Projection

Eric Yavitz was the Chairman, assisted by Robert Battey. There was a very interesting demonstration of a new system of projecting 35mm motion-picture film through a liquid gate. This was followed by four additional papers, two of which described new 16mm sound projectors. The Papers Sessions closed with two papers describing improved motion-picture projection lenses.

E. C. Hutter

J. A. Inslee

T. H. Moore

Society Awards

A special session for the presentation of awards was held on the evening of October 3 in the Agora Auditorium. President John W. Servies presided over the program; arrangements were under the direction of Byron Roudabush. Guest speaker was Lt. Col. John A. Powers, Public Affairs Officer, Space Task Group, NASA, who addressed the session on "The Astronaut," making special reference to communication techniques.

Fellows

Norwood L. Simmons, Chairman of the Fellow Membership Committee, presented certificates to those members elevated to the status of Fellow. The eighteen recipients were:

Frank G. Back	John H. Jacobs
James A. Barker	John Kiel
Kenneth Blair Benson	Don V. Kloepfel
James W. Bostwick	George A. Mitchell
Spencer W. Caldwell	Howland Pike
J. S. Courtney-Pratt	Forrest A. Richey
John A. Flory	Joseph Ruttenberg
John L. Forrest	Kurt Singer
William D. Hedden	Harry Teitelbaum

Journal Award

E. C. Hutter, J. A. Inslee and T. H. Moore were presented the 1961 Journal Award for their paper on "Electrostatic Image and Recording." The paper, which appeared in the January 1960 *Journal*, presented a method of image recording through simultaneous pickup and electrostatic storage of optical information by the use of a transducer. John L. Forrest, Chairman of the Journal Award Committee, presented the citation to the authors who are all with the Astro Electronics Division of RCA.

Four outstanding papers were recognized by the Journal Award Committee. Honorable Mention was given to: Norikazu Sawazaki, Motoi Yagi, Masahiro Iwasaki, Genya Inada and Takuma Tamaoki, Central Research Lab, Tokyo Shibaura Electric Co., Ltd., for "A New Video-Tape Recording System"; L. J. Krolak, RCA, Walter P. Siegmund, American Optical Co., and Robert G. Neuhauser, RCA, for "Fiber Optics — A New Tool in Electronics"; Rudolf Kingslake, Eastman Kodak Co., for "The Development of the Zoom Lens"; and Fred H. Perrin, Eastman Kodak Co., for "Methods of Appraising Photographic Systems: Part II — Manipulation and Significance of the Sine-Wave Response Function."

E. I. du Pont Gold Medal

For his basic pioneering research on the image converter camera, J. S. Courtney-Pratt, Bell Telephone Labs, was presented the E. I. du Pont Gold Medal. The award, established in 1960 to be presented annually for outstanding contributions to the development of techniques and equipment in the fields of instrumentation and high-speed photography, was presented to

Dr. J. S. Courtney-Pratt, Bell Telephone Labs, receives the E. I. du Pont Gold Medal.

Dr. Courtney-Pratt by Charles W. Wyckoff, Chairman of the E. I. du Pont Gold Medal Award Committee.

A native of Hobart, Tasmania, Australia, Dr. Courtney-Pratt is a graduate of the University of Tasmania and the University of Cambridge, England.

During World War II, he was associated with the Council for Scientific and Industrial Research in Australia and later with the British Admiralty. During that time he was engaged in research in ballistic instrumentation.

From 1945 to 1957, as a Research Student, Fellow of Gonville and Caius College, ICI Fellow and Assistant Director of Research in the Departments of Physical Chemistry and Physics at the University of Cambridge, Dr. Courtney-Pratt was concerned with research in applied physics, optics, multiple beam interferometry, high-speed photography, instrumentation, friction, adhesion, and the physics of the contact of solids.

In 1958 he joined Bell Telephone Laboratories and since that time he has been engaged in research in methods of high-speed photographic recording, x-ray recording, optics, optical instrumentation, optical masers, and fiber optics, as well as research in the properties of materials, strain measurement, adhesion, friction and the contact of solids.

Universally acclaimed for his varied scientific capabilities, Dr. Courtney-Pratt was awarded the Sir Charles Vernon Boys' Prize for experimental physics in 1954 and the Civic Medal in Paris in the same year. In 1958 he was selected a Fellow of the Royal Photographic Society of Great Britain. For his many outstanding contributions to high-speed photography, the Photographic Society of Vienna bestowed its Gold Medal upon him during its 100th anniversary celebration in 1961.

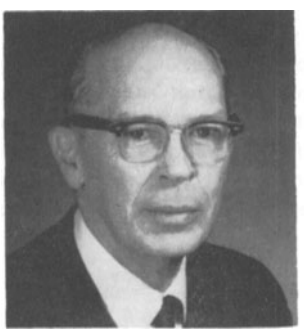
Since 1940 he has served as a consultant to government departments and industrial firms in Europe, Australia and the United States.

During the past twenty years, Dr. Courtney-Pratt has published fifty technical papers and reports in the field of high-speed photography, including an outstanding work on *Image Dissection in High-Speed Photography*, as well as forty papers in other fields.

He is Editor of the *Proceedings* of the Fifth International Congress on High-Speed Photography. During the Fifth Congress, Dr. Courtney-Pratt served as Associate Program Chairman for Papers from Abroad.

He is an Associate of the Institute of Physics of England, an Associate Member of the Institution of Mechanical Engineers of England, a Fellow of the Royal Photographic Society of Great Britain, a Fellow of the Cambrige Philosophical Society, a Member of the Society of Photographic Instrumentation Engineers and a Fellow of the Society of Motion Picture and Television Engineers.

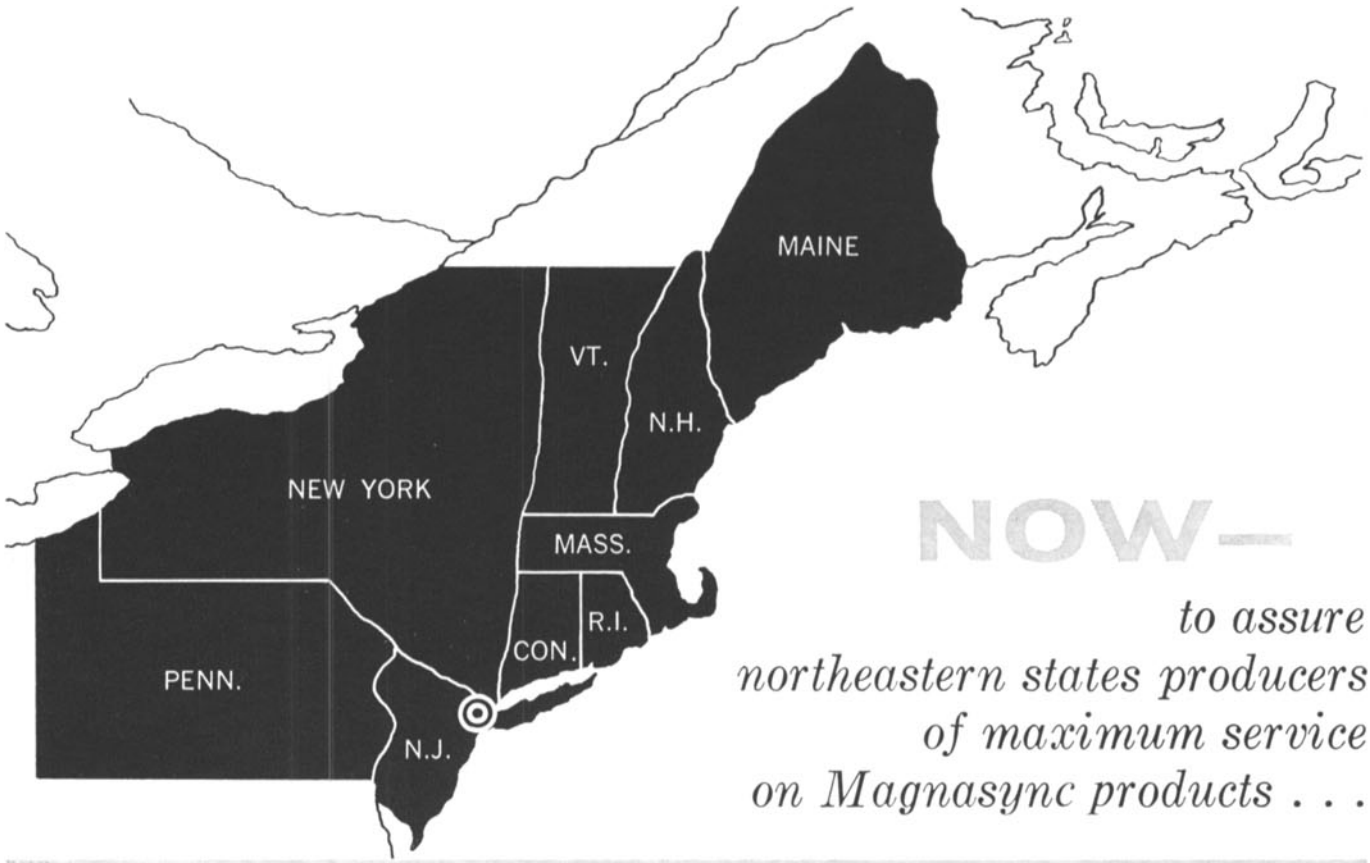
Herbert T. Kalmus Gold Medal



Ralph M. Evans, Eastman Kodak Co., was presented the Herbert T. Kalmus Gold Medal "because of his work in color photography since 1928, including his many contributions in the field of professional color motion pictures; and for his fundamental studies in the related field of visual perception of color which have been communicated in a series of valuable lectures, and in two books noteworthy for clarity of writing and exposition for the layman as well as the scientist and engineer."

In the absence of the Chairman of the Herbert T. Kalmus Gold Medal Award Committee, Herman H. Duerr, Ansco Technical Division, the citation was presented to Mr. Evans by Deane R. White, Engineering Vice-President.

Mr. Evans is the Director of the Color Technology Division of Eastman Kodak Co. During his many years in this capacity he has been closely associated with work on the development of new motion-picture films and processing laboratory techniques. In addition, he has carried on fundamental



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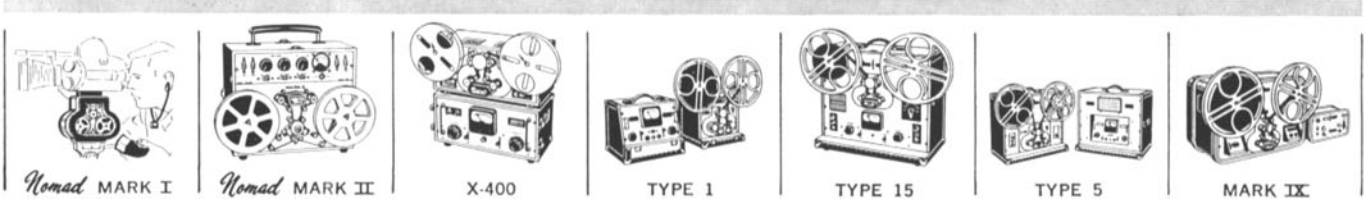


International leaders in the design and manufacture of quality magnetic recording systems

Norikazu Sawazaki, Tokyo Shibaura Electric Co., Ltd., receives the Journal Honorable Mention Award from President Servies.

The Samuel Warner Memorial Award is presented to Walter R. Hicks, Reeves Soundcraft Corp.

studies in the specialized field of visual perception.

His long association with color photography began in 1928. Upon receiving a B.S. in theoretical physics from Massachusetts Institute of Technology, Mr. Evans joined the Kodak Research Laboratories and worked on amateur color motion-picture films. A year later he became a member of the staff of Fox Film Corp. in the field of color photography. He returned to Kodak in 1935, and in 1940 was made assistant superintendent of Color Processing and Development in the Research Laboratories. In 1945 he was appointed superintendent in charge of the newly formed Color Control Department in the Film Manufacturing Division. In 1953 the name was changed to the Color Technology Division with Mr. Evans as the director, the post which he still holds.

Mr. Evans is a Fellow in four professional societies; the Society of Motion Picture and Television Engineers, the Society of Photographic Scientists and Engineers, the Optical Society of America, and the Illuminating Engineering Society. In addition, he is an associate member of the American Psychological Association and holds membership in the American Society for Aesthetics. He has been very active in the Inter-Society Color Council — the chairman of the delegates of the Society of motion Picture Engineers to this Council for many years, a past chairman of the Council, and secretary of the Council since 1952. He is also an honorary member of Sigma Xi.

He was the recipient of the Samuel Warner Award of the Society of Motion Picture Engineers, 1949, and the Progress Medal of this Society in 1957. In addition, Mr. Evans received an award "for distinguished service to the field of professional photography" from the Professional Photographers of America in 1955, and the Godlove Award from the Inter-Society Color Council in 1959.

Mr. Evans continues his interest in, and investigation of visual phenomena related to color. In his latest book, *Eye, Film and Camera in Color Photography*, he presents this complex subject in a form useful to those involved in making color pictures.

Samuel Warner Memorial Award

In recognition of his outstanding contributions in the design and development of methods and apparatus for sound-on-film in motion pictures, Walter R. Hicks, Vice President in Charge of Special Projects, Reeves Soundcraft Corp., was the recipient of the Samuel L. Warner Memorial Award. In the absence of the Warner Award Committee Chairman, Loren Ryder of Ryder Sound Services, the award was presented by Norwood L. Simmons, Past President.

Upon receiving a B.S. in mechanical engineering from Catholic University in 1927, Walter R. Hicks was employed by Fox Movietone News. There he participated in the early production of newsreels and helped to develop early film recording practices using glow lamps, light valves and galvonometers. In 1944 Mr.

Hicks began his association with Reeves Sound Studios where he remained until 1947 when he joined Reevesound Co., Inc.

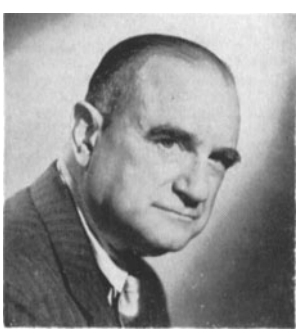
Among his many developments in the field, Mr. Hicks has been awarded patents for an automatic radio paging system using 16mm photosound audio slides, a double-system film-driven magazine magnetic recorder, an electro-mechanical talking book, and a book with (mechanical) talking pages.

In addition to his patented developments. Mr. Hicks has made many other contributions to the field including; a biplanar, two-string, variable-density light valve; a reverse biased, nonclashing, two-string variable-density light valve operating from zero mils mean spacing; a crossed string, fixed slit, push-pull variable-area light valve; a xerographic sound-recording system; an automatic splice-actuated photosound de-blooper; 16mm and 35mm photo and magnetic sound recording and reproducing systems including recorders, re-recorders, projectors and footage counters, interlocked and reversible; a nonintermittent 16mm film editor for photo and magnetic soundtracks with picture; an early multitrack magnetic sound recording and reproducing system; early electronic printer systems; magnetic flight-instrumentation recorders; and magnetic facsimile storage recorders.

As further testimony to his ability, Mr. Hicks has been called upon to install sound-recording and motion-picture installations in the United States as well as Venezuela, Cuba, Canada, Iraq, Pakistan and Puerto Rico.

At present Mr. Hicks is involved in the development of special devices involving magnetic media; research and development in the fields of instrumentation, facsimile and electro-mechanical devices; and special motion-picture recording and projection applications.

Honorary Membership



Alfred N. Goldsmith, consultant engineer, cited for his many eminent services to the advancement of engineering in motion pictures and television, has become the tenth member during the 45-year history of the Society to be elevated to honorary membership status. The award was presented by Executive Vice-President Reid H. Ray, in the absence of Barton Kreuzer, committee chairman.

Dr. Goldsmith, a Past-President of the Society, has been a member of SMPTE for 33 years. He is a graduate of the City College of New York and Columbia University.

A professor of electrical engineering at CCNY from 1918 to 1923, he was vice-president and general manager of Radio Corp. of America during the 1923 to 1931 period. Since 1933, Dr. Goldsmith has served as a consulting engineer for Radio Corp. of America, the National Broadcasting Co. and Eastman Kodak Co.

Chairman of various panels of the National Television Systems Committee from 1940 to 1954, Dr. Goldsmith received the Modern Pioneer Award from the National Association of Manufacturers in 1940, the Medal of Honor from the Institute of Radio Engineers in 1941, the Townsend Harris Medal from the College of the City of New York in 1942, the Medal Award from the Television Broadcasters Association in 1945, the Achievement Award from the RCA Laboratories in 1950, the Special Citation from the Radio Pioneers in 1952, the Founders Award of the Institute of Radio Engineers in 1954, and the Progress Medal Award of the SMPTE in 1956.

The holder of nearly 200 patents in the fields of motion pictures, radio, television, color television and air conditioning, Dr. Goldsmith is currently concerned with industrial and defense projects primarily in the electronic, television and motion-picture fields.

Among many other organizations, he holds membership in the American Institute of Electrical Engineers, the American Physical Society, the American Association for the Advancement of Science, the Acoustical Society of America, the New York Academy of Sciences, and the International College of Surgeons.

Progress Medal

For continued technical contributions over a period of years, Cyril J. Staud, Vice-President and Director of Research, Eastman Kodak Co., received the Progress Medal Award. This Award is given in recognition of research and development which has resulted in significant advances in the development of motion-picture or television technology. Dr. Staud was introduced by John G. Frayne, committee chairman and recipient of the Progress Medal in 1947.

Cyril J. Staud was born in Rochester, New York, on October 19, 1898. He attended the University of Rochester where he received his B.Sc. in 1920 and his M.Sc. in 1922. He held an honorary fellowship in the department of chemistry at the Massachusetts Institute of Technology in 1923 and was granted a Ph.D. in Organic Chemistry by that Institute in 1924.

Dr. Staud joined the Research Laboratories of the Eastman Kodak Co. in July 1924 as a research chemist and later became research supervisor doing research on cellulose and cellulose derivatives in the department of organic chemistry. In these fields, his pioneering research in cellulose ester technology played an important part in Kodak's production of improved safety film.

In 1931 he was appointed head of a newly organized emulsion research division. While he was superintendent of this division, Dr. Staud actively guided research and development activities which resulted in significant advances in photographic emulsions. Researches under his direction resulted in new emulsion making techniques and in the introduction of new black-and-white and color materials. Under his supervision, the emulsion research division also made numerous special emulsions for various scientific uses of photography, including astronomy, spectroscopy, and nuclear physics. He also encouraged basic research on photographic emulsions, spectral sensitivity, and latent image formation.

From 1943 to 1947, Dr. Staud served as Acting Director of the Research Laboratories whenever the Director, Dr. C. E. K. Mees, was absent. In August 1947 he was appointed Director. In November 1955 he was elected Vice-President in Charge of Research to succeed Dr. Mees who retired at that time.

He has published numerous scientific papers on several subjects including cellulose and its derivatives, photographic emulsions, industrial research, color photography and documentary reproduction.

A prolific inventor, he has had well over 100 U.S. and foreign patents issued to him. Dr. Staud has lectured before many technical, industrial and university organizations.

Since he became director of the Laboratories in 1947, the research interests have broadened considerably. Working closely with the manufacturing divisions, new materials and processing equipment have been developed in both amateur and professional photography as well as specialized applications. Examples of the last are television, documentation, radiography and graphic arts. An intensive program of research in color has been continued under Dr. Staud's supervision, which resulted in the manufacture by the Kodak Co. of several new color materials, the most recent being the new Kodachrome II Film.

In addition to technological investigations, strong emphasis has been continued on basic theory with the publication by the Laboratories of many scientific papers.

Dr. Staud has been a member of the American Chemical Society for many years and served as Secretary of the Cellulose Division 1927–31. He is a Fellow of the Photographic Society of America, the Society of Motion Picture and Television Engineers, the Royal Photographic Society of Great Britain, the New York Academy of Science, the Society of Photographic Scientists and Engineers, and the Rochester Museum of Arts and Sciences. He is a member of the American Association for the Advancement of Science, the Optical Society of America, and the Professional Photographers of America. Two honorary

fraternities list him as a member: Sigma Xi (honorary scientific) and Alpha Chi Sigma (honorary chemical).

One of the earliest radio amateurs in the Rochester area (since 1910), Dr. Staud still operates a transmitter having the present call K2DQ. He is a member of the American Radio Relay League. During World War I, he was a member of the Student Army Training Corps at the University of Rochester. In the summer of 1922, he worked on the synthesis of high explosives for the U.S. Army Ordnance Department. During World War II, he was a member of the Rochester War Research Committee. Presently he is a member of the New York State Advisory Council for the Advancement of Research and Development.

As the Director of one of the largest research laboratories in America, Dr. Staud has shown strong leadership, both technically and administratively. His receptive mind, his enthusiasm for investigation, and his outstanding ability to foresee clearly the practical application of ideas have distinguished his work for many years.

Response by Dr. Staud

Edited from an address given by Dr. Staud following the presentation to him of the Society's Progress Medal for 1961 at the Awards Session on October 3, 1961, at the Lake Placid Club, Essex County, N.Y.

Progress in Cinematographic Materials

The name of the Society of Motion Picture and Television Engineers implies, as I see it, a combining of the efforts of those engaged in work on silver halide photography on the one hand, and those working in the field of electronics and associated subjects on the other. Some of the Progress Medalists have been from the latter, and some from the former. It would not be appropriate to distinguish between the two, since in television motion pictures play such an important part and, conversely, television has had such a profound effect on professional motion pictures.

In the early years of 1924–1931, my efforts were directed largely toward the cellulose ester technology, and it was of course uppermost in our minds that we might attain an improvement in the film base used in the motion-picture field. As a result of a group effort, we did attain a modicum of success, although of course there have been marked advances in the cellulose ester technology and in film base made from cellulose esters during the intervening period.

In 1931, I was asked to take charge of the Emulsion Research Division of the Laboratories. Emulsion Research was a new division formed at that time, and it was the desire of the Kodak management that someone be placed in charge who would bring to it a knowledge of organic chemistry which had not been widely employed in silver halide emulsion technology to that time. This may be an ad hoc, propter hoc explanation. At any rate, it resulted in the introduction of organic compounds into silver halide photography in a fashion which, so far as I know, had not previously been attempted.

Kodachrome and Other Color Processes. It was shortly after the founding of the Emulsion Research Division of the Kodak Research Laboratories that serious work was begun on the Kodachrome process. This was greatly facilitated by the discovery at about that time of sensitizing dyes which did not wander from layer to layer. Since a color photographic material, which had a multilayer structure, was required, this was a matter of great significance to us. There were intensive efforts and many headaches in these early years which resulted from attempts to produce a material which could yield a pleasing color motion picture on a projection screen for amateur use. Subsequently, a modification of this process was used by Technicolor under the name of Monopak. The use of Monopak involved special laboratory work for which at that time only Technicolor was equipped. Even under these conditions, the results were not entirely adequate, and the incorporated coupler materials soon replaced Monopak. However, it was not until 1950 that the color negative-positive process was introduced, and it was in this area that those of us in the Emulsion Research Division and those concerned with processing found our greatest challenge. The quality requirements of a professional color negative and color print presented problems which were much more difficult than any which we had solved previously. The invention of colored couplers for use in the color negative had, of course, a very definite effect, and contributed greatly to the color quality which we could achieve in a professional color print material.

The matter of an intermediate film not only presented difficulties from the investigational point of view, but appeared to present an almost impossible situation from a production standpoint. I would therefore like to take this opportunity to mention that exploratory work, early-development and late-development work cannot contribute to progress in any field unless it is followed by satisfactory production. This, again, means not only suitable machines but competent people with enthusiasm and a will to overcome obstacles. This was exemplified in a singular fashion in the intermediate color film which was made available originally for professional color motion-picture use in 1951, and in a greatly improved form in 1956. The problems of production of this material cannot fully be appreciated by the users.

However, while work in the field of color photography, both for projection in theaters and for broadcasting by color television transmitters, has had its spectacular aspects, work on black-and-white films for professional use in motion pictures and in television has not been neglected.

Films for Television. There have been significant advances in the characteristics of black-and-white negative materials used for motion pictures and for television. This has been largely in the direction of increased sensitivity with decreased graininess. For television, specifically, there have been produced several new types of films, including new materials for kinescope recording. When using the new fast films in studio production work, an important advantage is that less light is required on the set which means lower production costs.

The problems associated with television, in terms of optimum set lighting to maintain the scale within that of the television transmission system, and to improve the quality of kinescope presentations, have been the subject of considerable investigation. As a result, it appears that the overall progress in this area has been such as to afford those of you who produce motion pictures the materials with which considerable improvement in quality has been attained. Furthermore, it appears probable that the theater-going and the television-watching public has been conscious of the improvement in quality which is seen on the theater screen and on the home television receiver. Here, again, those of us who have been concerned with the developments in this field have been able to make progress as a result of our combined ideas and efforts.

Special Applications of Motion Pictures. Motion-picture photography, of course, finds many applications outside the field of entertainment from the standpoint of both the professional and the amateur. In the field of science, considerable use of motion pictures has been made, and very effectively, in time-lapse photography. This has been employed in such fields as the study of the formation of crystals and the growth of flowers, to name two rather common examples. These are of importance to the crystallographer and to the botanist. In the field of technology, it is frequently necessary to investigate the operation of machines. The stroboscope has of course been a great help in observing moving mechanical parts, but of greater importance has been the use of high-speed motion-picture photography. Uses of motion-picture photography in this field have increased greatly during recent years, and the bibliography prepared for the Fifth International Congress on High-Speed Photography in 1960 has about 1400 references. Motion-picture photography in connection with the launching of rockets and their behaviour in flight is of course familiar to all of you. This is an expanding application which will probably find increased use in the future.

It might be of interest to consider for a moment the relation of motion-picture photography to time. It enables us to review events in the rather distant past, such as the return of troops in World War I. In high-speed photography, time is expanded so that events occurring very rapidly can be observed as proceeding slowly. In those cases where the rates are low, such as the growth of flowers, time can be compressed by time-lapse photography. Motion pictures of the launching of a rocket record the present or the very recent past. Through motion pictures, therefore, we can, in effect, bring back past time, compress and expand time, and record the present, but what we would like most of all, unfortunately, motion pictures cannot do — tell us of events to come.

There are of course many other fields of photography in which we have participated from various standpoints over the years, including new materials for use

by the astronomers. It was a source of vicarious satisfaction to learn that last year it was possible to record on the surface of the earth objects which are 6 billion light years away. When the light left these objects, the world was very young; probably the world is still young in comparison to what the future may hold.

It appears certain to me that in the coming decades the progress which will be made will dwarf that which has taken place. The work of the Progress Medalists of this decade will be regarded as "earlier developments" by those who may feel that our efforts, while possible pioneering, were, in the light of subsequent achievements, rather primitive.

In conclusion, I wish to thank those who have brought about the award of the Progress Medal to me this evening, and to tell you that my appreciation will not cease with the closing of this session of the Society of Motion Picture and Television Engineers, but will continue on into the amazing future which we see ahead.

6th International Congress on High-Speed Photography

A folder in English, French and German, received from the Congress Chairman, Dr. J. G. A. de Graaf, contains more details to be added to the information about the 6th Congress published in the November *Journal*, p. 915. The preliminary program of the Congress, which will take place at the Kurhaus Hotel, Scheveningen, The Netherlands, September 17–22, 1962, will be as follows:

Sunday, September 16

Afternoon and evening: Registration at the Congress Bureau, Kurhaus Hotel, Scheveningen
Evening: Informal gathering

Monday, September 17

Morning: Inaugural session
Afternoon: Plenary session
Evening: Dinner (Javanese rice-table)

Tuesday, September 18

Morning: Plenary session
12:00 Noon: Opportunity to attend the State opening of Parliament by Her Majesty the Queen of the Netherlands
15:00: Plenary session
Evening: Free