biological Sciences at the State College of Washington, Pullman. He is succeeded by **Noe Higinbotham** as chairman of the Department of Botany.

Jack R. Ewalt, director of the Galveston State Psychopathic Hospital of the University of Texas Medical Branch, has been made administrator of the Medical Branch Hospitals, succeeding **B. I. Burns,** who has become head of the Municipal Hospitals in Kansas City, Missouri.

Adriance S. Foster, professor of botany at the University of California, has returned to the Berkeley campus from a 6-month trip to South America with an extensive collection of tropical plants from the Amazon jungle. The object of his trip, for which he was awarded a Guggenheim fellowship, was to make a general study of the morphology and anatomy of certain groups of tropical plants. He was a guest investigator at the Instituto Agronomica do Norte in Brazil while working at Belém, near the mouth of the Amazon.

Vincent Salmon, former staff physicist for Jensen Manufacturing Company, Chicago, will head the sonics section of Stanford Research Institute's Physics Research Department. Dr. Salmon will continue his studies on industrial applications of high frequency sound and investigate the relationship of sonics to underwater and aerial acoustics.

Theodora L. Coolis, zoology teaching assistant at the University of Wisconsin for the past two years, was recently appointed biology instructor at Kalamazoo College, Michigan.

Paul F. Shope has been appointed associate professor in the Department of Botany and Plant Pathology of the Oklahoma Agricultural and Mechanical College.

John F. Fulton, Sterling professor of physiology at Yale University School of Medicine, will deliver the 6th Frank Billings Lecture at a joint meeting of the Institute of Medicine of Chicago and the Society of Medical History of Chicago on February 25. His subject, commemorating the centennial of the birth of William Osler, will be "Osler as a Humanist."

Henry P. Kalmus, formerly at Zenith Radio Corporation's research laboratory, has been appointed to the staff of the National Bureau of Standards. He will conduct investigations in advanced electronic techniques in the Bureau's Ordnance Research Laboratory.

Robert W. Wood, Johns Hopkins physicist, was made honorary Doctor of Science by Oxford University when he was in England last October.

Visitors to U. S.

Sir Harold Spencer Jones, Astronomer Royal of England, arrived Feb. 7 to begin a 3-month lecture tour of the U. S. His host is S. A. Mitchell, of the Leander McCormick Observatory, University of Virginia.

Godfrey S. Delatour, former staff member of the Universities of Berlin, Frankfort, and Paris, has been named visiting lecturer in the University of Illinois Department of Sociology and Anthropology. Prior to his recent appointment, Dr. Delatour lectured at Columbia University.

Colin White, formerly a lecturer at the University of Birmingham, England, recently accepted a 2-year appointment as assistant professor of physiology in the School of Medicine, University of Pennsylvania. Dr. White's appointment was made with a view to promoting the exchange of teaching and research ideas between the U. S. and other countries.

Grants and Awards

Great Britain's Royal Photographic Society has awarded its 1948 Progress Medal to Loyd A. Jones, head of Kodak Research Laboratories' physics department. Dr. Jones received the honor for his contributions to the use of photographic sensitometry in the manufacture and control of photographic materials. He will go to England in May to deliver the Hurter and Driffield Lecture before the Society.

The University of California at Berkeley has been granted $100,000 by the Rockefeller Foundation for equipping the new **Virus Laboratory** headed by Wendell Stanley, Nobel Laureate who recently joined the faculty. The funds will be available for the three-year period 1949–51. A $15,000 ultracentrifuge is already in use at the laboratory and an electron microscope will be added soon.

Applications for grants from the **Cyrus M. Warren Fund of the American Academy of Arts and Sciences** should be received by the chairman of the Committee, Frederick G. Keyes, Massachusetts Institute of Technology, not later than *April 30.* Grants are made in aid of chemical research—generally for apparatus or supplies, or for the construction of special facilities needed for research in chemistry or closely related fields. Be-

cause of limited resources, the amount to an individual is seldom more than $300. Application blanks may be obtained from the chairman.

The Robert Gould Research Foundation of Cincinnati has made a grant-in-aid of $5,000 to The Johns Hopkins University for research in 1949 by E. V. McCollum, professor emeritus of biochemistry, School of Hygiene and Public Health of the University. The fund will enable Dr. McCollum to continue his study of the chemistry of nutrition, particularly the problem of separating amino acids in pure form.

Fellowships

A fellowship in obstetric and gynecologic endocrinology is offered to qualified M.D.'s for work under A. E. Rakoff at the Jefferson Medical College and Hospital. Applicants for the fellowship, which will be available about May 1, 1949, should communicate immediately with Lewis C. Scheffey, Professor of Obstetrics and Gynecology, Head of Department, and Director of Division of Gynecology, Jefferson Medical College and Hospital, Philadelphia 7.

The New York State Department of Health is offering fellowships of $3,600 per year for the training of physicians to qualify for public health positions in the state. The training, for one year or more, is for health officers, tuberculosis physicians, clinical consultants, and laboratory directors. Further information and application forms are obtainable from Franklyn B. Amos, Director of the Office of Professional Training, New York State Health Department, Gov. Alfred E. Smith State Office Building, Albany 1.

Colleges and Universities

The University of Massachusetts has inaugurated an instruction and research program in physiological and chemical aspects of radioactivity. In connection with the safety program, Austin M. Brues, of the Argonne National Laboratory, recently lectured on "Biological Consequences of Radioactivity." The research program, which is aided by the National Research Council's Committee on Maternal Health, is already under way. It involves problems of radioactive phosphorus transfer in relation to sperm metabolism.

Members of the Johns Hopkins University faculty present a televised program each Friday night at 9:00 over the Columbia Broadcasting System network. The series, called "The Johns Hopkins Science Review," offers demonstrations of basic principles in various fields of science and illustrates work being done in the Hopkins research laboratories. The February programs are on insect repellents, art applied to medicine, the human heart, and supersonic flight. Televiewers are invited to send in topics which they would like to see presented.

Frontiers in Chemistry, the 8th annual lecture series of Western Reserve University will be held in Cleveland beginning March 4. The first group of 5 lectures on "Recent Advances in Physical and Inorganic Chemistry" will be given on successive Fridays March 4–April 1 in Room 27 of the Adelbert College Main Building. The second group of 5 lectures will also be held on Fridays—April 15–May 13. Each speaker will present two related lectures, one from 5:15 to 6:05 p.m. and the other from 7:45 to 8.35 p.m. Admission fee to each group of lectures is $10.00. Tickets for individual lectures will not be sold. Approximately 200 tickets are available for each group. They may be purchased at the lecture room on opening night or from the University Registrar, Western Reserve University, 11105 Euclid Avenue, Cleveland 6, Ohio.

Summer Programs

Purdue University announces its second annual Short Course for Mold Technicians to be held July 11–23 on the University campus. The course, under the direction of C. L. Porter, professor of botany, will include the study of mold manipulation and identification, and physiology of fungi. The fee will be $100, including supplies. Further information may be obtained by writing to M. M. McClure, Division of Technical Extension, Purdue University, Lafayette, Indiana.

The University of Pittsburgh Chemistry Department will give summer courses, June 7–August 20, in inorganic, analytical, organic, and physical chemistry, carrying 8 semester credits, the equivalent of a full year's work. If there is sufficient demand, a course in biochemistry may also be given. Students may register for the 4-week (one-semester) or for the 8-week (full-year) work. "The Chemical Elements and Their Compounds," a continuation of last summer's course on "Fundamentals of General Chemistry for Teachers," will be held June 27–August 6. This course carries 2 credits. For further information, write Alexander Silverman, Department of Chemistry, University of Pittsburgh, Pittsburgh 13, Pennsylvania.

Meetings and Elections

The Torrey Botanical Club recently elected the following officers for 1949: president, Edwin B. Matzke, Columbia University; 1st vice president, Charles A. Berger, Fordham University; 2nd vice president, Marion A. Johnson, Rutgers University; corresponding secretary, Jennie L. S. Simpson, Hunter College; recording secretary, Donald P. Rogers, New York Botanical Garden; treasurer, Elva Lawton, Hunter College; editor, Harold W. Rickett, New York Botanical Garden; business manager, Harold H. Clum, Hunter College.

The American Mathematical Society will hold its 443rd meeting on February 26 in the Pupin Physics Laboratory, Columbia University, New York City. The Society's 444th meeting will be held on the same date in Eckhart Hall, University of Chicago, Chicago. The 445th meeting will take place April 1–2 at Duke University, Durham, North Carolina.

An International Conference on Science Abstracting is being convened by Unesco, to meet at Unesco House in Paris June 20–25, 1949. A working paper for the conference is in preparation by Thérèse Grivet, making use of the analytical survey of abstracting services prepared for Unesco by the International Federation for Documentation at the Hague.

In addition to the voting representatives from the United Nations Member States, there will be repre-

sentatives from many international organizations having special interest in science documentation. Not only representatives of abstracting services but also working scientists, science librarians and documentalists will be invited. Observers are welcome.

The conference will receive and discuss a report on the present state of science abstracting, explore alternative abstracting techniques, and discuss such problems as language difficulties and means for improving the accessibility of publications (inter-library loans, photocopying, etc.). It will also make proposals for improving abstracting service through standardized bibliographies, terminology, and layout, and through greater cooperation among services by subject and language to effect economies and eliminate gaps.

Further information on the conference may be had by writing J. B. Reid, Program Specialist for Scientific Literature, Unesco, 19, Avenue Kléber, Paris 16.

Michigan State College will hold its annual **Dairy and Food Inspectors School** April 4–7. Those interested may obtain full details of the School and a copy of the program from W. L. Mallmann, Department of Bacteriology and Public Health, Michigan State College, East Lansing.

BAAS Meeting at Brighton

The 110th meeting of the British Association for the Advancement of Science, held in the southern England seaside town of Brighton in September last, was criticised by many as formless and lacking inspiration. There was some justification for this view when the inevitable comparisons were made with the highly successful previous year's meeting, held in the Scottish University town of Dundee, where there were 1,750 local members as against Brighton's 150, and where there was an exciting theme, "Swords into Ploughshares," whilst Brighton's meeting had none.

Yet there was a certain cohesiveness at Brighton, due entirely to the masterly presidential address of Sir Henry Tizard, F.R.S. The keynote of his words was the great need to increase industrial productivity, and many of the discussions in the various sections fitted into his lead.

Sir Henry spoke a day after Sir Stafford Cripps, the Chancellor of the Exchequer, had told the powerful Trades Union Congress that Britain needed to use more brain in tackling the problem of productivity. Without referring directly to that speech, Sir Henry (the key figure in Britain in the application of science to social needs, as he was then president of the British Association, and is now chairman of three Government bodies: the Advisory Council on Scientific Policy, the Industrial Productivity Committee, and the Defense Research Policy Committee) proclaimed what "more brain" could do.

Sir Henry made it clear that what was needed was not the general expansion of research—"certainly not the expansion of Government research remote from the everyday problems of industry"— but to apply what was already known. The productivity of labour was far lower than it could be if the results of past research were more resolutely and continuously applied. There was a need, he said, for well-trained management in industry, in which technical efficiency was the concern of engineers and technologists who had intimate contact at all levels with scientists responsible for research and development. In other words, scientific thought and influence should be present in the whole process from research to production and use.

This country needed also to maintain a high standard of teaching in the schools, or the next generation of scientists would suffer. In the long run—Sir Henry went on—the expansion of research would fail to produce the hoped-for result unless education in the higher branches of technology was promoted. Finally, he drew attention to the social problems of great complexity that had arisen from the development of preventive medicine. A growing world population was competing for limited supplies of food, and the numbers reaching the sixth and seventh decades of life was growing greatly. He believed that whatever new comforts and luxuries might be provided in future by the advance of physical science, it was on the development of the biological sciences that the peace and prosperity of the world would depend largely.

On the next day, in his presidential address to the Economics Section, Sir Hubert Henderson rebuked economists who were among "the most extravagant propagandists of go-easy illusions, the most pushing salemen enervating fools' paradises," for not appreciating the magnitude of the effort required by Britain to surmount her economic difficulties. In present conditions, he said, controls were useful and sometimes indispensable.

Another economist, Mr. S. R. Dennison, declared, however, that it was exaggeration to say that almost everything—the effects of the war years, the lack of incentive in inflation conditions, the effect of direct taxation on incentive, and the seller's market for labour, for example—except official exhortation, was directed towards encouraging a slow working pace. The chief cure, then, was to create conditions which encouraged increased effort. There were no simple formulae of technology or organisation which could take its place. The confusion of thought on productivity was, he believed, a factor contributing to the misdirection and waste of resources which were the distinguishing mark of the present situation.

The psychologists agreed that there was a need to create conditions which encouraged increased effort: but their approach was different from that of Mr. Dennison. "The dominating fact in this matter of incentives," said Mr. Nigel Balchin, "is that our old purely financial concepts are bankrupt, that in our world today the nature of incentives is nothing more than the nature of human motivation, that 'workers' are nothing less than the human race, and that 'work' is and must be nothing less than life. It is as simple as that and we cannot avoid the tremendous implications of that simplicity."

He was reinforced by Mr. Adam Curle, who believed we had "to consider the structure and orientation of society rather than specific goals whose impetus will not long outlast, in our adverse environment, their application." And by Professor C. A. Mace, who declared there was no very short-term policy which offered a promise of meeting the present demand for a

stronger "will to work." The foundation of a satisfactory incentive system lay in vocational guidance, vocational education, and the organization of a social and industrial order in which cooperation sprang from purposes genuinely shared by those who needed to cooperate.

The problem of productivity is not one that concerns industry alone. It is important also in agriculture: for, as Dr. G. Scott Robertson pointed out, the world is once more facing the problem of want with the passing of the period of plenty. The world's population is increasing by 20,000,000 per annum, and we are pledged to raise the standard of living of backward countries.

Although the situation was grave, Dr. Robertson was not pessimistic. "If a peaceful world were to set itself the task of applying the knowledge we already have in preventing soil wastage by erosion, in increasing production by irrigation, by the application of the exacting knowledge of plant breeding, by application of fertilisers, by the mechanisation of work on the land, not forgetting the electrification of the farm buildings and homes, and by developing rapidly the application of genetical science to the breeding of our farm animals the world over, it would, at a very conservative estimate, be possible to double and even treble our production of food in a relatively short time." The effective application of existing knowledge in Britain and the U.S.A. would raise agricultural output by at least 50 percent.

It was also necessary to cut down the gigantic losses due to the diseases of crops and stocks and the depredation of pests, and insects. Between harvest and consumption there is destroyed every year, by mites, pests and rodents, grain equivalent to all the food traveling into international trade —about 65,000,000 tons.

Sir John Russell, F.R.S., underlined these words by pointing out that while population was steadily increasing, the area of agricultural land was steadily diminishing. "We need a new type of agricultural research," he said, "corresponding to the operational research of large-scale industry. It will be necessary to study closely the methods of the best farmers (who hold more than half the total number of farms and nearly two-thirds of the land). A detailed study of these successful enterprises should show the principles underlying their success and open the way to some advance comparable with that from the three-field system to the Norfolk rotation."

Reports were given by two geneticists—Mr. Gordon Haskell and Mr. H. P. Donald—on inbreeding and hybrid vigour in crop improvement and livestock production. Inbred strains of corn hybridised together produced offspring showing increased vigour, such hybrids often surpassing both parental varieties in yielding capacity. In the U.S.A. 62,000,000 acres out of 90,000,000 under maize were sown with hybrid corn (or maize). The hybrid seed was being introduced into Europe, with good results. The same technique was being used for chickens, with great success.

Dr. Michael Graham described how mathematical theory was being applied to fishing, allowing the proper application of data of fishery research, so as to calculate the yield of a fishery under various rates of fishing and other conditions. One formula had been used with success to forecast certain catches for the past three years.

A grave warning was given by Professor J. D. Bernal, F.R.S., that the extremely rapid increase in the utilisation of materials of all kinds in industry and agriculture was beginning to be on such a scale that it affected the actual available supply of many of the elements and threatened to exhaust their most concentrated deposits in a matter of decades. He described how in an industrial system elements did not remain in any fixed place, but underwent a cycle in which they were combined in different ways with other elements, and where they were concentrated, dispersed, and again concentrated.

A careful examination was needed of every phase of the utilisation cycle in conjunction with that of the whole industrial process, with particular regard to the possibilities of research in making processes, especially the recovery process, economic. The most important new idea, essential to any effective utilisation of the elements, was that no element should be employed where its particular properties were not utilised to the full. One way of ensuring such economic use of elements was by the extension of functional specification to the widest number of cases, that is, not a specification for the use of a certain element, but a specification of the fabrication of a product with such and such physical or chemical properties.

Conservation of manpower was a feature of the discussion of the problems of old age. Describing the aged as "a new reservoir of productive power for the nation," Sir Ernest Rock Carling denied that there was any warrant for persons to retire at 60 or 65. This was dictated on sociological, and not on biological, grounds. The number of healthy and independent old people (6,000,000) completely overtopped the ailing, the sick, and the decrepit (200,000). The disabilities of age could be offset by intelligent adaptation: and at work the old showed less psychological weakness than the young, and were a good steadying factor. To help the individual in ill health, it was not drugs that were needed, but personal effort, bodily and mental activity, occupation, and interest.

Much attention was paid to the role of the colonies in helping Britain to meet her food problems. The geographer here made a special claim for full use of his abilities. "For our own good name," said Lord Rennell of Rodd, "the social geographer must be called in to play his very large part in adapting our changing conceptions of African administration, and in seeking to rationalize the mess which western European nations, including ourselves, have made in the African continent." Many other significant aspects of the Commonwealth were discussed—such as the problem of emigration from Britain and the urgent need for a colonial atlas.

There was much misgiving about the training of the scientist and of the young worker in industry. Professor John Reed, F.R.S., in a delightful paper on Specialisation and Culture in Chemistry, showed how bad were the consequences of specialisation. His words have a general application. "We ought at least to take what steps we can to combat the narrowing outlook which now threatens to affect science students at all levels," he said,

"and we ought particularly to bear in mind their social, cultural and spiritual needs." He ended with the words: "Ending as we began, upon an alchemical note, we realize that the microcosm of man has its roots and being in the macrocosm of the outer world, with which it is one. As Salomon Trismosin wrote in the heyday of alchemy:

> Study now whereof thou'rt part;
> So shalt thou see of what thou art;
> What thou studiest, learn'st and art,
> Of that it is thou formest part.
> All that is around without us
> Is eke within us. Amen."

On the needs of youth in industry, Mr. F. Bray was outspoken. "What is wanted at the moment," he declared, "is better accommodation, more up-to-date equipment, more good teachers, good libraries, and good social amenities—indeed all those things which encourage students to make themselves efficient workers and good citizens."

In reviewing this meeting for "The Times" of London, I concluded: "All in all, in spite of the proper absence of a single set theme at the Brighton meeting, it has been made clear that workers in nearly every field of the advancement of science have been turning attention, like Sir Henry Tizard, to the contribution which they can make to remedying the world's material troubles. Yet, at the same time, it has been made equally clear that science goes forward, as it must always go forward, in pursuit of the truth wherever it may lead, and among the chief memories of the Brighton Conference will be such notable events as Sir Lawrence Bragg's classic presidential address to the mathematics and physics section on Recent Advances in the Study of the Crystalline State.

This year the British Association is to hold its meeting in Newcastle, in the North Country. The president is Sir John Russell; and the presidents of the various sections are: Sir Harold Spencer Jones (Physics and Mathematics), Sir Alfred Egerton (Chemistry), Professor W. J. Pugh (Geology), Professor A. C. Hardy (Zoology), Professor L. Dudley Stamp (Geography), Sir Alexander Gray (Economics), Sir Arthur Fleming (Engineering), Mr. M. C. Burkitt (Anthropology and Archaeology), Professor R. A. Peters (Physiology), Professor G. H. Thomson (Psychology), Professor Lily Newton (Botany), Sir F. Clarke (Education), Professor N. M. Comber (Agriculture).

MAURICE GOLDSMITH

Deaths

W. D. MacMillan, 77, professor emeritus of astronomy and mathematics, University of Chicago, died November 14.

W. S. Hall, 87, professor emeritus of mathematics at Lafayette College and charter member of the Mathematical Association of America, died December 17.

Vincent H. Morris, 50, chemist-in-charge of the Federal Soft Wheat Laboratory at the Ohio Agricultural Experiment Station, Wooster, died January 17 at Wooster, Ohio.

John E. Weeks, 95, author and professor emeritus of ophthalmology at New York University, died February 2 while vacationing in La Jolla, California. Co-discoverer with Robert Koch of the Koch-Weeks bacillus, Dr. Weeks received the Ophthalmological Research Medal of the American Medical Association in 1929.

Rudolf Samuel, 52, author and professor of physical chemistry at the Haifa Technical College, died in Tel Aviv February 3.

Hans Wollenweber, 69, German plant pathologist, died February 3 in Washington, D. C. Dr. Wollenweber, who had worked in the U. S. Department of Agriculture for several years, came to the U. S. last fall, planning to become an American citizen and continue his research work here.

Henry V. Gummere, 78, emeritus lecturer in astronomy at Haverford College, died February 9 at his Philadelphia home.

A joint U. S.—Australian expedition, sponsored by the National Geographic Society, the Smithsonian Institution, and the Commonwealth of Australia, has recently returned from Arnhem Land, the Stone Age country of northern Australia. The naturalists spent 8 months there (see *Science,* February 20, 1948, p. 190) and brought back a collection of more than 10,000 fish, 350 birds, and 460 mammals—some of them previously undescribed. They also learned much about the customs and relics of the natives. One of the most significant archeological discoveries of the expedition was the complete Stone Age hatchet unearthed by Frank M. Setzler, Smithsonian anthropologist. Countless pieces of chipped quartzite, shaped to a cutting edge, had been found previously in many parts of eastern Australia, as well as Arnhem Land. The discovery of the hatchet—one of the scrapers attached by cement to a handle—established conclusively the use of this tool by the early Australian aborigines.

A new laboratory for studying range-finder performance has been established at the National Bureau of Standards with the cooperation of the Army Ordnance Department. It is under the direction of I. C. Gardner and is equipped with a temperature-controlled test chamber and an optical range finder that simulates a target for eight different ranges under conditions corresponding to a wide range of climate. The new laboratory permits a systematic analysis of the various components of the error of a given range finder and has thus been useful in suggesting improvements in design.

The Naval Ordnance Laboratory's new central unit at White Oak, Maryland, was recently dedicated and is now an integral part of the $35,000,000 project for research in modern armament. Begun during the war, the Laboratory now utilizes 60-odd permanent buildings as well as 34 temporary structures, and has 9 more permanent buildings under construction.

The AAAS Membership Office, 1515 Massachusetts Avenue, NW, Washington 5, D. C., will appreciate any information concerning the present addresses of the following people, all life members, whose names and last known addresses are as follows: A. W. Elliott, New York City; Mary L. Jackson, Pittsburgh; Fred I. Lackenbach, San Francisco; J. D. Marmor, New York City; Shigeo Yamanouchi, University of Chicago.