

using rapid-flash illumination in studying visual acuity versus brightness functions were also reported, as were morphological studies of animal retinas in which fast-freezing techniques are employed to avoid distortion or destruction of the rod-and-cone structure of the retinas.

During the remainder of the morning session, the listeners were given the privilege of hearing four additional experts on vision speak along the lines of their major interest. Samuel A. Talbot of the Johns Hopkins University School of Medicine reviewed the current theories of retinal color mechanisms, and put forward an integrated explanation. H. K. Hartline of the Johns Hopkins University described his experiments on the activity of single optic nerve fibers as they relate to the problem of visual resolution, and J. M. Otero, Director of the Institute of Optics of Madrid, Spain, spoke on "State of Accommodation and Other Factors Affecting Visual Performance". In the final paper, George Wald of Harvard University proposed a new field of research activity: *biochemical optics*. He has successfully elucidated the cycle between rhodopsin ("visual purple"), its bleaching by light to retinene, its transformation to vitamin A, and its reconversion to rhodopsin; the part played by the colorless protein opsin was described. This very cogent explanation of some of the heretofore unanswered questions regarding dark adaptation seems to provide a most appropriate keystone for the new structure of biochemical optics. It is hoped that all five of these excellent papers will appear in a subsequent issue of the *Journal of the Optical Society of America*, so that this wealth of systematized information will be made readily available to all.

Other activities of the three-day meeting included the presentation of some sixty contributed papers, in several of the many fields which lie within the broad coverage of the Optical Society. We felt fortunate in being one of the first scientific organizations to honor the 50th anniversary of the founding of the National Bureau of Standards. Actually, the date of the signing of the organic act which established the Bureau was March 3, so our meeting was admirably timed. A half day was spent in visiting laboratories at the Bureau which are concerned with optical work, and at the informal dinner a commemorative scroll was presented by the President of the Optical Society to the Director of the Bureau, E. U. Condon, who responded appropriately and wittily. E. C. Crittenden, Emeritus Associate Director of the Bureau of Standards and a Past President of the Optical Society, spoke at the dinner on the early work in optics at the Bureau.

Stanley S. Ballard  
Tufts College

## MEETINGS TO BE HELD

### SYMPOSIA TO BE HELD AT ILLINOIS TECH

A pair of three-day meetings sponsored by Armour Research Foundation of the Illinois Institute of Technology will be held next June at the Sheraton Hotel in Chicago. The first, scheduled to meet from June 11 to 13, will be a symposium on analysis and metallography of titanium and will feature panel discussion on instrumental analysis, gases in titanium, chemical methods, and metallography. Julian Glasser is program chairman for the titanium meeting. A second symposium, on surfaces, will meet June 14-16, and will also involve panel sessions where audience participation in discussion will be encouraged. Program chairmen for the surfaces symposium (the fourth annual meeting of its kind to be sponsored by the Foundation) are Charles F. Tufts and Walter C. McCrone. A display of instruments is planned.

### 6TH CANADIAN PHYSICISTS CONGRESS

The Canadian Association of Physicists is having its Sixth Annual Congress in Montreal, May 31st-June 2nd, with McGill University and the University of Montreal acting as joint hosts. The Association is the only physicists' organization in Canada which is open to anyone having the required standards of education and actively carrying out work in physical science. This year's program, in addition to the usual contributed papers and social events, will include a symposium on semi-conductors, a symposium on nuclear physics, and a discussion on the employment of physicists in a national emergency. Advance programs will appear in the April issue of the *Canadian Association of Physicists Bulletin* and will also be available from The Secretary, Canadian Association of Physicists, Box 51, Station F, Toronto, Canada.

### SOCIETY FOR APPLIED SPECTROSCOPY

The sixth annual meeting of the Society for Applied Spectroscopy will be held May 25th and 26th at the Socony-Vacuum Training Center, 63 Park Row, New York City. The program for the first day of the meeting will consist of a symposium on standardization in spectrochemical procedures, while the second day's program will feature two sessions of contributed papers on the general subjects, "Applied Spectroscopy" and "New Instrumental Developments". There will also be an exhibition of spectroscopic equipment.

### INDUSTRIAL RESEARCH

The Second Annual Conference on Industrial Research, to be held June 11-15 at Columbia University in New York City, will concern personnel and communications in research. Sessions on the training and efficient use of research workers and on the internal and external communication of laboratory results will feature the program. The emphasis of last year's Conference was on costs, budgeting, and economics of industrial research; the Conference *Proceedings* for 1950 are available through the Columbia University Press.

### COLLOQUIUM OF COLLEGE PHYSICISTS

The Colloquium of College Physicists will have its next sessions on June 13-16 at the University of Iowa. The program will feature research lectures on low velocity electron beams, physical behavior of high polymers, semiconductor, acoustics, and mass spectrometry. One afternoon will be occupied with special studies of undergraduate laboratory instruction, both advanced and elementary, and an exhibit of new experimental and nonexperimental teaching is scheduled for which prizes are to be awarded. G. Gamow of George Washington University will give a series of four lectures, two on the origin and evolution of the universe and two on the physics of living matter.

### MEETINGS ON HEAT AND APPLIED MECHANICS

Stanford University will play host for the fourth annual meeting of the Heat Transfer and Fluid Mechanics Institute (June 20th to 22nd) and for an Applied Mechanics Conference, sponsored by the West Coast Committee of the Applied Mechanics Division of the American Society of Mechanical Engineers (June 22nd and 23rd). While both meetings will be run independently, the dates have been arranged to overlap by one day in order to provide greater variety of sessions and exchange between the two groups.



The Heat Transfer and Fluid Mechanics Institute is sponsored by the ASME, together with Stanford, Caltech, and the Universities of California, Santa Clara, and Southern California. The program, which will consist of six sessions of three papers each, will give consideration to problems in thermal radiation, conduction, convection, mass transfer and combustion, ideal compressible and incompressible flow of gases and liquids, and various aspects of pipe, channel, and boundary layer flow. Further information may be obtained by writing to A. L. London, Department of Mechanical Engineering, Stanford University, Stanford, California.

Subjects to be covered by the Applied Mechanics Conference will include dynamics, elasticity, experimental stress analysis, strength properties of materials, and plasticity. Inquiries should be addressed to J. N. Goodier of the Division of Engineering Mechanics at Stanford.

#### SCIENCE IN GENERAL EDUCATION

The Harvard Summer School of Arts, Sciences and Education is arranging a conference on science in general education to take place on July 9, 10, and 11 at Harvard University, Cambridge, Massachusetts. It is planned to have a series of three evening meetings devoted respectively to *Science and Society*, *Science and Philosophy*, and *Science and History*. Each meeting will consist of two prepared papers, 30 to 40 minutes in length, followed by a discussion by two commentators, of about 15 minutes each. These meetings will be open to Harvard Summer School students and the public. On the afternoon following each meeting, a number of invited guests will meet for a further discussion in private. The prepared talks of the previous evening and two brief introductory commentaries will provide the introduction and stimulus for the afternoon discussion by the distinguished guests of the conference—philosophers, historians, scientists, public officials, and administrators.

The first evening (and the following afternoon session) will be directed by Karl T. Compton of Massachusetts Institute of Technology, and will be devoted to the general topic of science and society and the relations between the two, including something of the scientist's responsibility as it differs from that of the ordinary citizen. The second will be devoted to the relations between science and philosophy and will be directed by Professor Philippe Le Corbeiller of Harvard. The third will be devoted to science and history and will be directed by I. Bernard Cohen of Harvard.

Among those who definitely plan to take part in this conference are Percy W. Bridgman of Harvard University, Herbert Butterfield of Cambridge University, Marjorie Nicolson of Columbia University, Walter T. Stace of Princeton, and Jacob Loewenberg of the University of California. A number of other distinguished speakers are being invited to take part in this conference.

It is planned to invite about fifty guests. These will include leading figures in contemporary science, both pure and applied, some representatives of the government (both military and non-military) who are concerned with science, a number of educational leaders and teachers, and some scholars or specialists. This will provide the opportunity for bringing together a number of different groups who are, in one way or another, concerned with science or with its effects on human affairs. There will be a few guests from Great Britain and continental Europe, as well as some from Canada and Mexico.



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