PROCEEDINGS OF THE SEMI-ANNUAL BANQUET

OF THE

SOCIETY OF MOTION PICTURE ENGINEERS

HOLLYWOOD-ROOSEVELT HOTEL

OCTOBER 23, 1940

Nearly 350 members and guests of the Society assembled at the 47th Semi-Annual Banquet held at the Hollywood-Roosevelt Hotel, Hollywood, Calif., on October 23rd. Guests at the Speakers' table were: President E. A. Williford; the Hon. Fletcher Bowron, Mayor of the City of Los Angeles; Mrs. Fletcher Bowron; Mr. Walt Disney, recipient of the 1940 Progress Medal; Major Nathan Levinson, citationist for Mr. Disney; Mrs. Nathan Levinson; Dr. Edison Pettit, representing Dr. Robert R. McMath, recipient of the 1939 Journal Award; Mrs. Edison Pettit; Dr. J. G. Frayne; Dr. Lee de Forest, Honorary Member-Elect of the Society; Mrs. Lee de Forest; Mr. Earl Theisen, Chairman of the Historical Committee recommending honorary membership for Dr. de Forest; Mrs. Earl Theisen; Mr. Emery Huse, President-Elect of the Society for 1941; Mrs. Emery Huse; Mr. and Mrs. L. L. Ryder; Mr. Rudy Vallee; Mr. and Mrs. Keith Glennin; Mr. James Cagney; Mr. James Frank, Jr.

After introducing those seated at the Speakers' table, President Williford announced the results of the election of Officers and Governors of the Society for 1940, which were as follows:

****President:** EMERY HUSE
****Executive Vice-President:** HERBERT GRIFFIN
****Editorial Vice-President:** ARTHUR C. DOWNES
****Convention Vice-President:** W. C. KUNZMANN
***Secretary:** PAUL J. LARSEN
***Treasurer:** GEORGE FRIEDL, JR.
****Governor:** MAX C. BATSEL
****Governor:** LORIN L. RYDER

* Term Expires December 31, 1941.
** Term Expires December 31, 1942.

Following this announcement, President Williford gave a brief description of the nature of the Progress and Journal Awards made each year by the Society at the banquet of the Fall Convention, and called upon Major N. Levinson, Chairman of the Progress Award Committee, to announce the recipient of the Award for this year, and to give an account of the work of the recipient forming the basis for the award:

WALT DISNEY

RECIPIENT OF THE SMPE PROGRESS MEDAL

NATHAN LEVINSON

The newspaper comic strip has for a great many years been quite an institution in American life, and it was to be expected that sooner or later it would make its way to the motion picture screen. The purpose of the comic strip has always been to amuse, and since the motion picture has always been a powerful medium of amusement and entertainment, the application of cartoon principles to the motion picture was a logical feature in the development of the motion picture art.

Cartoons were used in motion picture almost from the very beginning, as would be expected from the fact that the motion picture as we all know, is merely a succession of still pictures; and if these still pictures can be made by photographic means, they can be made also by artists using pen and pencil.

There have been many in the history of the motion picture who have been active in the introduction and development of the cartoon, but there is one man who stands head and shoulders above them all, in that he has not only produced cartoons, but has developed them far beyond what ordinary persons like ourselves could imagine only a few years ago. To make a cartoon, and to make a real living thing out of it; to develop it into lovely colored bits of fantasy and story; to make the characters of legend and fairy tales come to life, and walk and talk, and arouse in us emotions equal to those we experience when viewing pictures of live human actors—it is almost too much to believe.

I am sure, after these remarks, the name of the person to whom I refer, who has this year been awarded the Progress Medal of the

Society of Motion Picture Engineers, is still a deep secret. But, just between us, it's Walt Disney—the man whose "Mickey Mouse" and "Minnie Mouse" are important matters to all the children of America

WALT DISNEY

and to millions of children in other countries, and add immeasurably to the pleasure and happiness also of sophisticated grown-ups. The Disney *Silly Symphonies*, those lovely colored fantasies, are, without

doubt, America's finest contribution to the world's folklore. Legend and fairy tales have come to life and have become part of our own lives.

But about Walt Disney himself: He was born in Chicago in 1901, of Irish-Canadian and German-American descent. His father was a contractor and builder in Chicago for twenty years. Later the family moved to Marceline, Missouri, where Walt had his early schooling and went into the business of selling newspapers and indulging in amateur theatricals. On amateur nights in neighborhood theaters, he often gave impersonations of The Great Chaplin, for which he sometimes won prizes amounting to as much as $2. Later in Chicago he tried a Dutch comedian act, which ended his stage career.

But the thing he always liked to do best was to draw pictures. He never knew why, since no one else in the Disney family was at all artistically inclined. At the McKinley High School in Chicago, Walt divided his attention between drawing and photography, doing illustrations for the school paper, and at the same time trying to make motion pictures with a camera and projector he had bought. Not content with going to school in the daytime, he also went to night school at the Academy of Fine Arts where he studied cartoon drawing under Leroy Gossitt—a member of the old Chicago *Herald* staff.

With school over, he had to find a job. He became a "news butcher," selling peanuts, candy, and popcorn to the passengers on trains between Kansas City and Chicago. But this venture did not last very long; it was not very profitable and young Disney—he was fifteen at the time—had to eat.

In 1918, he had a brief job with the Chicago Postoffice as a downtown letter carrier in the daytime and a route collector at night. The great war, at about that time, became really serious with America, and Disney felt that he ought to enlist. Turned down by the Army, the Navy, and the Canadian Enlistment Office on account of his age, Walt began to feel as if he were too young for anything. He finally was able to join the American Red Cross as a chauffeur and was sent overseas. He had the distinction of driving one of the most unusual ambulances in France—for with all the excitement of the war, he had not forgotten his drawing. His vehicle of mercy was covered from stem to stern with works of art—no wartime camouflage—but original Disney sketches.

With the war ended and with Disney's return, he did not want to go back to school, but felt that he ought to do something practical, con-

structive. He took a job with an advertising concern in Kansas City, doing sketching and free lance work designing letterheads and theater slides, when one day he noticed an advertisement of a slide company in Kansas City who wanted a cartoonist. This was the beginning of his cartoon work, using the old cut-out method of animation, joining arms and legs together with pins and moving them under the camera. His home experiments led to the making of a short reeel of local Kansas City incidents, which he sold to the owner of three large local theaters at 30 cents a foot. *Mickey Mouse* and *Silly Symphonies* today cost well over $25 a foot. His home experiments continued and his next production was a short subject called "Little Red Ridinghood." He left his job with the slide company and formed his own company, to produce modernized fairy tales.

To recite all the vicissitudes with which he had to contend in starting his company, seeing it fail, and trying to regain his financial backing, would take hours. Walt had by this time married Lillian Bounds, who had been one of his assistants in operating the camera in producing the *Alice* cartoons. Many attempts were made to interest producers and exhibitors in his early cartoons, *Alice, Oswald the Rabbit*, and several others, until one day the thought occurred to him to feature a cute little mouse that used to crawl round his desk when he was working with the slide company in Kansas City. "Mickey" he called the mouse, and he worked enthusiastically on his first *Mickey Mouse* scenario. Mrs. Disney helped with suggestions and encouragement. His "Mickey" had to have a sweetheart, of course—they called her "Minnie Mouse," and thus was born the first *Mickey Mouse* cartoon, which was later to take the world by storm. Several *Oswald* subjects were also in work for a New York company, but they worked on the *Mickey Mouse* story at the same time, in their garage. When completed, it seemed rather disappointing, but Walt sent it off to New York. No one in the East seemed to want Mickey Mouse. *The Jazz Singer* had just been released with sound, and the first Mickey Mouse cartoon was silent. Who could have thought at that time of such a thing as a cartoon synchronized with sound.

In spite of its failure to sell, Disney went to work on a second Mickey Mouse, and planned a third, which he sent to New York to be synchronized with sound. The third Mickey Mouse *Steamboat Willie*, was the first to be shown publicly.

Despite a number of setbacks and dissension in the ranks, Disney kept at work. He developed his own system of synchronization,

formed his own company for producing and distributing *Mickey Mouse* pictures independently, and the rest of the story everyone knows. Mickey Mouse got a great welcome from the public and the Disney business grew. His company expanded, and although experience artists were hired, Walt soon felt that it was wiser to train his own men to the Disney Way of thinking and doing. As the staff grew, there were changes; whereas five years ago, the Disney organization consisted of twenty-two people, there are now more than one thousand employees, with a research department, music librarians, and many other adjuncts. Improvements in the development of the cartoons, in the technic of producing the individual still pictures, in photographing them, all these followed one after the other. But aside from the technical developments of cartoon making for which Disney was responsible, Walt still remained the artist. His Silly Symphonies, the first of which was the *Skeleton Dance*, were based on musical themes without special central characters, producing effects of atmosphere and emotional reaction rather than attempting to develop any particular story lines. So the Disney developments kept on, proceeding to the production of complete feature-length stories in cartoon form—*Snow White and the Seven Dwarfs* and *Pinnochio*. In addition to the considerations upon which the award has been made, I was privileged to see the forthcoming production *Fantasia* last Saturday night at the Disney Studio. This latest Disney production is beyond description in language at my command. Speaking from technical angles, more has been done with color, sound, and ideas in *Fantasia* than I ever dreamed possible. I can only say that the production is a magnificent technical achievement, and I am sure Walt will again be acclaimed for the wonderful and daring advancement of this art.

Walt has always been a creator—a creator of personalities. Mickey Mouse is a real person, on the screen and in the minds and hearts of the hundreds of millions who know and love him. He has a distinct personality, along with Minnie Mouse, Pluto, Donald Duck, and all the rest. The Silly Symphonies roam far afield in the land of fantasy. In addition to the artistic and human interest in his productions, the value of the technologic developments for which Walt has been responsible cannot be over-estimated. It is on the basis of all of this that I have said, and much more that could well be said, that I have the pleasure of informing you, Mr. President, that the Progress Award Committee and the Society of Motion Picturre Engineers

nominated Walt Disney for the SMPE Progress Medal for 1940.

At the conclusion of Major Levinson's address, President Williford presented the Progress Medal to Mr. Disney with the citation:

TO WALT DISNEY:

In recognition of his major contributions to Motion Picture technology, in the establishment of correspondingly advanced laboratory facilities and methods in the photography and sound recording of feature and short cartoon films, and in the evolution of outstandingly adequate technic in color and black-and-white cartoon film production.

Following the citation by President Williford and the presentation of the medal, Mr. Disney briefly thanked the Officers of the Board of Governors and members of the Society for the honor thus bestowed upon him.

President Williford next called upon Dr. J. G. Frayne, Chairman of the Journal Award Committee, to name the recipient of the Journal Award for 1939, and to present an historical account on the basis of which the award has been granted. Dr. Frayne spoke as follows:

ROBERT R. McMATH

RECIPIENT OF THE SMPE JOURNAL AWARD

J. G. FRAYNE

In selecting the paper for the Annual Journal Award of the Society for the year 1939, the Journal Award Committee has chosen a paper that does not deal with any of the ordinary mundane subjects confronting the motion picture industry, but instead, deals entirely with celestial matters. The subject of the paper is *The Surface of the Nearest Star* and the author is an astronomer rather than a motion picture engineer. The winning paper and its associated motion picture films depict by extension of motion picture technic to the spectroheliograph—a science known as spectroheliokinematography—the storms that whirl around the sun spots of our nearest star . . . . the sun, and the intricate motions of the mighty gaseous prominences that rise for thousands of miles above the solar surface, and move and disintegrate with speeds ranging from few to several hundred miles per second.

These pictures are unique because no other installation exists at present for similar motion picture records of solar phenomena. The films described in the paper show scenes of unexampled grandeur and

R. R. McMATH

make us realize that the surface of our nearest star has an unending maelstrom of motions due to titanic forces, the precise nature of which cannot as yet be regarded as completely explained.

The author of this paper is Dr. Robert R. McMath, Chairman of the Board of the Motors Metal Manufacturing Company of Detroit. He was born in Detroit, Michigan, in 1890 and graduated from the University of Michigan with the degree of Bachelor of Civil Engineering in 1913. Following his graduation he occupied several engineering positions with structural engineering concerns. During the World War he served in the aeronautics department of the Air Service, entering as a Second Lieutenant and being discharged into the Reserve Corps as a Major. He was appointed General Manager of the Motors Metal Manufacturing Company in 1922 and has been identified with that company ever since, having been Chairman of the Board since 1939. Since 1928 he has served as a Director of the McMath-Hulbert Observatory of the University of Michigan. In 1929–30 he found time to design and build the $10^1/_2$-in. telescope and its dome and in 1935–36 he designed and built the 50-in. telescope of the McMath-Hulbert Observatory of the University of Michigan.

From 1929 to the present he has been Honorary Curator of Observatories of the University of Michigan. In 1933 he received the honorary degree of Master of Arts of the University of Michigan and in the same year received the John Price Wetherill Medal of the Franklin Institute at Philadelphia. In 1936 he received the Rittenhouse Medal and honorary life membership of the Rittenhouse Astronomical Society of Philadelphia. In 1938 he received the honorary degree of Doctor of Science from Wayne University, Detroit, Michigan.

Dr. McMath belongs to numerous technical and scientific societies including TBΠ, ΣΞ; American Society of Civil Engineers; Fellow, Royal Astronomical Society, London, England; International Astronomical Union, Paris, France; American Astronomical Society; Optical Society of America; Advisory Committee, 200-Inch Astrophysical Project, California Institute of Technology; and member of the American Society of Motion Picture Engineers.

He is author of numerous publications dealing with such subjects as the McMath-Hulbert Telechron Driving Clock; Some New Methods in Astronomical Photography with Application to Moving Pictures of Celestial Objects; numerous papers in collaboration with Dr. Edison Pettit on spectroheliograph studies of solar prominences.

He is a much sought-after lecturer and has lectured before such learned societies as the American Philosophical Society, the National Academy of Science, the American Astronomical Society, the Royal Astronomical Society, and the British Association for the Advance-

ment of Science, on various features of his activities at the McMath-Hulbert Observatory.

Mr.President, the Committee feels that it is a rare honor for the Society to have such a distinguished gentleman and scholar contribute to the JOURNAL, and it feels confident that the selection of Dr. McMath's paper for the Journal Award will meet with the unanimous approbation of the Society.

At the conclusion of Dr. Frayne's address, President Williford presented the Journal Award certificate to Dr. Edison Pettit of the Mt. Wilson Observatory, representing Dr. McMath, who, unfortunately, was unable to attend the banquet. Dr. Pettit responded with appropriate words of thanks for Dr. McMath.

At the meeting of the Board of Governors of the Society, held on October 20th, Dr. Lee de Forest, inventor of the audion and responsible for numerous advances in motion picture technology, was proposed and approved for honorary membership in the Society.

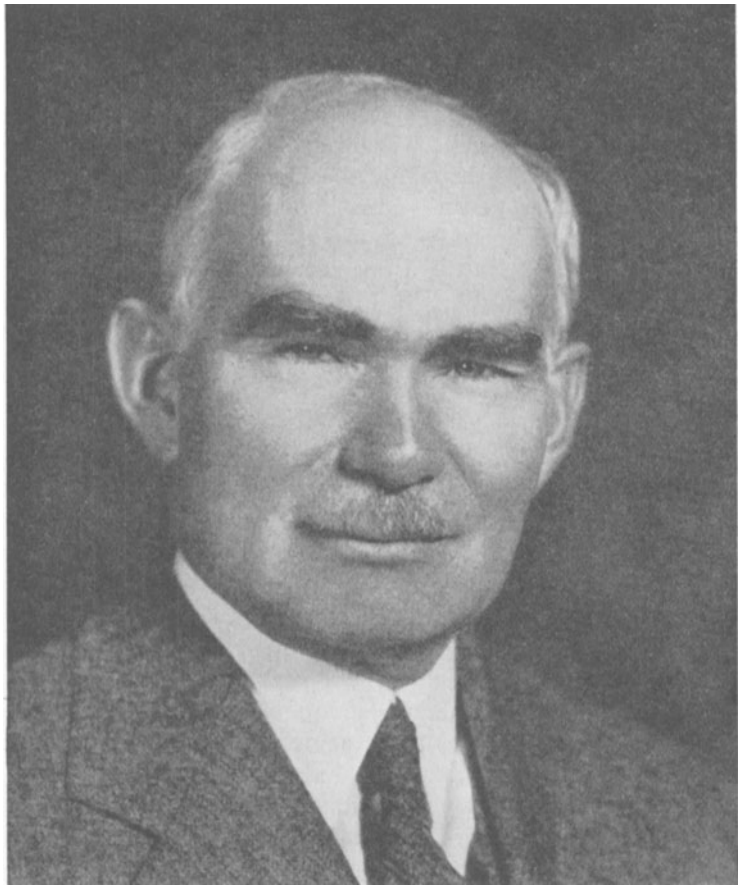
At the open business meeting of the Society held during the technical session on the evening of October 22nd, the proposal was duly ratified and validated. President Williford therefore, at the conclusion of Dr. Pettit's brief address, called upon Mr. Earl Theisen, Chairman of the Historical Committee initiating the proposal, to present an account of the work of Dr. de Forest leading up to the conferring of honorary membership upon him. Mr. Theisen spoke as follows:

THE WORK OF LEE de FOREST

Few names loom so large in the history of the development of the electronic arts and their application to the talking picture as does that of Lee de Forest.

Lee de Forest invented the audion detector tube which with the electronic amplifier opened a boundless field for scientific research. Through the medium of this new tool many a forgotten dream of the early inventor was brought to realization, such as long distance telephony, the scanning disk of Nipkow and Campbell-Swinton's cathode-scanning beam.

This prolific inventor and pioneer was born at Council Bluffs, Iowa, in 1873. He is the son of Dr. Henry Swift de Forest, a Congregationalist minister, who moved with his family to Talledega, Alabama, in 1879 when he became the first president of Talledega College.



LEE DE FOREST

Following preparatory work at Mt. Hermon Boys' School in Massachusetts, Lee de Forest followed his father to Yale University where he entered the Sheffield Scientific School. Following his graduation in 1896 he continued with graduate study. During this period he

enlisted in the Yale Battery, although he saw no outside service, and completed his studies, being granted his Ph.D. in 1899.

Dr. de Forest entered the service of the Western Electric Company in Chicago immediately after completing his work at Yale and was assigned to the dynamo works and the telephone laboratory of that organization. Thus his commercial career began in the field of electrical communication. The following year he left the employ of Western Electric to engage in private research in Milwaukee on the self-restoring detector. At this time the European wireless systems, led by the Marconi group, were using the coherer for detection. With the reception of each signal the filings grouped together and it was necessary to decohere them mechanically by tapping the tube. This slowed down the permissible speed of transmission. The use of the coherer together with the Morse inker and a relay was the reception method in general use. In Milwaukee de Forest began his research on the electrolytic detector which in itself, being self-restoring, was faster than the coherer, but in allowing the use of a telephone receiver for the audible reception of signals, greatly improved wireless reception. Using this method it was possible for an operator to distinguish audibly between signals and "static" and also between several sets of signals being received simultaneously.

Dr. de Forest returned from Milwaukee to become assistant editor of the *Western Electrician* during which time he carried on independent wireless research at the Armour Institute. In the summer of 1901 the American de Forest Wireless Telegraph Company was organized in Jersey City to exploit the de Forest equipment formed around the electrolytic detector. The next five years were spent on the development of this commercial equipment, vessels of the Clyde and Mallory steamship lines being equipped. The U. S. Navy also used de Forest equipment almost exclusively. The operations of the Company were further extended by the demonstration for the British General Postoffice of the first successful transmission across the Irish Sea, which took place between Holyhead, Wales, and Howth, near Dublin.

It was during this test that a loop antenna was used for the first time. In U. S. patent No. 827,523 such a loop was disclosed not only in the general form but also that in which the two sides were separated by one-half wavelength. In a further specification filed in May, 1904, the use of a directional loop mounted on a vertical axis is shown. This freedom of rotation about a vertical axis is the basis of the radio

direction finders of the present day. In patent No. 748,597, filed in December, 1902, de Forest described the use of a vertical antenna at the focal point of a reflector made up of parallel vertical rods arranged on the periphery of a parabola.

In the development of his system the inventor from the first used higher transmitting frequencies than did the other organizations. The directional antenna, the reflector antenna, and such other discoveries so preceded their adoption on a commercial scale that the patents expired before such use.

On January 20, 1905, Captain Lionel James described before the Society of Arts in London the use of the de Forest equipment for the reporting of the Russo-Japanese naval engagement at Port Arthur by the London *Times*. A station established aboard the *Haimun* transmitted Captain James' reports to the shore station at Wei-hai-wei from which they were forwarded to London by cable. This was the first application of the new wireless developments to news reporting.

Prior to the reorganization of the American de Forest Wireless Telegraph Company as the United Wireless Telegraph Company in 1906, the inventor had obtained more than sixty U. S. patents on wireless equipment and design. On July 1, 1905, de Forest successfully transmitted to a moving train of the Chicago and Alton R. R. running between St. Louis and Chicago. The United Wireless Company was subsequently purchased by the American Marconi Wireless Telegraph Company.

Due to the unwillingness of the United organization to provide the inventor with necessary funds to continue his audion research, de Forest left this Company in 1906. It was during this year that the first audion was made in the inventor's laboratory in the old Parker Building at 19th Street and 4th Avenue, New York City. The following spring the first actual transmission of music by wireless took place. This was from the Parker Building, the sound source being inductor alternators. During the summer twenty-six radio telephone transmitters for Admiral Evans' fleet were tested by the transmission of phonograph records. During this summer also the International Yacht Races on the Great Lakes were reported by radio telephone, the announcements being supplemented by phonograph records.

As early as 1909 de Forest attempted to market radio equipment for the amateur, a display being set up for this purpose in the Metropolitan Life Tower in New York. In January of that year the first

radio broadcast took place when, using an arc transmitter, the inventor broadcast the voices of Caruso and other Metropolitan Opera stars from the stage of the "Met." This program was received by numerous operators on ships then in New York harbor.

Shortly after this the inventor went to Palo Alto, Calif., where his research was continued. It was there, on August 6, 1912, that the feed-back oscillator circuit was discovered by de Forest. Although Alexander Meissner, a German inventor, Dr. Irving Langmuir of the General Electric Company, and Major Edwin H. Armstrong were other claimants to this discovery, de Forest's priority was upheld by the District Court of Appeals in Washington, D. C., on May 5, 1924, after a seven-year legal battle. The decision of the court was based largely upon written laboratory notes by de Forest who had always kept careful and systematic records of his experimental work.

Dr. de Forest established the first regular broadcasting at his laboratory at High Bridge, N. Y., during the summer of 1916, the programs being sent out on a regular schedule. These programs consisted of Columbia phonograph records, credit being given in the announcements to the Columbia Company. During the presidential campaign in the fall of that year the election returns were broadcast by this station in coöperation with the New York *American*. The establishment of this regular broadcasting service preceded by four years the operation of station *KDKA* of the Westinghouse Electric and Manufacturing Co., which began its service in 1920. Dr. de Forest initiated the first broadcasting on the Pacific Coast when this was begun by a station located in the California Theater in San Francisco in May of 1920. During these years of intensive research and development more than one hundred and fifty U. S. and foreign patents were granted the inventor, among these being several basic in their claims which dominate the radio art today.

Dr. de Forest, who is a Fellow of the American Institute of Electrical Engineers and of the Institute of Radio Engineers, is an active member of the Society of Motion Picture Engineers. Many honors have been bestowed upon him for his inventive genius. He has been awarded Gold Medals at the World's Exposition at St. Louis in 1904, and at the Panama Pacific Exposition in San Francisco in 1915. In 1920 he was granted the Cross of the Legion of Honor by France, and in 1923 he was given the Prix San Tour by the Academy of Sciences and the Institute of France. He has received the honorary degree of D.Sc., from the University of Syracuse in 1919 and from his alma

mater, Yale University, in 1926. In 1922 he was given the Medal of Honor of the Institute of Radio Engineers, in 1923 the Elliot Creson Gold Medal of the Franklin Institute, and in 1930 the John Scott Medal of the city of Philadelphia. He was made an Honorary Member of the Yale Chapter of Sigma Xi in 1929, and a member of the Aurelian Honorary Society of Yale in 1930. He is also a member of TBII.

Lee de Forest's work in the field of electrical communication has to some extent been influenced by his innate love for music. In his desire to make good music available to more people he has sought to do so by electrical means. That his first broadcast should have been from the Metropolitan Opera House is an indication of this desire, and it is interesting to note that the programs furnished by his broadcasting station at High Bridge consisted of recorded musical numbers.

With the development of broadcasting into the commercial stage, the inventor turned his attention to other fields of exploration. As early as 1913 de Forest had made experiments in recording with the Poulsen electromagnetic wire method. Six years later he began his researches on photographic means of sound recording with the definite purpose of providing a voice for the then silent picture.

In 1919 de Forest experimented with three methods of sound recording: (*a*) the speaking flame, (*b*) the tiny incandescent filament, and (*c*) the glow-tube. The latter soon showed itself to offer the most hope of practical success. He first demonstrated a combination of sound-on-film with picture at his Highbridge Laboratory in the spring of 1921. To quote de Forest: "This early work, when apparently only we two (William Garity and myself) believed there was a commercial future for the talking picture, evidently sank deep within Garity's soul, for today Garity is chief factotem for Walt Disney; possibly because that primitive recording was chiefly suggestive to him of the squeaks of Mickey Mouse."

In 1921 de Forest suggested the use of two separate synchronized negatives, one for the picture, one for the sound, each given its proper development, and each printed successively on a common positive. Lee de Forest first commercially introduced sound-on-film motion pictures to the public on April 15, 1923, at the Rivoli and Rialto theaters, New York.

De Forest filed patent applications in 1923 to 1925 on such practical inventions as (*1*) the use of two or more picture cameras at different angles and focal distances, all synchronized to a common sound-re-

cording camera; (*2*) the blacking out by printing of the otherwise noisy pauses in the positive sound-track; (*3*) the method of dubbing sound recorded in synchronism with a projected picture. Another patent issued during this era covered the camera "blimp" in an acoustically treated studio. Early experience in actual theater presentations led to the joint invention with Louis Reynolds of the now well known "tone control" whereby the operator or a monitor in the auditorium itself was enabled to mix the relative values of high and low frequencies to suit best the acoustical characteristics of the theater.

De Forest also took out a patent for an independent volume-control sound-track. Over fifty patents have been issued to de Forest dealing exclusively with motion pictures.

In view of these outstanding contributions to the building of the motion picture, on behalf of the Historical Committee, I wish to present the name of Lee de Forest for Honorary Membership in the Society.

At the conclusion of Mr. Theisen's address, Dr. de Forest responded briefly.

The banquet concluded with dancing and entertainment.