News and Notes

Work of the UNESCO Advisory Committee on Arid Zone Research

Another step in the promotion of collaboration among scientists dealing with problems of the world's arid zones was taken at the Seventh Session of the Advisory Committee on Arid Zone Research in Paris on 4–7 May. The arid zones, if defined as land areas with a deficit in the moisture index exceeding 20, according to the Thornthwaite classification [*Geograph. Rev.* 38, 55 (1948)], comprise somewhat more than one-quarter of the earth's land area. Although sparsely populated over great expanses, they also include several densely populated irrigated valleys, such as the Nile and the Tigris-Euphrates, and the sites of many other, now abandoned, desert settlements. Because the natural environment of these areas has much in common and because the means of maintaining or extending their stable human use are still uncertain, large advantage is likely to be gained from furthering the exchange of research methods and findings of scientists and engineers now at work in them.

UNESCO established the Advisory Committee in 1950 to advise on framing and carrying out a program for stimulating research on the problems of those zones. It is composed of one member each from nine nations, the terms of members running 2 yr and rotating among interested nations. Present membership includes a botanist from Italy, a geographer from Turkey, an irrigation engineer from Syria, a physicist from Mexico, an electrical engineer from India, a soil microbiologist from the United Kingdom, an agronomist from Australia, and the writer. The membership from France is vacant because of death. Representatives of various international scientific groups and of the Food and Agriculture Organization, the World Health Organization, and the World Meteorological Organization took part in the recent sessions.

The program tries in six different ways to help research workers cut across national boundaries: (i) reports on common problems, such as ground-water hydrology, are commissioned from scientists in various parts of the arid zones and published in a single volume; (ii) international symposia on such problems are sponsored jointly with an interested national group in alternate years; (iii) financial support is given in the other years to symposia sponsored by national groups; (iv) a list of arid zone research institutions is published with the assistance of the interested governments; (v) international scientific cooperation is enlisted in preparing suggestions for methods of field study; and (vi) small grants are made in support of especially meritorious research projects having international significance. [For details, see J. Swarbrick, *Impact of Sci. on Soc.* 4, 221 (1953)].

The range of work so far sponsored is indicated by the subjects of publications already released or in press. These books, which may be purchased in the United States through the Columbia University Press, New York 27, include *Reviews of Research on Arid Zone Hydrology, Reviews of Research on Problems of Saline Water, Reviews of Research on Arid Zone Plant Ecology* (in press), and *Proceedings of the Montpellier Symposium on Arid Zone Plant Ecology* (in press).

At the recent session plans were reviewed for a series of papers to be prepared during the next year on problems of animal and human ecology. Plans also were reported for a symposium on "Wind and solar energy in the arid zones" to be held in Oct. 1954 in New Delhi, with the joint sponsorship of the Government of India. It is hoped that this symposium may direct attention to the most promising ways of economically harnessing these energy sources. In a country such as India where the search for fuel causes the destruction of watershed vegetation and the burning of potential fertilizers, a partial solution of the problem would have tremendous implications for use of natural resources.

Financial aid was recommended to pay the travel expenses of a few foreign scientists to attend a symposium and conference to be held by the AAAS in New Mexico on 27–28 Apr. 1955, on the occasion of the annual meeting of the Southwest Section of the Association [*Science* **119**, 869 (18 June 1954)].

There was preliminary discussion of ways in which experience might be pooled with respect to the cheapest and most effective means of making integrated field surveys of resources in arid regions. With the exception of reconnaissance studies in Australia and more elaborate studies in the United States, there is not a great deal of experience in relating the work of scientists in several disciplines in a unified survey. This will come up again at the next session.

No recommendations were made for support of major new research projects, although some attention was given to questions of the occurrence and collection of dew and to ecological studies in the Rasjasthan desert of India.

The Committee is experimenting in ways of promoting genuinely creative and imaginative approaches to the scientific problems of the arid zones. Suggestions from scientists on specific problems deserving attention or on other methods of fostering collaboration will be welcome.

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Science News

With the present issue, ***Science*** begins its 120th volume. In the volume just completed—the 119th, January–June 1954—there appeared 958 pages of text and editorial material, exclusive of advertising pages, this being the largest number for any volume of the last decade. It exceeds by more than 100 pages the next largest volume in this 10-yr period; and by more than 375 pages, the smallest volume.

Arrangements for four additional special studies to be conducted by federal and private survey groups as part of the broad **National Science Foundation survey of science** in the United States have been announced. The new projects are described below.

Survey of industrial research and development. The planning phase of this study will be conducted by the Bureau of Labor Statistics, U.S. Department of Labor, in close cooperation with the staff of the NSF and under the direction of a steering committee composed of staff members of the two agencies. It will include a review of previous studies and development of questionnaire and interview forms for getting additional desired information on industrial research. The questionnaire will be pre-tested with the aid of a selected list of firms in various industrial fields.

The ultimate scope of the study will be to develop data on research personnel, capital investment in research facilities, and the relationship of research expenditures to corporate sales and invested capital. Also, information will be sought on how companies determine the size of research programs, how they appraise the return on research, and the effect of taxes and other government policies on industrial research.

Survey of research by state governments. This study will be done in two parts: (i) by the Bureau of the Census, U.S. Department of Commerce, and (ii) by the Institute for Research in Social Science, University of North Carolina. The Census Bureau plans to analyze the pertinent information already available in its files and supplement the results with additional investigations in one state. From this exploratory study the Bureau expects to construct a suitable pattern of investigation for studying state-financed and controlled research throughout the country. The Institute at North Carolina will participate in the analysis of the experience of the Census Bureau and will conduct the follow-up investigations in other states. Information will be gathered on research costs, manpower, administration, and research content of state-supported programs.

Survey of research by trade associations and similar organizations. This study will be conducted by the Battelle Memorial Institute, Columbus, Ohio. There are approximately 16,000 trade associations in the United States, and it is believed 200 to 400 of these conduct or support research programs in the physical and biological sciences. A somewhat larger number have research programs in economics and other social science fields. In addition, the study will include certain professional societies that conduct research programs, largely supported by industry, and other types of cooperative industrial research organizations.

Survey of research at nonprofit institutes and commercial laboratories. This study will be conducted by the Maxwell Research Center at Syracuse University. It will explore the research programs of the 50 to 100 independent nonprofit research institutes and the estimated 250 to 400 commercial research laboratories in the United States. In many instances these organizations are concerned with research of interest to industry, but they differ from industrial laboratories in that their principal business is research, with manufacturing, if any, secondary to research.

In addition to these special surveys, the staff of the Foundation is now conducting two major studies of research supported or sponsored by the Federal Government and by American universities and colleges. The Foundation's broad survey of the current status of science and research in the United States will cover all types of organizations conducting, supporting, or sponsoring research in this country. It will include all branches of physical and biological science, including medicine, as well as certain areas of the social sciences. Information will be collected primarily on current activities, but some historical information will be gathered extending back to 1925.

The broad survey will provide the background information on research trends that is needed by many groups in the development of effective national science policies and for the promotion of research and education in the sciences. The Foundation is making such studies pursuant to the national Science Foundation Act of 1950, highlighted by the recent Executive Order issued by President Eisenhower on 17 Mar. 1954. The completion date for the survey has been tentatively set for the end of 1955. Interim reports will be issued as parts of the general survey are completed. A summary report will be published at the completion of the survey.

A preliminary report of a **new test for uterine and cervical cancer** was made to the Chicago Gynecological Society by S. A. F. Lash and Ralph W. Gerard of the University of Illinois, and G. Falk of the University of Chicago. The test, a simple one, involves measuring the electric potential difference between the inside and outside of single cells cast off from the vaginal tract. The measuring technique is one that Dr. Gerard has used for many years in his basic research in nerve physiology.

The positive and negative readings, when properly interpreted, were found to reveal whether the patient had cancer of the uterus or of the cervix. In the first series of 57 cases, the test indicated that 20 of the women had cancer; 18 of these latter were proved to have cancer, and two really did not. The test showed that 35 women did not have cancer, and it was right in every case. In further trials, there has never been a false negative test, and the positives were about 94 percent correct. It is hoped that the new method will make earlier diagnosis possible. However, the report stresses that the test is purely in the research stage; it will not be known for at least a year whether it will be worth using clinically.

An accelerated program to study all aspects of the **radiation sterilization of foods** is being undertaken by the Army Quartermaster Corps for the benefit of the Armed Forces. The 5-yr program will have the active participation of the Atomic Energy Commission, elements of the Armed Forces, and other governmental

agencies as well as four educational and industrial institutions. The long-range objective is to learn whether or not irradiation may be substituted for present food preservative treatments by heat, chemicals, and other processes without detracting from the natural odor, color, flavor, and texture of the foods. Should the investigations prove successful, the results may be radical changes in the packaging and processing of many foods, decreasing the use of refrigeration and extending storage life.

Basic research already has been accomplished by the Army Quartermaster Corps as well as by the U.S. Navy, the AEC, the Department of Agriculture, and numerous industrial and educational laboratories. As a result of this expanded program to be coordinated by the Army Quartermaster Corps, the AEC has announced it will discontinue its individual research program in the food technology aspects of this field.

The National Research Council has appointed a special Advisory Committee to the Quartermaster Corps on Radiation Sterilization to assist the program. The committee includes: Joseph Butts, AEC; L. V. Clifcorn, Continental Can, Inc.; Gail Dack, University of Chicago; Glen King, Nutrition Research Foundation; H. S. Mitchell, Swift and Co.; and Bernard Proctor, Massachusetts Institute of Technology.

High-speed photography can be used to solve problems of **improper dynamic reactions** in design of springs, according to an article by John H. Waddell in the May issue of *Mechanical Engineering*. High-speed photography, he said, has shown the way to simple corrections in such operations as engine valve lifters and electrical relays. Stroboscopic studies, in many instances, will not work.

A new approach to **Gulf Stream investigations** was initiated on 9 June by the Woods Hole Oceanographic Institution with the sailing of the 142-ft research vessel *Atlantis* and the departure of an amphibious airplane on loan from the U.S. Navy. While the *Atlantis* worked her way toward Cape Hatteras, where the Gulf Stream first was crossed, the PBY, manned by a civilian crew and scientists, made an aerial survey of the location and path of the Gulf Stream from a point due south of Cape Cod to Cape Hatteras. The meandering position of the current was reported by radio to the ship for her guidance.

On board the plane William S. Richardson, chief scientist, used a radiation thermometer to find the inshore edge of the current. This device measures the surface temperature of the ocean by registering the incoming infrared radiation and comparing it with the radiation from a water sample in the plane that could be heated or cooled.

On board the *Atlantis,* Willem V. R. Malkus, chief scientist, allowed the vessel to drift with the main body of the Gulf Stream. Constant maneuvering was necessary to keep the ship, which moved approximately 100 mi per day for 8 days, in the swiftest flowing part of the current.

Field tests were made of a new instrument that was designed at Woods Hole. Called a Bathypitotmeter, this device measures the current at various depths below the surface. It is of importance to oceanographers to find the speed and direction of subsurface water in the Gulf Stream, and no satisfactory instrument for such measurements has been available in the past. Though observations have been made from anchored ships, this is a difficult and time consuming operation.

Thorne Deuel, director of the Illinois State Museum, has announced that a rock shelter which was occupied by prehistoric Indians nearly 11,000 yr ago has been found about 40 mi south of St. Louis, Mo. This is believed to be the **oldest dated Indian home east of the Mississippi.** The ancient site was unearthed by highway maintenance crews.

The age was determined by carbon 14 tests on charcoal samples taken at a depth of 26 ft. Willard Libby of the Institute of Nuclear Studies, University of Chicago, determined the date of the lowest level to be 8697 B.C. ± 650 yr. Other dates determined were 6592 B.C. for samples found at 22 ft and 4001 B.C. at the 16-ft level. Frederick R. Matson of Pennsylvania State University, representing the Wenner-Gren Foundation of New York City, collected the samples. The excavation, sponsored by the Illinois State Museum, the Illinois State Museum Society, the University of Chicago and the Wenner-Gren Foundation, was carried on in 1952 and 1953.

Karl T. Compton, one of this country's most eminent scientists and a key figure in the development of the atomic bomb, died on 22 June. Chairman of the corporation of Massachusetts Institute of Technology since 1949, he was that organization's president for 18 yr. Dr. Compton served on the Executive Committee of the AAAS from 1929 to 1940 and was the Association's president in 1935.

Scientists in the News

George H. Berryman has been appointed head of the department of clinical investigation at Abbott Laboratories. He joined the department in 1951.

George L. Buc, formerly of the Tidewater Oil Co., has accepted appointment as technical assistant to the president of Fisher Scientific Co. Dr. Buc will continue as editor of the journal *Applied Spectroscopy.*

H. R. Gault is returning to Lehigh University as professor of geology after having spent a year's leave of absence as executive secretary of the Division of Earth Sciences, National Research Council. He will continue his work on carbonate rocks and basic rock alteration.

John T. Goodwin, Jr., formerly a production and development chemist in the silicones products department of the General Electric Co. in Waterford, N.Y., has been appointed manager of the chemistry research

division of the Midwest Research Institute, Kansas City.

George H. Hepting of the Southeastern Forest Experiment Station of the U.S. Forest Service, recently received a silver medal for his superior service in forest pathology. He directs the tree-disease research program at six field laboratories in the southern states; he has been with U.S. Department of Agriculture since 1926. Outstanding accomplishments by Dr. Hepting and his Division of Forest Disease Investigations include: discovery of a new pine rust; determination of the cause of serious wilts of sugar maple and mimosa; discovery and development of a strain of wilt-resistant mimosa; determination of methods for avoiding butt rot in sprout oak stands; relation of the littleleaf disease of shortleaf pine to nitrogen supply, carbohydrate production, soil permeability, and *Phytophthora* killing of rootlets; determination of soil types on which pine can be grown without loss from littleleaf; demonstration of control of oak-leaf blister by dormant sprays; and recognition of *Fusarium lateritium* f. *pini* which stimulates gum flow from Virginia pine. His division also has done important work on oak wilt in the Appalachians and on correcting decay conditions in wooden trainer planes and gliders and in wooden Naval vessels.

Details of a detonator widely used for sabotage during World War II recently have been revealed with the announcement that physicist **A. J. G. Langley** has been given a cash award by the British Royal Commission on Awards to Inventors. The miniature "time pencil" detonator invented by Mr. Langley, who conducted research for the British Navy throughout the war, was made by the millions. Since the war, Mr. Langley has been director of scientific intelligence for Canada's Defense Research Board; he is now executive assistant to the general manager of Computing Devices of Canada Ltd., Ottawa.

C. M. Louttit, assistant to the provost and professor of psychology at the University of Illinois, has resigned to accept the chairmanship of the department of psychology at Wayne University, effective in September.

Basil W. Parker, professor of biology at Lehigh University, became head of the department of biology on 1 July. He succeeds **Stanley J. Thomas** who will continue as professor of biology.

Cash Blair Pollard, professor of chemistry in the University of Florida and consulting toxicologist, has won the 1954 Florida Section award of the American Chemical Society. The award is conferred annually for outstanding contributions to chemistry by a chemist or chemical engineer of the southern states. Dr. Pollard is widely recognized for his research on quinine, infant deafness, and snake venoms, and also as an expert witness in legal cases involving the scientific investigation of crime.

Edwin A. Popenoe, formerly of the Cornell University Medical College, New York, has joined the biochemistry division of the medical department at Brookhaven National Laboratory. At Cornell, Dr. Popenoe was a member of the group headed by Vincent du Vigneaud that was first to work out the structure of the peptide hormone vasopressin.

Two scientists are among those retiring at Mt. Holyoke College this year. **Mary Lura Sherril,** professor of chemistry and chairman of the department, withdraws from service after having been on the faculty since 1921. In 1947 she received the American Chemical Society's Garvan Medal for achievement in research and teaching. **Edith Barstow,** assistant director of the chemistry laboratories is also retiring. She first joined the college staff in 1911.

The following are among those who have recently received **honorary doctoral degrees.**

Philadelphia College of Pharmacy and Science: **Ralph A. Connor,** vice president in charge of research, Rohm and Haas Co.; **Ernest Volwiler,** president of Abbott Laboratories.

University of Chicago: **Peyton Rous,** Rockefeller Institute for Medical Research; **Joel Stebbins,** professor emeritus of astronomy, University of Wisconsin.

Union College: **Edwin L. Crosby,** executive director of the American Hospital Association.

Stevens Institute of Technology: **Edward L. Cochrane,** vice president of Massachusetts Institute of Technology; **Morse G. Dial,** president of Union Carbide and Carbon Corp.; **Daniel Mapes,** vice president of Walter Kidde and Co.; **Benjamin J. Lucarelli,** president of the B. J. Lucarelli Co., Inc.

Lehigh University: **Monroe J. Rathbone,** president of Standard Oil Co. of New Jersey; **Karl Terzaghi,** professor of the practice of civil engineering, Harvard University.

Ohio State University: **Edwin Sharp Burdell,** president of the Cooper Union; **Jack A. Morton,** director of transistor development, Bell Telephone Laboratories.

North Carolina State College: **Walter J. Damtoft,** vice president, Champion Paper and Fibre Co.; **J. W. Turrentine,** president emeritus, American Potash Institute.

University of Toledo: **Robert B. Sosman,** professor of ceramics at Rutgers University; **Frederick H. Norton,** professor of ceramics at Massachusetts Institute of Technology.

Beloit College: **Carey Croneis** former president of Beloit College and professor of geology at Rice Institute.

Howard College: **P. R. Bell,** head of the electronics group in the physics division of Oak Ridge National Laboratory.

Albany Medical College of Union University: **Robert A. Moore,** vice chancellor of the Schools of Health Professions of the University of Pittsburgh and professor of pathology.

Rutgers University: **Oswald T. Avery,** retired member of the Rockefeller Institute for Medical Research;

George W. Beadle, chairman of Division of Biology at California Institute of Technology and president-elect of the AAAS; **Robert E. Buchanan,** retired director of the Agricultural Experiment Station and dean of the Graduate College at Iowa State College; **Albert Jan Kluyver,** professor of microbiology, Technical University, Delft, The Netherlands; **Richard E. Shope,** Department of Animal Pathology, Rockefeller Institute for Medical Research; **Jacques Trefouel,** director of the Pasteur Institute in Paris; **Cornelius B. Van Niel,** professor of biology at Stanford University and president of the Society of American Bacteriologists; **Hans Karl Von Euler-Chelpin,** professor of general and organic chemistry, University of Stockholm.

Springfield College: **Norman L. Munn,** professor of psychology, Bowdoin College.

Meetings

The **American Meteorological Society** will hold its 130th meeting, 24–25 Aug., at Rochester, New York. The emphasis will be on agricultural and industrial meteorology. Those having papers to present should immediately contact Mr. Alfred Stiller, 48 Berkshire St., Rochester, N.Y.

The 131st national meeting of the AMS will take place at Columbus, Ohio, on 8–10 Sept. In addition to one or more general sessions, special sessions on atmospheric pollution, bioclimatology, climate in relation to building and city planning, and meteorological education are being planned. For information write to Prof. Nelson Dingle, Department of Physics and Astronomy, The Ohio State University, Columbus 10.

In the near future the **American Oil Chemists' Society** will sponsor two events of interest to the oil and fat industry: the sixth short course, to be held at Lehigh University, 15–20 Aug., on "Inedible fats and fatty acids," with Daniel Swern of Eastern Regional Research Laboratory, Philadelphia, as chairman; and the 28th annual fall meeting, to be held in Minneapolis, 11–13 Oct., with J. C. Konen of Archer-Daniels-Midland Co. as chairman.

The jubilee conference of the **Association of Applied Biologists** will be held at Imperial College, South Kensington, London, 13–15 Sept. followed by visits to research stations on 16 and 17 Sept. In the course of a program of symposia and lectures covering most of the subjects with which the Association has been concerned, many prominent biologists from Britain and overseas will review the past achievements of applied biology and discuss its present trends and future potentialities. For information write to R. K. S. Wood, general secretary, Botany Department, Imperial College, London, S.W. 7.

The life and accomplishments of the late **Edwin Bret Hart** received recognition at the annual meeting of the Institute of Food Technologists held in Los Angeles 29 June. Prof. Hart died in 1953. He had retired from the chairmanship of the University of Wisconsin department of biochemistry in 1944 after 38 yr of teaching and research. He was a pioneer in the development of the science of nutrition, and it was under his direction that vitamin A was discovered and its function established. He also contributed to knowledge of the B vitamins.

At the meeting a panel of five scientists and former students of Hart spoke on his work, and the name of the Babcock award for work in food technology was officially changed to bear the names of both Hart and of Stephen Moulton Babcock, Wisconsin scientists who devised the butterfat test for milk and who conducted pioneer investigations in the field of biochemistry.

Former students of Prof. Hart who participated in the program were H. T. Scott of the Wisconsin Alumni Research Foundation; Conrad A. Elvehjem, chairman of the University of Wisconsin biochemistry department and dean of the UW Graduate School; S. Lepkovsky of the University of California; E. M. Nelson of the Food and Drug Administration, Washington, D.C.; and K. G. Weckel, professor in the UW department of dairy and food industries. L. E. Clifcorn of the Continental Can Company, Chicago, served as chairman of the panel.

Fisk University is sponsoring its 5th annual **Infrared Spectroscopy Institute** from 30 Aug. to 3 Sept. These institutes are planned to introduce chemists, biologists, physicists, and engineers to the usefulness of infrared spectroscopy in research and in teaching. This summer particular emphasis will be placed on the application of infrared and Raman spectroscopy to problems of industrial research.

Morning sessions will be devoted to introductory lectures, evenings to lectures on more advanced topics, and afternoons to laboratory work. A feature of the week's study will be a panel discussion on the merits of the different spectrometers now commercially available. Laboratory facilities will include a variety of single-beam and double-beam spectrometers of both instructional and commercial design. Instruments for the "overtone" region (1 to 3 μ) as well as the "rock-salt" region (3 to 15 μ) will be available.

The faculty will include Walter Brown, TVA Research Laboratories, Wilson Dam, Alabama; Ivar Cooke, University of Geneva, Switzerland, now at Fisk; Nelson Fuson, Fisk University; Ernest A. Jones, Vanderbilt University; Wilbur Kaye, Tennessee Eastman Research Laboratory; and James R. Lawson, Tennessee A and I State University. For further information write to Prof. Nelson Fuson, Fisk University, Nashville, Tenn.

The **Luminescence of Biological Systems** was the subject of a recent conference arranged by the National Research Council's Committee on Photobiology, with the support of the National Science Foundation. A limited number of investigators representing various avenues of approach, from the purely physical to the purely biological, met near Pacific Grove, Calif., to examine both comprehensively and in detail our present knowledge and future problems in this field.

The following topics, in particular, were presented and critically discussed: "A survey of luminous organisms: problems and prospects" by E. Newton Harvey; "Luminescence spectroscopy of molecules and the photosynthetic system" by Ralph S. Becker and Michael Kasha; "On the light saturation of delayed light production in green plants" by William Arnold; "Fluorescence of photosynthetic pigments" by C. Stacy French; "Spectroscopic investigations of luminescent systems" by C. J. P. Spruit and A. van der Burg (Holland); "Recent studies on the chemistry of Cypridina luciferin" by F. I. Tsuji, Aurin M. Chase, and E. Newton Harvey; "Biochemistry of firefly luminescence" by Wm. D. McElroy and J. Woodland Hastings; "Firefly luciferin" by Bernard L. Strehler; "Factors and biochemistry of bacterial luminescence" by Bernard L. Strehler; "Purification and properties of bacterial luciferase" by J. Woodland Hastings and Wm. D. McElroy; "Inhibition and activation of intracellular luminescence" by Frank H. Johnson; "Physiological control of luminescence in animals" by J. A. C. Nicol; "Some reflections on the control of bioluminescence" by John Buck; "Luminous organisms of Japan and the Far East" by Yata Haneda and Yokosuka Museum (Japan); "The ecology of autotrophic marine dinoflagellates, with reference to red water conditions" by John H. Ryther; "Bioluminescence in Gonyaulax polyhedra" by Francis Haxo and Beatrice Sweeney.

Additional data were contributed in further discussions by these authors and by other members of the conference, including Rubert Anderson, E. R. Baylor, Lawrence Blinks, Demorest Davenport, L. M. V. Duysens, Arthur Giese, Walter J. Kauzmann, Howard S. Mason, C. B. van Niel, E. J. Ferguson Wood (Australia), and C. E. ZoBell.

The papers on the afore-mentioned topics, along with the chief discussions, will be published by the AAAS as a Symposium Volume under the editorship of F. H. Johnson.

Technical, business, scientific, and industrial photographers throughout the country are invited to submit prints for the annual technical exhibit of the Photographic Society of America's technical division. The exhibit—the **10th Open Exhibit of Technical Photography** sponsored by the PSA—will be shown as a part of the 1954 PSA International Exhibition of Photography to be held in Chicago, 5–9 Oct. *Closing date for entries is 15 Aug.* Entry forms and additional data may be obtained by writing to Donald B. Grim, Exhibits Director, 31 Eglantine Rd., Rochester, N.Y.

The 31st **Plant Science Seminar** will take place at the University of Connecticut, 18–21 Aug. For details write to Dr. A. E. Schwarting, University of Connecticut College of Pharmacy, Storrs, Conn.

The National Science Foundation has awarded Harvard University a grant to permit the holding of a seminar on **"Problems in comparative behavior,"** from 5–16 July. The primary purpose of the conference will be to permit European zoologists to exchange information with biologists and psychologists in this country. Visitors from abroad are expected to be Prof. van Iersel of Leiden University, The Netherlands; G. P. Baerends of Groningen University, The Netherlands; and Robert A. Hinde of Cambridge University, England. The conference is being organized by William S. Verplanck of the psychology department.

The annual meeting of the **Society of General Physiologists** will be held at the Marine Biological Laboratory, Woods Hole, Mass., on 8–9 Sept. A symposium on "Electrolytes in biological systems," dedicated to W. J. V. Osterhout and M. H. Jacobs, has been organized by A. M. Shanes. Included among the speakers are Dean Cowie, Richard Roberts, George Scott, Aser Rothstein, Gilbert Mudge, Daniel Tosteson, Abraham Shanes and Ernst Huf. The second day of the meeting will be devoted to contributed papers, of which 16 are scheduled. Anyone desiring accommodations in the MBL dormitories for the period of the meetings should make reservations well in advance through Homer P. Smith, business manager of the Laboratory. Further information on the program may be obtained from the secretary, John Buck, National Institutes of Health, Bethesda, Md.

The Society will also hold a sectional meeting on 30 Dec. in connection with the meetings of the Western Society of Naturalists and the AAAS in Berkeley. Albert Tyler of California Institute of Technology is in charge of arrangements.

Society Elections

New officers of the **American Economic Association** are pres., Simon Kuznets, University of Pennsylvania; sec.-treas., James Washington Bell, Northwestern University. The vice presidents are Roy Blough, United Nations, and Arthur Smithies, Harvard University.

The **American Educational Research Association** has elected the following officers: pres. H. H. Remmers, Purdue University; v. pres., Francis G. Cornell, University of Illinois; sec.-treas., Frank W. Hubbard, NEA Research Division.

Current officers of the **American Physical Society** are pres., H. A. Bethe, Cornell University; v. pres., R. T. Birge, University of California; treas., G. B. Pegram, Columbia University; sec., K. K. Darrow, Columbia University.

Officers of the **American Psychoanalytic Association** are: pres., Ives Hendrick; pres.-elect, Maxwell Gitelson; sec., Richard L. Frank; treas., Robert T. Morse.

The **American Society for Testing Materials** has elected the following officers: pres., Norman L. Mochel, Westinghouse Electric Corp., Philadelphia; v. pres., Rudolph A. Schatzel, Rome Cable Corp., Rome, N.Y.

The **American Society of Animal Production** has elected the following officers: pres., A. E. Darlow,

Oklahoma A & M College; v. pres. J. I. Miller, Cornell University; sec.-treas., W. M. Beeson, Purdue University.

Officers of the **American Society of Photogrammetry** for 1954 are: pres., Arthur C. Lundahl; 1st v. pres., W. Sidney Park; 2nd v. pres., Robert N. Colwell; sec.-treas., C. Earl Palmer.

The **Illinois State Academy of Science** has elected these officers for 1954–55: pres. Garrett W. Thiessen, Monmouth College; 1st v. pres., Leland Shanor, University of Illinois; 2nd v. pres., Annemarie Krause, Southern Illinois University; sec., Lyle E. Bamber, University of Illinois; treas., Walter B. Welch, Southern Illinois University. The representative to the AAAS Council is Percival Robertson, The Principia.

The **Institute of Mathematical Statistics** has elected the following officers: pres. E. G. Olds; pres.-elect, Henry Scheffé; sec.-treas., K. J. Arnold.

The **Institute of Physics,** 47, Belgrave Sq., London, S.W. 1, has elected the following officers: pres., Sir John Cockroft; v. pres., G. R. Noakes.

New officers of the **Minnesota Academy of Science** are: pres., L. A. Ford, State Teacher's College, Mankato; v. pres., William H. Marshall, Institute of Agriculture, St. Paul; sec.-treas., Blanchard O. Krogstad, St. Olaf College, Northfield.

The **Ohio Academy of Science** has elected the following officers: pres., Rush Elliott, Ohio University; sec., R. W. Dexter, Kent State University; treas., R. M. Geist, Capital University.

Officers of the **Society for Experimental Stress Analysis** are: pres., Marshall Holt, Aluminum Co. of America; sec.-treas., W. M. Murray, Massachusetts Institute of Technology. The vice presidents are S. S. Manson, National Advisory Committee for Aeronautics, and M. M. Leven, Westinghouse Electric Corp.

Education

A new curriculum designed to prepare men for careers in the distribution areas of modern industry will be initiated next fall at **Clarkson College of Technology.** The 4-yr course, combining the essential elements of the engineering sciences with those of business administration, will lead to the B.S. degree. Thirteen new courses were devised to meet the special needs.

Affiliation of the Chicago Tumor Institute with the University of Chicago has been announced. Identity of the institute will be continued by designation of the fifth, or radiation therapy floor of the Nathan Goldblatt Memorial Hospital of the University Clinics as the **Chicago Tumor Institute of the University of Chicago.**

The centennial year of the **Emory University School of Medicine** will be recognized in a special celebration 4–5 Oct. Daniel C. Elkin, chairman of the department of surgery, is chairman of the centennial committee. The program will feature a series of lectures by prominent physicians, among them Alan Gregg, director of medical sciences for the Rockefeller Foundation. At a formal academic ceremony, several honorary degrees will be conferred.

The **Massachusetts Institute of Technology** has announced plans for a nuclear reactor, New England's first, to be privately financed and devoted solely to education and unclassified research in the peacetime applications of nuclear power. At the appropriate time, approval of the Atomic Energy Commission will be sought for the allocation of the necessary fuel. The estimated total cost of the reactor laboratory will be about $1,000,000. Coupled with this new reactor project are plans for a $4,000,000 building for the physical sciences.

The **National University of Cuyo in Argentina** recently established a Mathematics Institute to stimulate basic research in mathematics and related subjects. The institute will cooperate with similar organizations in other Latin-American countries in considering problems of common concern.

This year some 1100 general contractors engaged in construction in North Carolina have invested more than $35,000 in the **North Carolina State College Engineering Foundation.** Unique in the nation, the new construction curriculum at N.C. State was conceived by the Carolinas Branch of the Associated General Contractors of America. Designed largely by and completely for the construction industry, this 4-yr curriculum will lead to a construction degree in civil engineering.

The American Society for Metals has just completed a survey of teaching activities and student enrollment in the areas that provide the **personnel for metallurgy.** The survey explains the principal reason for a shortage of metallurgical engineers and points up an obligation on the part of both higher education and industry to give greater emphasis to, and broader understanding of, the role played by metallurgical engineers.

There are now approximately 2300 students enrolled in our engineering schools who aspire to a Bachelor's degree in metallurgical engineering. Those who actually graduate in 1954 may well number less than 10 percent of the total. Taking into consideration possible changes in careers and other deviations, the total might well be reduced by still another 20 percent. This is far from being an adequate answer to the present problem of shortage, which is estimated at more than 2000. Candidates for advanced degrees also enter into the ASM survey. A separate study was conducted to determine how many students planned to do postgraduate work. Forty-seven engineering schools offering postgraduate courses in metallurgy reported that a total of 747 were carrying on post-

graduate studies in metallurgy. If an expected 90 percent of these advanced degree holders actually pursue metallurgical activities, American industry will still require approximately 1500 additional metallurgists and metal scientists. It is estimated that industry now needs more metallurgical engineers than will be graduated during the next 5 yr.

In recognition of the increased use of radiation and the associated health protection problems, the Public Health Service, U.S. Department of Health, Education, and Welfare, sponsors a **radiological health training program** at the Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio. Its purpose is to acquaint public health workers with the significance of ionizing radiations, the environmental and occupational hazards attendant on their use, and recommended procedures for minimizing such hazards. Although designed primarily for professional personnel of state and local health departments, a limited number of qualified applicants from other government agencies and industry will be welcome.

The following courses are scheduled for 1954–55: 1–5 Nov., "Problems of radioactivity in waterworks"; 10–21 Jan., "Basic course in radiological health"; 24 Jan.–4 Feb., "Occupational radiation protection"; 7–10 Mar., "Radiation hygiene—preventive medical aspects"; 18–29 Apr., "Basic course in radiological health"; 2–13 May, "Environmental radiation sanitation course"; 16–20 May, "Problems of radioactivity in waterworks." For further information address the Chief, Radiological Health Training Section, Robert A. Taft Sanitary Engineering Center, 4676 Columbia Parkway, Cincinnati 26, Ohio.

Grants and Fellowships

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

Colorado-Wyoming Academy of Science: to M. M. Douglas, ecology of the limber pine; to D. Stratton, papers of Albert B. Fall.

Illinois State Academy of Science: to E. Bennett, ecological survey in Durango, Mexico; to T. C. Dorris, limnological study of the middle Mississippi River in relation to certain navigation structures and practices; to D. Franzen, holotypes, cotypes, and paratypes of gastropod molluscs of Illinois; to Sister M. J. Preising, anaodic oxidation of sugars to carbon dioxide and water; to C. J. Rohde, Jr., life histories of soil-inhabiting micro-arthropods.

Minnesota Academy of Science to A. Grewe, lake sedimentation at Itasca State Park.

New Hampshire Academy of Science to P. Doe, synthesis of 4,4-distributed piperdines by the use of the Guareschi Imide reaction.

New Orleans Academy of Science to J. E. Tampesta, purification, isolation, and testing of the pharmacological properties of a glycosidé which has marked cardiac action.

Monica Reynolds, assistant professor of physiology in the School of Veterinary Medicine of the University of Pennsylvania, has been awarded a $2000 fellowship by the **American Association of University Women.** She has been granted a year's leave of absence to work at the National Institute for Research in Dairying at Reading, England; she will study milk formation in bovines to determine the relationship between blood circulation in the udder and the volume and composition of milk secretion.

The **American Viscose Corp.** will include 29 institutions in its college relations program for the academic year 1954–55. This is an increase of seven over last year's list of colleges and universities receiving fellowships, scholarships, and grants-in-aid. The funds available for the 1954–55 program will approximate $55,000.

Fifteen graduate fellowships have been established in the fields of chemistry, accounting, organic chemistry, cellulose chemistry, forestry, pulp technology, and paper technology. Twenty-four scholarships for undergraduates are divided among chemistry, engineering, physics, textiles, accounting, chemical engineering, business administration, textile technology, and mechanical engineering. The selection of recipients is left to the faculty of each institution. The individuals selected are under no obligation of any kind to the corporation.

The **Damon Runyon Memorial Fund** allocated $36,400 during May.

Harlem Hospital, New York. J. C. Wright. Tissue culture investigations of human neoplasms, $10,000.

University of Minnesota. O. H. Wangensteen. The "second-look" operation for patients with gastric colic or rectal cancer, $15,000.

Providence College. F. D. K. Hickey. Metabolism of cholesterol-labile digitonin precipitable metabolites of acetate in the chick embryo and living rat liver tissue, normal, regenerating and tumerous, $1000.

Montreal Cancer Institute. A. Cantero. Relative distribution of mononucleotides in nucleic acids, and intracellular distribution of enzymatic activity in normal and neoplastic liver tissue, $5000.

State Unviersity of New York. T. G. Li. X-ray absorption study of the protein content of carcinoma; *in situ* cells of the human cervix as compared to normal cells, $5400.

A broad survey of the usefulness of plastics as a material for housing will be the subject of a research program now being organized at the Massachusetts Institute of Technology. A grant of $10,000 from the **Monsanto Chemical Co.** will support the project, which will be supervised by a committee of five M.I.T. faculty members: Burnham Kelly of the School of Architecture and Planning, chairman; John E. Arnold of the mechanical engineering department; Albert G. H. Dietz, director of the Plastics Research Laboratory; and Richard Filipowski and Ralph Rapson of the department of architecture. Richard W. Hamilton, research associate in the Albert Farwell Bemis Foundation will act as coordinator.

The following awards have been sponsored by the **National Tuberculosis Association** and its medical section, the American Trudeau Society, during 1953–54.

Grants-in-aid

R. J. Anderson, Sterling Chemistry Laboratory, Yale University. Chemistry of tubercle bacilli.

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

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

V. Bryson, Long Island Biological Laboratory. Genetics of mycobacteria.

P. A. Bunn, State University of New York Medical College.

Use of the rabbit eye as a tissue for study in experimental tuberculosis.

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

A. Christie, Vanderbilt University School of Medicine. Pulmonary calcification in fungus diseases.

C. Cohen, Jackson Memorial Laboratory. Propagation of rabbit stocks of known resistance to tuberculosis.

S. P. Colowick and N. O. Kaplan, McCollum-Pratt Institute, Johns Hopkins University. Mechanism of action of isonicotinic acid hydrazide.

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

B. Gerstl, Veterans Administration Hospital, Oakland, Calif. Humoral antibodies in tuberculosis.

A. Goldman, City of Hope Medical Center. Protein and adrenal function studies in tuberculosis patients.

D. M. Gould, Johns Hopkins Hospital. Production of teaching films on chest diseases.

K. A. Harden, Howard University School of Medicine. Chronic pulmonary disease, lung surgery, and cardiac function.

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

V. E. Krahl, University of Maryland School of Medicine. Structure of mammalian lung.

E. M. Lincoln, New York University—Bellevue Medical Center. Tuberculosis in children.

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

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

G. M. Meade and R. S. Mitchell, Trudeau Sanatorium and Foundation. Statistical study of treatment in tuberculosis.

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

Q. N. Myrvik, University of Virginia Medical School. Role of tuberculo-inhibitory factors in host resistance to tuberculosis.

C. E. Palmer, Public Health Service, Washington, D.C. Minimal tuberculosis in nurses.

E. M. Papper, Columbia University College of Physicians and Surgeons. Effects of anesthesia during pulmonary resection.

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

S. Raffel, Stanford University School of Medicine. Immunity and allergy in tuberculosis.

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

W. Steenken, Jr., Trudeau Laboratory, Trudeau Sanatorium and Foundation. Maintenance of culture depot.

V. A. Stembridge, University of Texas Medical Branch. Statistical study of pathologically proved tuberculosis.

K. Terplan, University of Buffalo and Laboratories of Niagara Sanatorium. Pathogenesis of tuberculosis and significance of old encapsulated lesions.

A. J. Vorwald, Saranac Laboratory, Trudeau Foundation. Effect of inhaled silica on attenuated tubercle bacilli.

D. N. Walcher, Indiana University Medical Center. Evaluation of streptokinase-streptodornase in tuberculosis meningitis.

C. Weiss, Albert Einstein Medical Center. Caseation and softening in tuberculosis.

H. S. Willis, North Carolina Sanatorium. Vaccination against tuberculosis.

R. J. Winzler, University of Illinois College of Medicine. Mucoproteins in human plasma.

G. W. Wright and G. F. Filley, Trudeau Sanatorium and Foundation. Pulmonary function studies.

National Society for Medical Research, Chicago. Annual contribution to education program on scientific animal experimentation.

Fellowships

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

D. D. Daniels, University of California, with Ellen Brown. Pulmonary function studies.

A. M. Dannenberg, Jr., University of Utah, with E. L. Smith. Characterization of some of the proteolytic enzymes of animal tissues.

J. E. Hawkins, Duke University, with D. T. Smith and Hilda Pope. Vitamin metabolism of virulent and avirulent strains of the tubercle bacillus.

N. B. Holmgren, Northwestern University, with G. P. Youmans. Metabolism of virulent and avirulent mycobacteria.

O. B. Houglum, University of Washington, with R. S. Weiser. Nature of bacterial surface of mycobacteria in relation to lysozyme resistance.

I. Krasnow, University of California Medical School, with E. Bogen. Physiological behavior of mycobacteria species as an aid in their identification, differentiation, and classification.

E. M. LaFond, Glen Lake Sanatorium, with W. B. Tucker and others. Statistical analysis of clinical aspects of 300 cases of skeletal tuberculosis before advent of streptomycin.

E. M. Sewell, Children's Chest Clinic New York University—Bellevue Medical Center, with Edith M. Lincoln. Therapy of tuberculosis in childhood.

R. H. Shepard, Johns Hopkins University, with Joseph L. Lilienthal. Measure of oxygen tension in whole blood.

H. Wago, New York University, with Vera S. Fry. Attitudes of registered professional nurses toward tuberculosis nursing.

J. W. Whalen, Michigan State College, with W. L. Mallman. Problems in detection and isolation of *M. tuberculosis* in pathological material.

Teaching-resident fellowships

J. P. Biehl, Cincinnati General Hospital.

R. H. Clauss, Bellevue Chest Service.

D. D. Harrell, University of Pennsylvania Graduate Hospital.

M. E. Shafran, Montefiore Hospital, New York.

O. C. Steinmayer, Jr., Albany Hospital.

J. G. Tuttle, Wake Forest College, Bowman Gray School of Medicine.

C. D. Williams, University of Chicago Dept. of Medicine.

In the Laboratories

In response to inquiries concerning the status of Zeiss in Germany, **Carl Zeiss, Inc.,** New York, reports as follows:

The Carl Zeiss factory at Jena was founded in 1846. During 1889 Professor Abbe, then its sole owner, created the Carl Zeiss foundation and turned over all his property to it. When, after World War II, Jena, and that section of Germany, came under the Soviet regime, the new communistic government of East Germany took away all Zeiss property without any compensation, and changed the name of the firm to "Optik Carl Zeiss Veb" (property owned by the People). This sovietization had grave consequences for the industrial organization as well as for the employee-employer relations of Zeiss in the Eastern Zone.

After the conclusion of World War II in 1945, all members of the Board of Management of Carl Zeiss and of the Carl Zeiss foundation, together with many scientists, members of the engineering staff and technical specialists were evacuated from Jena by the United States Army. They were brought to Western Germany in the United States Zone, with permission to start a new Zeiss factory. This was done.

The new Zeiss Works in Oberkochen operated first under the name of "Zeiss Opton." Since October, 1953, it has borne the name "Carl Zeiss." As in former years, it is a part of the Carl Zeiss foundation which is now domiciled in West Germany. All products imported and distributed and sold by Carl Zeiss, Inc., New York, are manufactured in West Germany.

The new **Chemical Products Plant of the Aluminum Company of America** in Bauxite, Ark., is 50 percent complete, with two of the four production units in operation.

Cornell Aeronautical Laboratory, Inc., Buffalo, is building a small transonic-supersonic wind tunnel, valued at over $150,000, for studying the basic prob-

lems of airflow up to speeds about three times that of sound. Only through recent developments have tunnels been able to test in the transonic speed range, as previously a "choking" in airflow would occur at or around the speed of sound. The new tunnel will require 2000 hp for operation and will have a 1-ft^2 testing area.

Levinthal Electronic Products, Inc., a new organization in Redwood City, Calif., will combine a specialty in electronic medical instruments with research, development, and merchandising of other products relaing to the fields of applied physics and electronics.

A $250,000, 60-megavolt microwave linear accelerator, the third operating member of the unique group of radiation devices for the treatment of cancer in the **University of Chicago's Argonne Cancer Research Hospital,** recently produced its first beam of electrons. Physicists will conduct further tests to determine basic characteristics of the beam and thus the accelerator will not be available for patient treatment for several months.

Westinghouse Electric Corp. has broken ground at Blairsville, Pa., for its new metals plant, which is to bridge the gap between research and the commercial application of new metals and alloys in the electrical industry. The expectation is that most of the machinery and equipment will be installed and operating by mid-1955.

In the development and application of new metals, the Blairsville plant will work closely with the new Westinghouse Research Center now under construction about 10 mi east of Pittsburgh; it also will have limited capacity for the manufacture of special metals needed by various Westinghouse operating divisions. The plant will provide equipment for the basic metal working processes of melting, forging, hot-rolling, cold-rolling, conditioning, pickling, and heat-treating. In addition, there will be facilities for new foundry techniques and for limited manufacture of powdered metal parts.

Miscellaneous

The Committee on Disaster Studies of the National Academy of Sciences—National Research Council published its first issue of the ***Disaster Research Newsletter*** in March 1954. Disaster research has needed a medium through which investigators in the field might learn of current disaster research and of other personnel engaged in the study of disaster phenomena. Because of the multi-discipline approach to such study, it is hoped that the *Newsletter* may serve as liaison to investigators in the various scientific, administrative, and organizational fields, and that it will stimulate an exchange of information among investigators.

Individuals or institutions engaged in basic or applied research, the administration or organization pertinent to disaster study, or in the planning or relief of disaster problems, may obtain the *Newsletter* gratis from the Committee on Disaster Studies, 2101 Constitution Ave., Washington 25, D.C.

A new bulletin, ***Forest Cover Types of North America (Exclusive of Mexico),*** has just been published by the Society of American Foresters. The price is $1, postpaid, from the Society office, Mills Building, 17th St. at Pensylvania Ave., NW, Washington 6, D.C. This publication is a revision and combination of previous bulletins and contains detailed descriptions of the forest types of the United States, Canada, and Alaska. These descriptions cover species and associates, composition, occurrence, importance, place of the type in vegetative succession, variants, and synonyms. Two comprehensive tables list common and technical names of the tree species with authority of the new U.S. Forest Service "Check List."An index of forest types is included.

Human Biology, founded in 1929 by the late Raymond Pearl, will be published by the Wayne University Press under the editorship of Gabriel Lasker, the secretary of Section H of the AAAS. This 26-yr-old quarterly is a "record of research" with special emphasis on the biometry of man and the other primates. The first issue under the new management appears this month, and is devoted to studies on man, with particular reference to growth and infant mortality. Of the six original articles in it, three come from abroad—one each from Africa, Asia, and Europe. The September issue will feature the symposium on the nonhuman primates and human evolution that was presented at the Boston meetings of the AAAS last December; it will include an article by the late Earnest A. Hooton of Harvard University and is a memorial to him. Later issues will include articles on human genetics, population trends, and evolutionary theory, with book reviews and brief communications as well.

Besides Dr. Lasker, the editorial board includes Josef Brozek, University of Minnesota; Bentley Glass, The Johns Hopkins University; Donald Mainland, New York University; James N. Spuhler, University of Michigan; and William L. Straus, Jr., of Johns Hopkins.

Human Biology is unusual among scholarly journals in that it is financed entirely by subscriptions. The annual subscription rate continues at $5, a price held constant since the beginning. Subscriptions may be placed with Wayne University Press, Detroit 1, Mich. Manuscripts for consideration should be sent to Dr. Gabriel Lasker, 1401 Rivard St., Detroit 7, Mich.

The **Indian National Scientific Documentation Centre** (INSDOC) is a national nonprofit organization set up by the Government of India in 1952, with the help of UNESCO, to provide all scientific and technical workers in India with a central library and documentation service. The Government of India has not restricted INSDOC in any way from offering its services to other countries on the same terms as to Indian citizens. The address of INSDOC is National Physical Laboratory, Hillside Rd., New Delhi 12.