close similarity of physical characteristics of mucoprotein and intrinsic factor, and the potent intrinsic factor activity of mucoprotein, it appears permissible to consider glandular mucoprotein fraction of the gastric "dissolved mucin" as the main carrier of the intrinsic factor activity of the human gastric juice.

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News and Notes

Symposium on the Evaluation of Optical Imagery

A Symposium on the Evaluation of Optical Imagery, held at the National Bureau of Standards Oct. 18–20, 1951, was attended by approximately 250 specialists in this field. Sponsored by NBS in cooperation with the Office of Naval Research, the meeting was the ninth of 12 symposia scheduled for the bureau's semicentennial year. The program, under the chairmanship of I. C. Gardner, of NBS, consisted of 21 technical papers organized to treat comprehensively a phase of lens design which is of great importance to the designer, but which has not yet received complete, systematic treatment in any one publication.

In applied optics, lens designs are usually evaluated on the basis of geometric optics, and the performance of optical systems is commonly measured in terms of their geometric aberrations. These practices are justified when aberrations are so large that diffraction plays but a small part in determining the quality of the imagery. Now, however, better optical systems are being produced; automatic computing machines make it possible to test an optical design completely by computation; the interferometer enables the wave front emergent from an optical system to be completely mapped; and integrating devices permit diffraction effects to be readily and fully determined. The purpose of the symposium was to re-examine and compare the present methods of image evaluation in the light of recent developments, with the purpose of placing these methods on a sound engineering basis and utilizing the principles of physical optics when justified. It is expected that the proceedings, including both papers and discussion, will be published as a single volume.

The six sessions of the symposium were under the chairmanship of I. C. Gardner, W. R. Brode (NBS), H. R. J. Grosch (International Business Machines), A. Maréchal (Institut d'Optique, Paris), S. S. Ballard (Tufts College), and Brian O'Brien (University of Rochester). The meeting began with a paper by F. Zernike (Natuurkundig Laboratorium, Groningen, The Netherlands) on the diffraction theory of aberrations. Tolerances for various aberrations were given; they are much larger than expected from geometric optics. Dr. Maréchal discussed the quality of optical images as determined by various quantities related to the diffraction pattern. Primary diffraction images produced

by fully corrected objectives of high numerical aperture were treated by Harold Osterberg and R. A. McDonald (American Optical Company).

The bases for testing optical instruments were outlined by L. E. Howlett (Canadian National Research Council). D. E. Macdonald (Boston University) discussed the quality aspects of the aerial photographic system, describing an experiment whereby the resolution, scale, and contrast relations that allow for detection recognition of basic forms can be evaluated. M. Herzberger (Eastman Kodak Research Laboratory) presented a mathematical analysis of the image errors of a given optical system for different focal settings in terms of the new image theory for finite aperture and field. It was shown that this theory is of value to the lens designer because it gives a graphic picture of the contributions of the single construction element to the finite image. A. Arnulf (Institut d'Optique, Paris) gave a short description of the apparatus built at the Institut for standard checking of quality and performance of optical instruments under conditions closely approximating those encountered in actual practice. Results were also given concerning the effects of absorption, stray light, single aberrations, and the choice of the tests.

A comparison of image quality evaluations by different test methods for telescopic systems was presented by H. S. Coleman (Bausch & Lomb Optical Co.), and A. C. S. van Heel (Technische Hogeschool, Delft) discussed applications of Fresnel diffraction to measurements of high precision. By observation of the colored diffraction patterns produced by gratings with periods of about 0.5 mm, the parallelism and the structure of light pencils can be studied with a precision corresponding to deviations in the wave front of less than one fiftieth of a wavelength. J. G. Baker (Harvard College Observatory) presented a progress report on several phases of a combined laboratory and computational approach to the problem of realizing optimum compromises in the design of photographic lenses. The study involves the computation of a number of large lens systems, laboratory testing, and the preliminary use of objective types of test targets. G. Toraldo (Istituto Nazionale di Ottica, Florence) discussed the geometrical and interferential aspects of the Ronchi test.

Erik Ingelstam (Royal Institute of Technology, Stockholm) described a method, developed by J. Lindberg and himself, which includes the measurement of photographic resolving power and distortion, and the determination of field curvature in a single photographic record. The essential feature of the method is the use of a "tilted test plate" with line groups in the collimator. R. E. Hopkins, Thomas Lauroesch, Vance Carpenter, and Howard Kerr (University of Rochester) discussed two methods that have been tried out in their laboratory for measuring the energy distribution in optical images. The use of automatic computing machinery at NBS in optical ray tracing calculations and the computation of image coefficients was discussed by D. P. Feder.

F. E. Washer described a new variable-contrast resolving power test chart recently developed at NBS. This chart enables the user to obtain in a single photograph a complete record of the resolution characteristics of a lens over a wide range of contrast. The theory of resolving power as applied to sine-curve test objects was developed by E. W. H. Selwyn (Kodak Limited Research Laboratory), who also described some interesting experiments with sine-curve test objects. Otto H. Schade (Radio Corporation of America) presented a new theoretical approach for evaluating lens performance for television purposes and demonstrated a machine developed for the Office of Naval Research by means of which this method is automatically applied to a lens.

Brian O'Brien gave an interesting paper on his recent work on the resolving power of the retina of the eye, in which he has been able to eliminate the effect of the spherical aberration in assessing resolving power. The position of the best focus of a lens in the presence of spherical aberration was discussed by R. Kingslake (Eastman Kodak Company) from the standpoint of both the designer and the user of the lens. The technique of image evaluation by edge gradients was outlined by Arthur Cox (Farrand Optical Co.), and R. V. Shack (NBS) described experiments in which the dependence of resolving power on object contrast in a photographic system was investigated. He also presented a method of determining image quality in which the concept of resolution as such is not used.

The National Bureau of Standards has carried on a broad program of research and development in applied optics since its founding in 1901. Over the past 50 years, this program has resulted in the establishment of procedures for measuring and specifying the characteristics of photographic lenses, the development of military optical fire-control devices and methods for testing them, the construction of very large optical elements for supersonic wind tunnels and astronomical work, and the development of methods of high-precision refractometry and standards of refractivity for use in the food, paint, drug, and other industries. Activity in this field at NBS has recently been intensified as additional projects have been undertaken for the armed services.

IRVINE C. GARDNER

Scientists in the News

Ambhai Anubuyong, Payome Aranyakanon, Pumwarn Komalarjun, and **Kasetre Phitaksphraivan,** of the Thai Geological Survey, have arrived in the U. S. for a year's technical instruction under the guidance of the Geological Survey. After ten days in Washington they went to the University of New Mexico for academic work. This summer they will be attached to field parties or working groups. Other recent visitors at the Survey were **Antonio M. Bello** and **Ernesto da Fonseca Lourenco,** of Portugal; **Alberto Ericksen,** of the Departamento Nacional da Produção Mineral,

Brazil; and **Sarit Pattajoti,** of the Royal Irrigation Department, Thailand.

Sidney S. Chernick, who has been with the Division of Physiology, University of California, Berkeley, has been appointed as chairman, Department of Pharmacology, School of Pharmacy, North Dakota Agricultural College.

Robert T. Clark, Jr., head of the Department of Biology, Abilene Christian College, has been appointed head of the Department of Physiology and Biophysics at the Air Force School of Aviation Medicine.

N. A. Court, of the Department of Mathematics at the University of Oklahoma, has retired with the title of professor emeritus.

Carey Croneis, president of Beloit College, has been elected president of the American Geological Institute, succeeding **William B. Haroy, Jr.,** of Houston. **Andrew H. Whiteford,** director of Logan Museum of Anthropology at Beloit College, is on sabbatical leave in Popayán, Colombia, where he will continue his research in social anthropology, which is now being carried on through a grant from the Wenner-Gren Foundation.

William S. Dawson has been appointed director of plans and requirements for Headquarters 1808th Airways and Air Communications Service Wing. In this position he will be responsible for supervision of engineering and planning, and for obtaining authorization for personnel and equipment for airways communications and electronic navigational aids throughout the entire Pacific area and Asia, including Korea. Major Dawson had been deputy director since the recent creation of the new directorate.

D. Gardner Foulke took over the executive secretaryship of the American Electroplaters' Society from **A. Kenneth Graham,** who resigned last spring but continued until his successor had familiarized himself with the society's operations.

E. Paul George, cosmic ray physicist, of Birkbeck College, University of London, will be visiting professor of physics at the University of Rochester through the month of March.

Joseph H. Gerber has been appointed chief medical officer of the Office of Vocational Rehabilitation of the Federal Security Agency, succeeding **Thomas B. McKneely,** who assumes the previous position of Dr. Gerber as chief of the Program Operations Branch of the Division of Civilian Health Requirements in the Office of the Surgeon General. Dr. McKneely has been with the Office of Vocational Rehabilitation since 1945, and Dr. Gerber has been with the Public Health Service since 1950. Dr. Gerber was formerly assistant director of Peter Bent Brigham Hospital in Boston.

George A. Johns, who has been superintendent of Rosewood State Training School, Owings Mills, Md., since 1929, has retired because of the state age limit and has accepted a position at State Hospital No. 4, Farmington, Mo. He will be succeeded at Rosewood by **George L. Wordsworth.**

The Royal Society (London) has announced that the Copley Medal has been awarded to **D. Kellin** for researches in protozoology, entomology, and the biochemistry of enzymes; the Davy Medal to **Eric Rideal** for distinguished contributions to surface chemistry; and the Hughes Medal to **H. A. Kramers** for distinguished work on the quantum theory, particularly its application to the optical and magnetic properties of matter.

Warren H. Lewis, member of the Wistar Institute of Anatomy and Biology, has been elected a foreign member of Accademia Nazionale dei Lincei, Roma.

Randolph T. Major, vice president and scientific director of Merck & Co., Inc., has been named chairman of the Research and Development Board Committee on Chemical Warfare. Dr. Major succeeds **Robert C. Swain,** vice president in charge of research and development, American Cyanamid Company.

A separate Department of Anesthesiology has been formed at Columbia University's College of Physicians and Surgeons, and **Emanuel M. Papper,** professor of anesthesiology, has been appointed its head. The study and teaching of anesthesia were formerly conducted under the direction of the Department of General Surgery.

Additions to the staff of the Limnology Department, Academy of Natural Sciences of Philadelphia, include **Selwyn Roback,** insects; **Richard Claude Hecker,** plant physiology; and **George McCammon,** fishes. The men fill positions in a new department of the academy engaged on problems arising from stream conditions. The academy is currently making an intensive biological study of the Savannah River, in South Carolina, for Du Pont.

Inca and pre-Inca dwellings are being investigated by **Stig Rydén,** of the Gothenburg Ethnographical Museum, Stockholm, who is now in Bolivia on his third expedition to the Tiahuanaco Indians.

Harvey E. Stork, chairman of the Department of Botany at Carleton College and president of the National Association of Biology Teachers, has received grants from RESA and from the Hill Family Foundation, of St. Paul, to continue his work on the wood anatomy of tropical American trees. Dr. and Mrs. Stork will spend about 14 weeks in Costa Rica collecting samples of the many tropical woods of that area, a complete study of which has never been made. Later they will go to the University of California (Berkeley) to prepare and study the collection.

L. T. E. Thompson, technical director at the U. S. Naval Ordnance Test Station, Inyokern, China Lake, Calif., since 1945, was honored at a dinner in the Michelson Laboratory. Dr. Thompson is retiring from

government service and has accepted a position as consultant with Norden Laboratories, of White Plains, N. Y. **Fred W. Brown,** associate director of research and development at the U. S. Naval Ordnance Test Station since 1950, has been appointed the new technical director. **Levering Smith,** USN, has been promoted to the position of associate director.

Derrick T. Vail, Chicago ophthalmologist, has succeeded **Charles W. Mayo** as chairman of Veterans Administration's Special Medical Advisory Group, a statutory unit that helps shape policy in the Department of Medicine and Surgery. Other elections were those of **Franklin D. Murphy,** chancellor of the University of Kansas, as vice chairman, and **Brian B. Blades,** professor of surgery at George Washington University, secretary.

Education

An **Antipodes–Bounty Islands Expedition,** led by R. A. Falla, chairman of the Pacific Science Association Standing Committee on Pacific Conservation, recently brought back a collection of insects, leaf mould from the Antipodes to be worked through by Berlese funnel, shells and marine life, algae, and a small number of plants, rock specimens, and peat samples. The expedition had, as one of its main objectives, observations on oceanic birds and the few species of land birds inhabiting the Antipodes. Several uncommon species of petrel, as well as albatrosses and penguins were seen, all the birds being numbered in many thousands. In addition to Dr. Falla, the party consisted of E. G. Turbott (Auckland Museum), R. K. Dell (Dominion Museum), H. Ollerenshaw (Department of Internal Affairs), and two government surveyors.

Bowling Green State University has organized a Council of the Division of Sciences to coordinate course offerings, recommend new ones, promote cooperation, and assist in administrative problems. Donald W. Bowman, professor of physics, is chairman, and Frank C. Ogg, chairman of the Mathematics Department, is secretary. Division councils will also be established in the humanities and the social sciences.

The **University of California (Los Angeles)** has established a Pacific Tropical Diseases Research Project under the direction of John F. Kessel, UCLA Medical School, who is now in Tahiti. Grants from Cornelius Crane, of the plumbing firm, William A. Robinson, author of *Ten Thousand Leagues Over the Sea,* and the Mormon Church will support the investigation.

In a Career Pattern Study, **Columbia University** has embarked on a 20-year project in Middletown, N. Y. Donald E. Super, of Teachers College, is director of the study, which is designed to "provide a much clearer picture of vocational choice and adjustment." Serving as guinea pigs are 143 eighth-grade and 144 ninth-grade boys in the public schools. Some questionnaires have been especially prepared for the project; others are of the standardized type. Dr. Super and his staff of four full-time and three part-time workers will announce their preliminary findings at intervals.

Dartmouth College is the recipient of the library of the polar regions assembled by Vilhjalmur Stefansson. The material consists of 35,000 volumes, 18,000 pamphlets, and many manuscripts, dealing not only with the geographical features of the polar regions, but also with the science, music, history, languages, folklore, and habits of arctic and antarctic peoples. There are also special collections on pre-Columbian relations between the Old and New Worlds, on nutrition work in the arctic, and a collection of medieval Icelandic works.

Tuskegee Institute will dedicate its new Carver Foundation Research Laboratories on Feb. 25. Henry Gilman, professor of chemistry at Iowa State, will be the speaker and will conduct an evening seminar.

Yale University Medical School is sponsoring a marriage counseling clinic through its Departments of Psychiatry and Obstetrics and Gynecology. The clinic will serve couples in the New Haven area and will work in cooperation with other agencies that may wish to refer cases to it. It will also work with the Yale infertility clinic, now in its fifth year. The project will be assisted by a grant from the Planned Parenthood League of Connecticut and, if successful, it is planned to offer a course in counseling service at a professional level.

Grants and Fellowships

The **American Heart Association** has allocated funds totaling nearly $200,000 for studies to be conducted during the fiscal year beginning next July. The work of nine Established Investigators will be continued, and five new Investigators have been appointed. Eleven Research Fellowships were renewed and 12 new ones were instituted. Additional awards in the form of grants-in-aid to institutions will be made during the next few months.

A new freshman scholarship, to be known as the **Lillia Babbitt Hyde Honor Scholarship in Science,** has been announced at Bryn Mawr. Applicants for admission to the college may compete for the prize by submitting an essay on a subject selected from a group of topics in biology, chemistry, or physics. The competition closes on *Apr. 1.* For further details write to the Bryn Mawr director of admissions.

Graduate assistantships for 1952–53 in the Department of Meteorology at **Florida State University** are offered on research projects being conducted for the Office of Naval Research and the Geophysical Research Division, Air Force Cambridge Research Center. For further information and application forms, which should be filed before *May 1,* write to Dean, Graduate School, Florida State University.

The **Alfred R. Glancy Fund** has been established at Lehigh by Alfred R. Glancy, of Atlanta, a 1903 graduate. The fund will be used to provide scholarships and an annual award of $1,000 to a faculty member, not more than 35 years of age and below the rank of associate professor, who shows unusual promise of professional achievement and has contributed outstanding services to the university. The donor, a mechanical engineer, was president of Oakland Motor, vice president of General Motors, and deputy chief of Army Ordnance in World War II.

The annual **Houghton Mifflin Literary Fellowship Awards** are being offered for projects in either fiction or nonfiction. All manuscripts submitted will be considered for publication, whether or not they receive an award. Applications may be filed and material submitted at any time during the year; those received after Dec. 31 will be considered for next year's competition.

Merck & Co., Inc., has established a predoctoral fellowship in the College of Pharmacy of the University of Florida, providing for an annual stipend of $1,200, plus $300 for supplies. The first Fellow is Louis D. King, who will work under C. H. Becker.

National Research Corporation, of Cambridge, Mass., has formed **The National Research Corporation Scientific Trust,** to which a portion of the company's net income has been contributed for the year ending Dec. 31, 1951. The corporation expects to support basic research on a long-term basis. Trustees of the fund are Julius A. Stratton, MIT vice president and provost, and William A. Coolidge and Richard S. Morse, National Research officials.

The **Office of Naval Research,** Psychophysiology Branch, Human Resources Division, has awarded contracts for the following research projects: Nervous Pathways and Connections of the Auditory System, G. L. Rasmussen, University of Buffalo; Visual and Stereoscopic Acuity for Moving Objects, E. J. Ludvigh, Kresge Eye Institute; Visual Adaptation in Various Levels of Illumination, H. D. Baker, and Electrophysiological Studies of Chemoreceptors, Lloyd M. Beidler, Florida State; Retinal Factors in Motion Perception, H. G. Wagner, Johns Hopkins University; Display and Signal Pattern Discrimination, Paul M. Fitts, and Design and Construction of a Colorimeter, Glenn A. Fry, Ohio State.

Supported by a $600,000 grant from the **John Hay Whitney Foundation,** five small independent colleges, ordinarily unable to afford unusual teaching talent, will have the services for at least a year of outstanding professors who have reached retirement age at other institutions. The program also includes a plan to improve secondary school teaching through annual awards of graduate fellowships to 20 teachers in public high schools. Inquiries and applications should be directed to Elbert K. Fretwell, Jr., Administrative Committee, 1219 16th St., N.W., Washington 6, D. C. Applications must be filed by *Apr. 1.*

In the Laboratories

The Solvay Process Division of **Allied Chemical & Dye Corporation** has formed an Organic Section to develop and manufacture organic chemicals and related products. C. S. Fazel, new vice president of Solvay, will direct the project, with the assistance of F. O. Agel, director of development, and C. K. Lawrence, chief of research. A 650-acre site has been acquired near Orange, Tex., for the construction of a $5,000,000 plant to manufacture ethylene glycol and ethylene oxide.

Carnegie Institution of Washington is preparing a monograph, edited by John S. Burlew, on the mass culture of algae, summarizing the work of its own investigators, as well as of some foreign researchers, in the field. Tentative publication date is April.

At **Hercules Powder Company** David S. Bruce has been named manager of new products for the Cellulose Products Department; Petrus W. Meyeringh, vice president, director, and member of the Executive Committee, retired in December for reasons of health. Mr. Meyeringh is a native of Rotterdam, where he was president of the N. V. Netherlands Chemical and Raw Material Company. In 1923 he became associated with the N. V. Hercules Powder Company of Rotterdam and The Hague, coming to the U. S. in 1930 as manager of the Foreign Relations Department. William C. Hunt, assistant general manager of the Explosives Department, and Cornell H. Cordie, manager of explosives development, have also retired, ending 38 and 21 years, respectively, of association with the firm.

Lindberg Instrument Company, Berkeley, Calif., has moved to larger quarters at 1808 Harmon St., where the new plant will include full facilities for engineering research and the manufacture of fluid sound, the phonograph pickup cartridge employing the principles of fluid damping and coupling.

Arthur D. Little, Inc., has added John Swift, former principal research engineer for Lever Brothers, to its Chemical Engineering Department. Joseph Voci, who has been assistant to the technical director of Penick & Ford, has also joined the department.

Multi-Tron Laboratory, established four years ago in Chicago, has moved to new and larger quarters at 4624 W. Washington Blvd. The company, headed by Nicholas D. Glyptis, is engaged in electronic research and in the design and manufacture of special-purpose tubes, precision assemblies for vacuum tubes, and in tool and die fabrication.

The **National Bureau of Standards** has appointed Earle K. Plyler chief of the Radiometry Section of the Atomic and Radiation Physics Division. Widely known for his researches in molecular spectra and infrared spectrometry, Dr. Plyler has been at NBS since 1945. In the NBS Institute for Numerical Analysis in Los Angeles, Derrick H. Lehmer, former professor of mathematics at UCLA, has been ap-

pointed director of research. A new member of the Washington staff of the Thermodynamics Section is David E. Mann.

Meetings and Elections

J. Henry Walker, Department of Biology, University of Alabama, has been elected president of the **Alabama Academy of Science,** and John Fincher, of Howard College, has been made president-elect. Vice presidents and section chairmen include Joseph F. Volker, Leo B. Roberts, Edgar C. Horton, R. Vance Miles, Jr., Howard Carr, James F. Sulzby, Jr., C. M. Farmer, and J. H. Johnson. William T. Wilks and Ralph L. Chermock were elected secretary and treasurer, respectively. The 1952 meeting of the academy will be held at Spring Hill Feb. 29–Mar. 1.

The following officers have been elected by the **American Pharmaceutical Association** and will be installed at the annual meeting in Philadelphia Aug. 17–23: R. Q. Richards, president; first and second vice presidents, Tom D. Rose and Charles F. Lanwermeyer. The present officers, Don E. Francke, Joseph B. Burt, and John A. MacCartney, will function until the new officers take over.

The **Bureau of Biological Research** of Rutgers University devoted its October quarterly meeting to the dedication of the new Serological Museum Cold Room and Systematic Collection, and to scientific reports and consideration of the museum's program. The cold room, designed to house and preserve an invaluable collection of animal sera, was constructed with a grant from the Rockefeller Foundation. A full report of the meeting may be obtained from Alan A. Boyden, Director, Serological Museum, Rutgers.

A discussion on phase changes being organized by the **International Union of Pure and Applied Physics Commission on Thermodynamics** and the **Société de Chimie Physique** will be held in Paris June 3–7. Anyone who wishes to attend should write E. Bauer, Laboratoire de Chimie Physique, 11 rue Pierre Curie, Paris, or I. Prigogine, Université Libre de Bruxelles, Ave. Franklin D. Roosevelt, Bruxelles, Belgium.

The thirty-third annual meeting of the **Pacific Division of the AAAS** and its associated societies will be held at Oregon State College, Corvallis, June 16–21. Accommodations, including dining facilities, can be provided on the campus for 1,000 visitors, special accommodations being available for families with children. In addition, there are some hotel and motel accommodations in Corvallis and at Albany, ten miles away. Local arrangements are in charge of a General Committee, of which Henry P. Hansen, Graduate School, Oregon State, is chairman.

Sigma Delta Epsilon elected the following officers at its meeting in Philadelphia: president, Elizabeth Mackay; vice presidents, Mildred Engelbrecht and Mary Keeffe; secretary, Helen Linkswiler; treasurer, Florence W. Lewis. Ethaline Cortelyou was elected to the Board of Directors.

Miscellaneous

Prizes in a nation-wide essay contest, sponsored by the **Gravity Research Foundation,** on the subject of how to go about harnessing the power of gravity, went to Myron J. Lover ($1,000 first prize), William M. MacDonald, J. W. Beams, and J. M. Luttinger. Four additional awards of $100 each were given.

The **Lasker Awards for Medical Journalism** will be presented at the annual dinner meeting of the National Association of Science Writers in Chicago June 10. All newspapermen and magazine writers who have written medical or health articles during 1951 are eligible; deadline for submission of entries is *Mar. 15.* For entry blanks and other information write to the Nieman Foundation for Journalism, 44 Holyoke House, Cambridge 38, Mass.

Rare chemicals wanted by the Registry of Rare Chemicals, 35 W. 33rd St., Chicago 16, include boron ethoxide; columbium (large, single crystals); tantalum (large, single crystals); methyl mercury iodide; 5,14-dimethyloctadecane; 2-chloroisophthalic acid; 9-anthraldehyde; 2,6-diamino-3,7-dimethylacridine; 4,5-dihydroxy-2-methylpyridine; 2-ethylhexanedithiol-1,3; ethyl propiolate; β,β′-diisocyanatodiethylsulfide; piperine; quinoline-8-carboxylic acid; methylisobutylamine; mannonic acid; oxythiamine; phosphotyrosine; adrenostene; galactonic acid; and propylene tetramer.

The winter lecture season of the **Society of the Sigma Xi** has been expertly designed from the standpoint of geographic coverage. Paul R. Burkholder, chairman of the Department of Plant Science at Yale University, discussed "Cooperation and Conflict among Primitive Organisms" before 11 chapters and clubs in New England, New York, and Pennsylvania; Walter Orr Roberts has dealt with "Unsolved Problems of the Sun's Atmosphere" at 16 meetings of clubs and chapters from Indiana to California; and Donald R. Griffin is currently touring the Southern states from Virginia to Louisiana, explaining "Sensory Physiology and the Orientation of Animals." Especially noteworthy among the lectures sponsored by the society was the address of E. Newton Harvey on "Animal Light" at the Philadelphia meeting of the AAAS.

A new **U. S. Weather Station** on Mauna Loa, Island of Hawaii, dedicated in December, marked the realization of a recommendation made by the first Pan-Pacific Scientific Conference in Honolulu in 1920. The observatory, located at an elevation of 13,453 feet, highest accessible point in the inner Pacific area, is designed to operate for weeks without checking; eventually it will be completely automatic. During 1952 the existing equipment will be considerably augmented by an automatic radio relay to transmit, on call, temperature, pressure, rainfall, and wind direction and velocity, and a water vapor spectrometer to measure the absorption of solar radiation. A similar instrument will be installed at sea level in Hilo, for comparative measurements.