COMMITTEE REPORTS

REPORT OF THE JOURNAL COMMITTEE

October, 1930

In this report an attempt will be made to set forth the manner in which the JOURNAL OF THE SOCIETY OF MOTION PICTURE ENGINEERS has been conducted since its establishment in January, 1930.

Following the autumn convention of 1929, at which time the publication of a journal was authorized by the Board of Governors, immediate steps were taken to set up the necessary machinery for publishing this journal at regular monthly intervals. The requirements and problems of publishing a technical journal were discussed with several publishing houses and bids on cost of publication were requested from two or three of those which to the committee appeared most capable of handling this work. After careful consideration a contract was signed with the Mack Printing Company of Easton, Pa. The decision of the committee to give the contract to this concern was based not only upon its bid on cost, but also upon its proximity to the cities in which are located the editorial office and the offices of the secretary and treasurer.

The question of general style, typography, *etc.*, was discussed at considerable length with the publisher and a style sheet was compiled to serve as a guide in obtaining uniformity of style throughout the JOURNAL.

An attempt was made to get the machinery of publishing established sufficiently early so that the first issue could appear on January 1. As a matter of fact the January issue was a few days late but was mailed during the first week of the month. Since that time, with perhaps one exception, the JOURNAL has been mailed from the office of publication prior to the first of each month and in most cases has reached the members and subscribers within the first few days of each month.

The committee has endeavored to keep the contents of the JOURNAL in harmony with the wishes of the Board of Governors as expressed specifically in the resolutions passed at the time the decision was

made to publish the JOURNAL. A statement of the material to be incorporated in the JOURNAL will be found in the JOURNAL **XIV** (January, 1930) p. 8, under item 5.

In Table I following will be found an analysis of the contents of the JOURNAL up to and including September, 1930. The first section of the table analyzes the contents in terms of numbers of pages. The totals at the extreme right of the table indicate the way in which the space of the JOURNAL has been utilized. In the first nine issues a total of 1130 pages have been published, of which 895 were devoted to purely technical papers; 36 pages to abstracts of scientific articles which, in the opinion of the editorial office, should be of interest to the membership; 9 pages to book reviews; and 168 pages to society notes, tables of officers, committees, photographs of officers and committees, and material of general interest to the Society but of a non-technical nature. The committee feels that this disposition of the space is fairly well in accord with the wishes of the Society as set forth by its Board of Governors.

TABLE I

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Total
Analysis of Contents in Terms of Pages										
Technical Papers	127	108	91	73	84	90	122	92	108	895
Abstracts	4	3	4	3	4	6	4	4	4	36
Book Reviews	2	2	1	..	1	..	1	1	1	9
Society Notes, Committees, etc.	13	9	4	27	37	9	14	33	22	168
Miscellaneous	2	2	2	3	2	3	3	2	3	22
Total pages	148	124	102	106	128	108	144	132	138	1130
Analysis of Contents in Terms of Material										
Convention Papers	8	7	11	8	3	5	7	7	11	67
Contributed Papers	..	..	1	..	2	1	..	2	..	6
Committee Reports	1	1	..	2	..	..	1	1	..	6
Translations	..	..	..	..	1	..	..	2	..	3
Total No. Papers	9	8	12	10	6	6	8	10	11	80
Abstracts	16	13	23	20	18	21	23	22	13	169
Book Reviews	4	3	3	..	2	..	2	2	1	17
Reprints ordered	2500	940	3850	3250	2500	2100	1150	1500	6050	23,840

The second part of the table shows an analysis of contents in terms of material. Again in the total column it will be seen that of the total scientific papers published, 67, were obtained from our two semi-annual conventions, while 6 were contributed directly to the editorial office. Six committee reports were published and 3

translated foreign articles, making a total of 80 scientific papers. The number of abstracts was 169 and book reviews 17.

In the last section of the table are shown the number of reprints which have been ordered from each month's publication. For the nine months covered by this table a total of 23,840 reprints have been ordered.

We now come to the very important question of how much the JOURNAL is costing the Society. In Table II will be found an analysis of the costs involved in publishing the first nine issues (January to September, inclusive) of the JOURNAL. In the first column will be found the number of copies printed for each month and in the second column the total number of pages in each month's issue. In the third column are shown the amounts directly chargeable to "editorial"

TABLE II

				Publisher				Reprints	
Month	Edition	Pages	Editorial	Printing	Cuts	Total	Postage	Cost	Postage
Jan.	2500	148	$120.00	$801.75	$75.85	$877.60	$99.15	$108.32	$14.12
Feb.	2000	124	84.00	591.25	74.89	666.14	46.23	90.91	3.54
March	2000	102	75.50	509.43	80.00	589.43	48.85	123.10	7.54
April	2000	106	83.50	513.35	139.74	653.09	45.55	101.06	6.15
May	2000	128	120.00	619.98	115.62	735.60	42.16	116.16	6.88
June	2000	108	132.00	576.49	98.74	675.23	55.42	175.97	9.32
July	2000	144	135.00	653.94	144.02	797.96	65.03	116.33	10.21
Aug.	2000	132	151.00	632.87	108.93	741.80	62.42	95.53	4.27
Sept.	2000	138	112.00	633.92	133.98	767.90	87.01	130.27	7.14
Total		1130	1013.00	5532.98	971.77	6504.75	551.82	1057.65	69.17
Av.			112.55			722.75			

work. This includes the preliminary preparation of the manuscript for the printer. It should be pointed out that many of the manuscripts as received by the editorial office require considerable work before they are in shape to be sent to the publisher. In some cases the drawings and illustrations submitted by the author are not satisfactory for reproduction. In some cases the editorial office has assumed the responsibility of having these redrawn, while in other cases they have been returned to the authors for correction. This item also includes all proof-reading, both of the galley and page. It includes all stenographic work and amounts paid out for the translation of foreign articles. The item does not include any charges for postage, telegrams, and long distance telephone messages. These items were absorbed by the office of the editor pro tem and paid by

the company by which he is employed. It is estimated that the total amount chargeable to these items up to the present time is not over $75.00. In the last column will be found the monthly cost of printing the JOURNAL. This includes all charges made by the publisher with the exception of cuts and postage. In the next column are shown the monthly costs chargeable to the making of cuts for the illustrations of the JOURNAL, and in the next column a total of these two items which represents the actual cost of printing the JOURNAL. The monthly postage bills chargeable directly to the mailing of the JOURNAL are shown in the column so designated. In the last two columns of the table are shown the cost to the Society of the reprints ordered by the various contributors and the postage involved in sending these out.

In arriving at the total cost of the JOURNAL for the first nine months, we must include the following items:

Editorial	$1013.00
Publisher	6504.75
Postage	551.82
Reprints	1057.66
Postage on reprint	69.17
	$9196.40

Since reprints are billed to the author at cost plus 50 per cent, the profit on reprints should be subtracted from the above figure. This profit is $528.83. Subtracting this from the total cost we find that the JOURNAL for the first nine months has actually cost the Society $8667.57.

Let us turn again for a moment to the consideration of Table I in which the analysis of content is shown. It will be noted that of the total number of technical papers published only six may be classed as *contributed*, all the remaining material of this type being derived from the 1929 autumn and the 1930 spring conventions. The JOURNAL Committee had hoped that as soon as a monthly journal had been established there would be a goodly number of contributions other than papers read at conventions. We feel that in the future there will be more material of this character. There can be no doubt that in many cases the results of experimental and research work going on in various localities mature and are ready for publication at times between our semi-annual meetings. The JOURNAL Committee would like to encourage authors to submit manuscripts

at any time. It is probable that greater activity on the part of the editor of the JOURNAL will be required to unearth this potential material. It would seem desirable to keep the number of pages published each month at a fairly constant level. We therefore hope that in the future more contributed papers will be available.

TABLE III

Month	Members and Subscribers	Samples and Back Orders	Stock	Special	Total
Jan.	661	497	770	300	2228
Feb.	705	246	1081	45	2087
March	759	223	913	100	1985
April	809	195	1020	25	2049
May	769	238	1100	60	2157
June	834	111	1089	45	2079
July	871	147	1068	35	2121
Aug.	908	.76	1075	45	2104
Sept.	951	68	1068	20	2107
Total	7267	1801			

Moreover there is undoubtedly a large number of foreign articles which are well worth translating and printing in the JOURNAL. Here again, a regular editor with more time to devote to the search for such material would be an advantage. We should also like to see an expansion of the abstract section and an increase in the number of book reviews, provided books of sufficient value continue to appear from time to time as they undoubtedly will. It seems reasonable at the present time to plan upon a journal of approximately 150 pages per month. It will be noted that within the past nine months several of the issues have fallen considerably below this number of pages. If we assume a 150 page issue each month there is therefore space to accommodate more contributed and translated articles and some expansion of the abstract and book review sections.

The committee feels that the most important step now in the evolution of the JOURNAL is the appointment of an editor with suitable assistants to carry on the work and to develop the JOURNAL along the general lines as indicated.

LOYD A. JONES, *Chairman*
J. W. COFFMAN
H. T. COWLING
J. H. KURLANDER
W. C. HUBBARD

REPORT OF PUBLICITY COMMITTEE*

The present Publicity Committee was appointed directly following the Fall Meeting of 1929 at Toronto and has been actively functioning since that time.

The work of the committee naturally divides itself into two parts, namely: providing news to the trade press and newspapers of the semi-annual meeting and the activities of the Society throughout the year.

The present Publicity Committee has served during one meeting, the May, 1930, meeting at Washington, D. C. At this meeting two news releases were issued each day of the Convention. As a result of this work at the May Meeting, 1400 inches of news or approximately 20 newspaper columns were carried by trade papers and newspapers of which the Publicity Committee has accurate record. However, it is certain that a great deal more space was obtained since several of the stories were put on Associated Press and United Press wires and published in many newspapers throughout the country.

In furnishing news of the activities of the Society between conventions, the Publicity Committee has released more than 25 stories to the trade press.

When a story is released it is sent to all trade papers in the United States, all technical journals dealing with the motion picture industry, and foreign motion picture trade papers and technical journals. The list includes more than 30 publications altogether. Special stories have also been written for a number of publications, and reports of the May meeting were supplied to a number of technical journals. Abstracts of all papers read at the May meeting were mimeographed and supplied to papers in this country and abroad.

Another duty of the Publicity Committee was to establish exchanges of the Society's monthly JOURNAL with more than 30 motion picture and technical publications in this country and abroad. This exchange of publications has resulted in a great deal of publicity not only in this country but in some of the finest technical journals in European and other foreign countries.

Whatever success the present Publicity Committee may have ob-

* Presented at the Fall 1930 Meeting, New York, N. Y.

tained has been due not so much to its own work as to the splendid coöperation given by the motion picture trade-press. The Publicity Committee has found that the motion picture trade-press is extremely willing to offer every possible coöperation in publishing news regarding the activities of the Society and that its pages are always open for any legitimate news concerning the Society.

The Publicity Committee therefore wishes to express its appreciation to the motion picture trade-press for its splendid coöperation in reporting the activities of the Society.

The Publicity Committee also wishes to thank all those in the Society who have coöperated with it and who have helped to supply the Publicity Committee with details of the Society's activities, for transmission to the press for publication.

WILL WHITMORE, *Chairman*
F. C. BADGLEY
B. W. DEPUE
G. E. MATTHEWS
G. F. RACKETT
O. A. ROSS

REPORT OF STUDIO LIGHTING COMMITTEE*

There has been little change in the methods of studio lighting since the report given at the Washington convention last May with but one exception, that there seems to be a tendency on the part of many of the studios, where incandescent lighting has been used to a very large extent, to increase the number of high intensity spots and sun arcs for floodlighting purposes. This has been rendered possible by the efficient silencing devices which have been installed on d. c. generating equipment and arc lamps in the various studios.

Manufacturers of arc lamp equipment are advertising new equipment for high intensity arcs which is claimed to be free from many of the causes of noise present in the older lamps.

None of the information which your committee has been able to obtain in the past six months is of a character which advances the real knowledge of studio lighting to any considerable extent. Basic information which is available with regard to the various sources

* Presented at the Fall 1930 Meeting, New York, N. Y.

of light is given in many articles which have appeared in the *Transactions* of the Society, of which a bibliography was presented in the last committee report. Much additional knowledge can be obtained from the studios themselves, but in spite of very earnest efforts of the committee it has been impossible to obtain this information up to the present time.

We understand that in past years attempts have been made to utilize photometric measuring devices in the studios, but that none have been found satisfactory or useful for one reason or another. Some recent work has again been done on this problem, but up to the present time little progress has been made in the practical application of these instruments.

Continued efforts on the part of the committee should be made to obtain information from the studios which will permit the establishment of standards for desirable levels and types of illumination for the various kinds of sets encountered in the production of motion pictures. The methods which can be applied in this work probably lie in the determination of levels of illumination coupled with the photographic values of the light actually used and micro-density determinations on films taken with the various types and mixtures of illuminants.

A. C. DOWNES, *Chairman*
L. J. BUTTOLPH
R. E. FARNHAM
K. C. D. HICKMAN
M. W. PALMER

REPORT OF THE COLOR COMMITTEE*

The May report of the committee gave a list of producers of color pictures and the systems used. At that time the Photocolor Corporation[1] report had not been received. Mr. A. G. Waddingham, technical director of the corporation, supplied the following description of this system:

"The color camera is of special design, photographing a pair of images in conjunction with special taking-filters and an optical system employing the split beam method of photographing.

* Presented at the Fall 1930 Meeting, New York, N. Y.

[1] Letter dated July 11, 1930.

"The negative is printed upon a specially designed optical printer which prints the two respective images upon duplitized positive stock.

"The print is then transferred to the green processing room where the film receives an application of the blue-green complementary dye on the side containing the image from the red sensation negative.

"It then passes through a red processing machine, wherein the orange-red dye is applied to the image from the green sensation negative. At the termination of this operation the film is removed and sent to the assembly room where it is assembled and finally projected and inspected upon the screen."

According to Mr. Waddingham, the process is adaptable for the production of sound prints in color, either by the disk method or the sound-track on film method. The company is equipped with a thoroughly up-to-date laboratory, and a new sound studio is in the course of construction.

The Reporter, Hollywood, October 8, 1930, says the Photocolor Corporation of New York is planning to build a plant in Hollywood with a capacity of a million feet of film a week and expects to be in operation soon after the first of the year.

FILM PACK

A specially made negative is being marketed, for use with the Film Pack system, known as Red Ortho Front Negative.[2] This has a blue sensitive emulsion on the surface of which is a layer containing a red coloring matter.

In making color sensation negatives by this system, Red Ortho and a panchromatic negative are placed emulsion to emulsion in the camera and exposed simultaneously. The light from the lens passes through the Red Ortho, recording the blue end of the spectrum. The red colored layer then filters out the blue; the red end of the spectrum passing through is recorded by the panchromatic negative.

The red coloring matter on the Red Ortho is removed from the developed, fixed, and washed negative by bathing in a 3 per cent solution of hydrosulfite of soda.

NEW COLOR PROCESS

A new color process is being introduced from Germany, known as the "New Color Process." It is claimed that this is usable for either motion picture or stills, although in the description the method of using it for motion pictures was omitted.

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[2] English Provisional Patent No. 333,933, August 25, 1930.

Successive exposures are made in a special camera fitted with tri-color filters. The color value negatives are printed on positive films which have their respective dyes incorporated in the emulsions. The films are then developed, fixed, washed, and subjected to a warm water treatment. No formulas were given. The silver images are then reduced, leaving pure dyed images which, it is claimed, can be either transferred to an individual support, or the three films can be placed in register and bound. The printing is accomplished by printing through the celluloid side of the film.

THREE-COLOR ADDITIVE PROCESSES

In the Herault Color Process a three-color sector wheel is rotated in front of the camera and the contact print negative is dye tinted so that each successive group of frames is tinted one of the primary colors. The three-color positive is then projected with a continuous projector (Continsouza-Combes). The method is said to suppress the chromatic flicker when projected at 24 frames per second; only spherical lenses are used in this projector. This plan is somewhat similar to that now being suggested by Wolf-Heide.

HORST SYSTEM OF COLOR PHOTOGRAPHY

In this system three pictures are taken simultaneously with three-color filters, using a prism system in the camera. In the positive, each frame carries three images, each corresponding to one of the color separation images of the negative. This method is being sponsored in Great Britain by Universal Productions, Ltd.

REPORT FROM DR. WALTER CLARK

In a report from Dr. Walter Clark, London, August, 1930, he states that "a number of color cinematography processes are being investigated in England and a few productions are in progress utilizing some of them. Processes being studied or used in England include Pathecolor, Talkie-Color, Zoechrome, Dufay, and Raycol."

THE CHROMOLINOSCOPE

In a paper entitled "The Chromolinoscope Revived," Dr. H. E. Ives has described several applications of the instrument devised by his father, F. E. Ives, in 1901. This instrument was devised for the production of line images by the use of a special ribbed glass inserted in the optical system. Methods of making "ridged" images and

ridged film records from three-color separation negatives are described as well as a method of copying film (such as Kodacolor) containing line images. *J. Opt. Soc. Amer.*, June, 1930, Vol. 20, p. 343.

A REVIEW

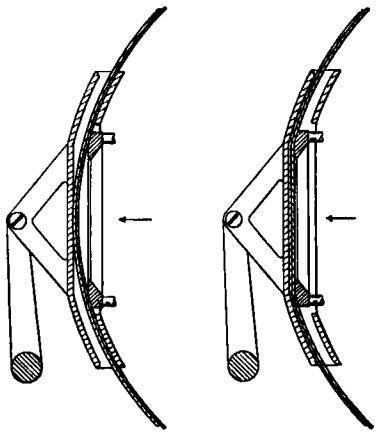
A review of recent advances in color photography is published by G. Grote in the *Photographische Korrespondenz*, April, 1930, Vol. 66, p. 91.

KELLER-DORIAN METHOD[3]

Dr. N. M. LaPorte of the Paramount Publix Corporation says, "relative to our experience with the Keller-Dorian method, would say that while our preliminary investigations show that there is considerable merit to the process, we have not made any commercial takes to date."

CAMERA GATE FOR FILM PACK[4]

A camera gate that holds two films in contact while at the aperture gate in a camera and suited for composite photograph and film pack color negatives has been issued in England. The gate seems specially suited for Bell & Howell cameras and is known to produce very excellent results.



Camera gate for film pack.

FIRST COLOR FILM

The Glorious Adventure, first of the full length, full color pictures to see the light of day, was shown some ten years after its original debut at the Filmarte Theater, 1228 Vine Street, Hollywood, California, for a week beginning August 15, 1930. It received favorable comments from the press.

MULTICOLOR

A demonstration reel, colored by the Multicolor System, was shown here last night. The negatives were

[3] September 23, 1930.

[4] August 25, 1930, No. 333,932.

made by the Film Pack System and most of the scenes exhibited were made under artificial light.

SENNETT BREVITIES

An exhibition of work done by the Sennett Laboratories, Studio City, California, was shown last night. All the negatives are made by the Film Pack system. The aim here, according to the Sennett organization, is to produce films with good photography and subdued color.

MAGNACHROME FILM

This system gives wide film sound and color. It is an additive method with many of the old features utilized, but designed to rid itself of color bombardment and color fringing.

This is accomplished by having the film pass through the normal projector at the standard speed of 90 feet a minute with an intermittent movement, using an 8 sided cam instead of the usual 4 sided cam. This gives 48 pictures a second of half the usual height, instead of 24 full frame pictures a second as is customary. At this speed of 48 changes a second, there is little or no color bombardment

The negatives are preferably made by the film pack system. The only change in the camera is that it is fitted with a half size aperture gate, and the normal speed of 24 pictures a second insures good exposures. Other methods of making the negatives may be used.

For the positives, the negatives, which have been exposed as above described, are printed in sequence, giving on projection a series of 48 pictures a second, with the sound at 90 feet a minute giving perfect reproduction. No fringing is discernible as the negatives have been made in pairs. In addition to this the film is tinted with alternate spaces of red and blue-green, so that after leaving the laboratory the films cannot be joined or run out of color.

No public demonstrations have been given although private exhibitions have brought forth encomiums. As the process has no toning, using black and white pictures, and makes use of a process in which the problems are familiar and well worked out, the film can be introduced at low cost.

The above description covers much that has been done but, as many changes are being made, no demonstration will be given until the Spring Meeting of the Society.

Mr. Roy Hunter of Universal Films, Inc., who has been active in the development of the Magnachrome System has supervised the making of a two reel picture without color using this method of projection.

WM. V. D. KELLEY, *Chairman*
JOHN G. CAPSTAFF
WM. T. CRESPINEL
F. E. IVES

REPORT OF THE HISTORICAL COMMITTEE*

On account of the recent appointment of the speaker to the Chairmanship of the Historical Committee of the Society of Motion Picture Engineers, it was found impossible to hold a meeting of the committee at which more than three members could attend at any one time. In spite of the fact that it was not possible to bring together the members of the committee for a formal meeting a considerable amount of work has been accomplished by conferences of the Chairman with the various individual members of the committee.

A schedule of the matters at present under consideration by the committee was sent by the Chairman to each individual member and replies have been obtained from all members of the committee residing in the United States.

The principal questions being considered by the Historical Committee at the present time are:

1. The selection of a museum as a repository for whatever specimens of a historical nature can be collected by the Society.

2. Consideration of a means for recognition by the Society of surviving pioneers who were active in the establishment of the motion picture industry.

3. The locating and obtaining, if possible, of any and all relics, films, and documents of importance concerned with the early history of the industry.

4. Planning for the future work of the committee.

That is a brief synopsis of the problems which have so far been considered by the committee.

Ever since the formation of the Society there has been more or less talk about the necessity of preserving in some manner the various

* Presented at the Fall 1930 Meeting, New York, N. Y.

relics, documents, and early films which represent the various stages of development of cinematography.

Although we are just beginning to be ashamed of referring to cinematography as an infant industry, nevertheless more than forty years have passed since the first chrono-photographic records were made and a great many steps in the development of motion pictures have passed into the limbo of forgotten things. The objects and aims of the Society place it automatically in the position of being best suited for the task of preserving the history of the industry. The Historical Committee has, therefore, considered very carefully the problem of a suitable repository for whatever specimens of a historical nature can be collected.

Most museums exhibit a definite class of objects and are thus automatically eliminated from consideration. The museums under consideration are those who have signified that they would like to obtain whatever motion picture exhibits which can be given by the Society. They are the Museum of Peaceful Arts, New York, Smithsonian Institute, Washington, D. C., Julius Rosenwald Museum of Science and Industry, and the Museum of the University of Southern California, Los Angeles, Calif. The committee believes that the museum best fitted for the purpose is the one which is most easily accessible to the greatest number of people interested in the motion picture industry. New York City is unquestionably the world center of the motion picture business, even though the majority of pictures are not produced in the vicinity of New York. The Museum of Peaceful Arts is at present housed in the New York Daily News Building at 220 East 42nd Street, accessible in a few minutes from the center of New York City. While it is a new museum and not yet well known to the public, its plans for future development look forward to a skyscraper museum in the center of the city, easily accessible to visitors with a limited amount of time. It is being developed along the latest and most approved methods of museum exhibition, wherein the exhibits are displayed in the best possible manner. Wherever possible the exhibits are mechanically operated either by motor, actuated by a push button pressed by the spectator, or by means of a crank operated by the observer. At the same time the exhibit is protected in a suitable glass case.

The space available in the Smithsonian Institute is limited. The ability of the museum to do certain things is also limited by the Federal law which governs it. Moreover, the number of visitors to

the Smithsonian Institute is limited. Most of these objections also apply to the other museums mentioned above.

As there does not appear to be any central museum available at the present time for the housing of what we hope will in time prove to be a considerable collection, it has been suggested that whatever material may be available at the present time be divided among those museums best suited for the present purpose as loan exhibits so that, should a more suitable place be found in the future for a central exhibit, the loans could be recalled and all of the collections be assembled in one place.

The Museum of Peaceful Arts has signified its willingness to accept exhibits on loan so that the Society at any time can withdraw exhibits allotted them and replace them in any more suitable place which may be selected in the future.

While the Historical Committee has no knowledge at the present time of any historical relics being presented to the Society for museum exhibition, a great amount of material has been located and it is believed that as soon as a suitable repository has been selected that it will not be difficult to obtain a very considerable array of objects of great interest concerning the development of the industry.

The matter of recognizing in some manner the pioneers of the industry has been taken up with the Board of Governors. The committee has investigated the careers of Jean Acme Leroy and of Eugene Augustin Lauste. Jean Acme Leroy seems to have been the first man to project pictures on a screen with a machine operating on the same principles as those in use today and Eugene Augustin Lauste took out the first patent for sound record on film.

Several of the members of the Historical Committee have investigated the lives of these two old men, whose advanced age makes it seem probable that they will not be with us much longer, and whose claims have been under consideration by the Society for over a year without definite action being taken.

Their friends in the Society think that their careers should be recognized in the form of an honorary membership for each of them. Others have maintained that although these men may have been pioneers, this might establish a poor precedent and perhaps may later cause embarrassment to the Society by the request of a large number of others for the same sort of recognition.

This seems an unfair argument. The Society has already in the past honored various persons of prominence in the early history of

the industry with honorary membership and the surviving pioneers of the industry are fast being decimated by the hand of time. Why should the Society not honor itself by extending to any pioneer of the industry who has materially helped in its advancement the epilogue of an honorary membership for their pioneer efforts? Only a few of these old men have reaped financial reward for the work which they have done and it does seem a shame that these few remaining pioneers who built the foundation of this great industry should be pointedly ignored and turned down.

Contrary to the unanimous recommendation of the preceding Historical Committee and a reëinforced recommendation by the present Committee, the Board of Governors at a meeting held October 19, 1930, refused to act on the report of the committee.

The future work of the committee seems to be very clearly defined in the selection of a suitable repository for the historical material to be collected; in the location and collection of this material, and in planning for the foundation of a fund by some means or other to meet the expense connected with this work.

Respectfully submitted,

C. L. GREGORY, *Chairman*
E. ADAMS
M. CRAWFORD
C. F. JENKINS
O. NELSON
A. S. NEWMAN
T. RAMSAYE

SOME ACCOMPLISHMENTS OF EUGENE AUGUSTIN LAUSTE—PIONEER SOUND-FILM INVENTOR*

In any historical outline of the important inventions which have contributed to the technical development of motion pictures those of Eugene Augustin Lauste, pioneer experimenter in sound-film processes, ought properly to have a prominent place.

They are unique, in that they relate directly not only to one, but to two periods of the utmost importance in the evolution of the modern screen. Mr. Lauste contributed to the early mechanical inventions which made the silent motion picture possible and later developed the fundamental theories which made practical the addition of synchronized sound to the animated scene upon the same film. In both these fields this modest Frenchman played by no means a minor part. He was—and is—in the truest sense, a pioneer—a discoverer.

* A contribution of the Historical Committee, prepared by Merritt Crawford.

It is not possible, in this brief record, prepared on behalf of the Historical Committee, to do more than indicate the principal contributions which he made to the development of the silent and the sound-film art. Nor is it possible here to quote all the authorities consulted by the writer in support of the now generally accepted contention that Mr. Lauste is entitled to recognition as an experimenter and inventor of premier rank in film history.

This will be done, however, in a fully documented biography, which is now being prepared and in which Mr. Lauste's early researches and discoveries will be amply set forth.

It is sufficient to say here that published accounts of his experiments extended over a period of years. The testimony of many members of our Society's London Section, who personally observed his work at various stages of its progress between the years 1908 and 1916—the records of the United States Courts—the existence of much of his early apparatus—the issuance of his British patent of 1906, covering basic means and methods for synchronously recording and reproducing sound and scene upon the same film—all serve to furnish a most complete picture of this remarkable man's researches and definite achievements in motion and sound picture history.

Mr. Lauste, who will be seventy-four his next birthday, is now living quietly in semi-retirement in Bloomfield, New Jersey. He has sold all his experimental apparatus to the Bell Telephone Laboratory, where it is expected it will eventually be placed on exhibition in the Bell Telephone Museum, at West and Bethune Streets, New York City, to take its place alongside of the epoch making inventions of Dr. Alexander Graham Bell and the long list of distinguished scientists and engineers who followed him in the development of sound and telephonic communication processes.

Mr. Lauste was born in the Montmartre district of Paris, January 17, 1857. It is said that he early displayed inventive and mechanical talents of a high order, and it is certain that before he was twenty-three he had filed with the French patent office no less than 53 models and designs on a variety of devices.

His connection with motion picture experimental and research work began in 1887, when he joined the technical staff of Thomas A. Edison at Orange, N. J. He was chief mechanical assistant to William Kennedy Laurie Dickson, for many years chief of Mr. Edison's technical and research staff, and shared with him in many of the early experiments in producing animated photography, which eventually resulted in the disclosure of the famous kinetoscope.

Mr. G. F. Atwood, now in charge of the Model Department at the Bell Telephone Laboratories, who occupied a similar post with Mr. Edison in that early day, tells me that Mr. Lauste was rated as one of the ablest mechanics in the Edison organization of that period and was highly regarded by all his superiors, including Mr. Edison himself. His assignments were seldom blue-printed, but were such as might be described as requiring much more than mere mechanical ability, as Mr. Lauste's ingenuity and inventive talents were fully recognized.

Mr. Lauste left the Edison organization in 1892 to develop a gasoline engine, which he had designed in association with another French engineer. His model worked, but he became discouraged and discarded it, when experts assured him that an engine of this type, with its noise and inflammable potentialities, could never be made commercial because it would not be permitted on the streets.

But for this mischance he might well have figured as an inventor in the beginnings of the automobile as well as the motion picture.

In 1894 he became associated with Major Woodville Latham, a teacher, who had become interested in the possibilities of a step-photography as disclosed by Mr. Edison in his kinetoscope. Major Latham, himself, had little mechanical knowledge or experience, but had conceived the idea of devising a projector for the infant film and engaged Mr. Lauste to perform the actual experimental and mechanical work.

While associated with Major Latham, Mr. Lauste designed and constructed the first wide film projector—the Eidoloscope—which embodied the famous so-called "Latham Loop," which is a fundamental feature in all modern projection machines and which was an important matter in the patent litigations of a quarter of a century ago. Mr. Lauste also designed and built for Major Latham several wide film cameras and a complete printing equipment. With the Eidoloscope public exhibitions were given in May, 1895, at No. 153 Broadway, New York, and during the following summer at Coney Island in a tent on Surf Avenue. The pictures shown were views of the Griffo-Barnet prize-fight, which Mr. Lauste had photographed on the roof of the old Madison Square Garden.

In 1896 Mr. Lauste joined the American Biograph Company, with which he was associated for several years, much of the time being in charge of their laboratory and experimental plant near Paris, France.

Mr. Lauste's invention of the "Loop," in connection with the projection machine, as well as other features of the Eidoloscope, which have borne Major Latham's name, has been fully set forth in the testimony in the case of Edison *vs.* The American Mutoscope Company, brought in 1898 in the United States Circuit Court, Southern District of New York. Major Latham, Mr. Lauste, and Mr. Dickson, who had then left Mr. Edison's employ to become one of the founders of the Biograph Company, all testified in this action and their testimony leavesd no question as to the authorship of the invention of the first wide film projector, the Eidoloscope.

Mr. Dickson, in a letter written as recently as March 28, 1927, in referring to the early inventors in the art, says: " . . . full credit must be given Mr. Lauste, who invented the indispensable 'Loop' and the second sprocket."

The foregoing will suffice to indicate the importance of Mr. Lauste's contributions to the early mechanical development of the art, but his chief fame will doubtless eventually rest upon his work in the field of the sound-film and its processes.

According to Mr. Lauste, himself, it was while he was employed at the Edison plant in 1888, that he first conceived the idea of photographing and reproducing sound and scene. In an old issue of the *Scientific American* dated May 21, 1881, which he found in the cellar of the Edison laboratory, he read a description by Dr. Alexander Graham Bell of his invention of the Photophone and the successful transmission of sound by means of radiant energy, using a microphone and selenium cell in conjunction.

The idea fascinated Mr. Lauste and it occurred to him that the sound waves might be recorded photographically and then reproduced by means of a light sensitive cell as Dr. Bell had done.

At first it was his idea to record the sound waves photographically upon a ribbon

or strip of bromide paper and to reproduce them, using a mirror and reflected light. He had then not yet seen a sample of Mr. Eastman's film. Early in 1890, however, in the Edison laboratory he saw for the first time a specimen of this film in the *Blacksmith*, one of the earliest kinetoscope subjects, and at once realized that the commercial material was available which would solve this phase of his problem.

Until the year 1900, however, the pressure of other work and his limited resources prevented Mr. Lauste from making much progress with his idea. In that year he made his first "light gate" of the grate type and drafted some sketches. But it was not until 1904 that he was enabled to build his first complete apparatus for experimental purposes.

It was very crude, but it demonstrated to him that he was following the right lines and on August 11, 1906, he applied at the British Patent Office for an invention described in its preliminary specifications as: *"A new and improved method of and means for simultaneously recording and reproducing movements and sounds."*

His complete specification was accepted and a patent, No. 18,057, issued August 10, 1907, which has often since been described as the "master patent" in the field of synchronized sound and movement photography. There certainly has never been another patent in this field which has quite compared with this in general interest and attention, for it has long been the "best seller" of the British Patent Office.

It has already gone through seven editions and an eighth is presently in prospect, so unprecedented has been the demand for this paper with the tremendous increase in experimental and research work on the sound-film in recent years.

To sketch, even in the most cursory fashion, Mr. Lauste's later experiments is difficult within the limits of this article. Until 1910 he devoted most of his efforts to obtaining adequate results in sound recording and reproduction. He had, of course, no amplification.

He experimented with and devised various types of mechanical and optical slits and lighting means. The grate light valves he first made for recording were unsatisfactory because of the inertia of the mechanical slit used. His limited mechanical equipment made it impossible for him to make a slit of this type sufficiently narrow.

He used an oscillating mirror with good results, but eventually found this also impracticable because the vibrations of the camera interfered with the light waves and distorted them. His ultimate sound gate, which embodied a vibrating diamagnetic wire (silicon) acting between the poles of two strong magnets, was entirely successful. He devised this early in the year 1910.

In this year also, he paid his first visit to Ernst Ruhmer, the eminent German experimenter, in Berlin. It is generally recognized now that these two pioneers, a Frenchman and a German, laid down the fundamental theories for photographic sound recording and reproduction. They collaborated and exchanged notes on their experiments until 1913, the year in which Ruhmer died, and for a time considered combining their research activities.

In 1910 Mr. Lauste first photographed sound and scene on the same film at his Brixton, London, studio. Between that date and 1914 he photographed many thousand feet of sound pictures. He came to America for a short visit in 1911,

with the idea of interesting capital, but was recalled to England too soon for him to make any definite arrangements.

In his short stay in America in the Spring of 1911 he demonstrated his sound camera-projector to a number of people and photographed at least one short length picture, recording sound and scene. This, doubtless, may properly be described as the first true sound picture to be taken in America.

In 1912 Mr. Lauste, having sufficiently perfected his recording and reproducing systems, began experiments to devise an amplifier for his sound films. But for the fact that his capital was limited and the later interruption of the war, it is quite possible that the sound picture might have made its public appearance at least a decade before its commercial possibilities were demonstrated by means of the sound amplifying system developed by the Bell Telephone engineers.

The fact that Mr. Lauste never succeeded in making his sound processes commercial or profiting from them, will have no bearing on the measure of fame which future film historians will accord him.

There can be no doubt but that he was the first to record sound and scene upon the same film and to reproduce it, and the importance of his researches and early experiments will become increasingly apparent with the passing of the years.

JEAN ACME LEROY—PROJECTION PIONEER*

In a brief historical report, such as follows, it is difficult to do justice to the colorful career of Jean Acme LeRoy, projection pioneer, whose experimental work and invention is the subject of this article. It is a constant temptation to turn aside from the cold consideration of his work to tell something of the man himself, his struggles, and disappointments, but these matters have no place here.

LeRoy's claim has been that he was the first to commercially show motion pictures on the screen, using a projection machine which he had devised. Previously, motion pictures had only been viewed through an aperture by a single individual at a time. LeRoy first made it possible for many to see the same picture simultaneously.

Nearly a year ago the Society took these claims under consideration and last Spring a report was made by the Historical Committee after a careful investigation of the available records, of which this article is the substance. Much testimony in affidavit form was examined, living eye witnesses interviewed, and other corroboratory evidence considered before the report of the Historical Committee was prepared. All of it bore out the contention, which at first had occasioned some doubt and surprise because of the generally accepted idea that commercial motion picture projection did not exist in the art until some time in the year 1895, that LeRoy had succeeded in accomplishing it a full year previously.

That the LeRoy projector was never patented or commercialized, in the sense that its inventor sought to standardize his invention, and manufacture or intro-

* A contribution of the Historical Committee, prepared by Merritt Crawford.

duce it for the use of others than himself, is conceded by LeRoy. In the strictest sense, therefore, it cannot be said to have exercised any considerable influence upon the development of the early art.

LeRoy, the showman, used his machine for his own purposes in earning a living. He did not regard it then as an invention, but merely as a novelty, an added feature for an entertainment program. He made no pictures himself, but projected the subjects of others, mostly Edison kinetoscope films, from February 5, 1894, the date of his first public showing, until the summer of 1897.

So his "Marvelous Cinematographe," as he described his early projector, cannot be said to have contributed in an important way to the motion picture's growth.

Nevertheless because of the early date of its disclosure, the fact that certain features of LeRoy's machine played a part in some of the important patent litigation which marked the first two decades of the industry's development, and because it anticipated in many essential features the screen machines which later were destined to popularize the art, LeRoy's invention possesses a definite historical interest.

To sketch briefly LeRoy's background, he was born February 5, 1854, near Bedford, Kentucky. He came to New York, while still a youth, and was apprenticed to one Thwaites, a famous photographer of the pre-Civil War period, whose studio was then at No. 1 Chambers Street, New York City.

In 1876 he posed two dancers, photographing the poses in series, taking over two hundred plates. Then he devised an apparatus, using lantern slides, which successfully projected pictures on the screen and in a crude way created the illusion of motion.

The device was too clumsy and costly for commercial use, and the rattle of the glass slides distracted the attention of the audience, but the apparatus embodied a number of the basic principles that remain today in the motion picture projector, such as an obscurating shutter (oscillating, not rotary), an intermittent feeding mechanism, an illuminant, and lens.

From about 1880 to 1887 LeRoy was employed by a firm of traveling view photographers and on returning to New York worked for various leading photographic studios. In 1887 or 1888 he took up his experimental work again, but his experience with his glass plate projector had convinced him that until some flexible material could be substituted for glass little progress could be made toward obtaining successful animated photography.

As all the world now knows, it was during this period (between 1886 and 1891) that the cinematic art was to have its inception in the inventions and discoveries of Dr. Marey, Friese-Greene, Goodwin, Edison, Eastman, and others, in the creation of the film and camera apparatus, which made the motion picture possible.

LeRoy, who kept abreast of developments in his special field, knew something of the advances which were being made in the direction of animated photography. Early in 1893 he obtained by chance some film made by Wordsworth Donisthorpe, a well-known British experimenter. It was unperforated, but the views it showed in series of a London street scene gave LeRoy an idea.

The film, itself, probably manufactured by Thomas H. Blair & Co., then the leading British camera supply house, was the first that LeRoy had ever seen, although he had been aware that sensitized celluloid sheets had been manufactured commercially by Carbutt and others for several years previously.

With the memories of his old glass plate projector before him, LeRoy set to work to devise a machine suitable to project the Donisthorpe film and late in 1893 he completed his first model.

The apparatus was very crude, being constructed mostly of wood. Friction rollers were used for feeding and intermittent rollers to obtain stop-motion. The results he secured were sufficient to encourage him, but he realized that with the imperfection of the film stock at that time and the difficulties of keeping the pictures in frame, the friction method could not be made practicable without much further experiment.

Meanwhile, the kinetoscope of Mr. Edison, which had lately appeared, was beginning to make film history. Raff and Gammon, Edison's distributing agents, held an exhibition of the novel coin-operated motion picture machines at the Grand Central Palace in December, 1893, and it was here that LeRoy secured the solution of his problem for making a practical projecting device.

As every one knows the kinetoscope used film of the present-day standard, with four perforations on each side of the image and LeRoy instantly realized that it was far better adapted for projection than the friction method. The Edison machine also assured him of a supply of motion picture subjects, a matter which had previously given him much concern, as he had had no definite source of supply for his projector. And without film, of course, it was quite useless.

To complete his invention now required only the substitution of sprocket roller for the friction roller, but LeRoy also made many other improvements and, in fact, rebuilt his frictional machine almost in entirety. The new machine was completed, according to the testimony, on February 3, 1894.

Two days later, in the showroom of Riley Bros.' optical shop, at No. 16 Beekman Street, New York City, two Edison kinetoscope films were projected before an audience of about twenty-five people, mostly booking agents and theatrical folk. It is contended, and there has been no evidence developed to contradict it, that this was the first time, in America, at least, that a motion picture on celluloid film was shown publicly on the screen by means of a projection machine.

All motion pictures shown previously, as far as the records indicate, had either been imperfectly projected with a camera for experimental purposes or had been shown through an aperture to a single individual at a time, and not to an assembly upon a screen.

This date is substantiated, as previously mentioned, by many of the individuals present on that memorable occasion in screen history, in affidavits and by personal testimony. The writer has personally interviewed several of those, who are still living, and there seems to be no question, but that February 5, 1894, will go down in motion picture history as the established date for the first screen show.

As it was not for a considerable period thereafter, that any other projection machines were publicly disclosed, according to the authoritative history by Mr. Terry Ramsaye, "A Million and One Nights," which assigns to the year 1895 the earliest appearance of any of them, LeRoy's "Marvelous Cinematographe" must be given the historical distinction of being the pioneer screen machine.

The pictures screened by LeRoy at this first showing in Riley Bros.' establishment were the *Execution of Mary Queen of Scots* and *Washing the Baby*, two well-known early Edison subjects. Following the exhibition LeRoy explained

to those present where his films originated and stated also that he hoped to secure others from foreign makers like Donisthorpe.

Necessarily, because of the short length of his entertainment (the films shown took about two minutes to run off), he was not enabled immediately to receive any theatrical bookings. There was also probably a question in the minds of his audience as to the certainty of his obtaining a future steady supply of screen material, although they were much impressed by the exhibition itself.

LeRoy did, however, receive numerous single engagements and in ensuing months gave many exhibitions at clubs, social and church organizations, and private entertainments with his screen machine. Among others in the Spring of 1894 were engagements at the Bijou Theater and Verona Hall in Brooklyn.

LeRoy's "pictures in life motion" were principally used as a "filler" on the Sunday evening entertainment programs of the period. Among the pictures he showed at this time were the famous Leigh Sisters in *The Umbrella Dance* and *The Trilby Dance*, the *Serpentine Dance* by Annabelle, and Hoyt's *Milk White Flag*, all of them Edison kinetoscope subjects.

From the Spring of 1894 until July, 1897, he gave numerous exhibitions in many states, using the same projector, but showing a great diversified program of films. He has probably the distinction of taking out the first motion picture "road-show," though the mishaps of that adventure would require a separate article to narrate, and there is in existence an ancient handbill, which attests that on Washington's Birthday, 1895, LeRoy's troupe of featured players and the "Marvelous Cinematographe" with "pictures in life motion," entertained the citizens of Clinton, New Jersey.

It was not until 1897 that it occurred to LeRoy that he ought to patent his projector, as by that time many other machines had appeared, the marvelous industrial development of the industry had begun, and he came to realize, probably for the first time, the possibilities of his invention.

He then consulted a patent attorney and was frankly told that he was just about one year too late, the two years' grace accorded the inventor by law to disclose his invention having expired February, 1896.

Of LeRoy's later contributions to the art and his numerous patented improvements on the projector, which related principally to the elimination of the first hazard and the prevention of eye-strain, *etc.*, I shall make no attempt to enumerate here. I would like to record, however, that it was LeRoy who devised the projection booth for fire protection, which the National Board of Fire Underwriters adopted as the standard back in 1907, and that LeRoy refused to patent it, though it had many patentable features, on the ground that public safety required that means for fire protection should be free and unhampered for all.

During the battle between the so-called "independents" and the Motion Picture Patents Company, beginning in the year 1909, LeRoy also played an important part. His projector helped to establish the fact that the essential inventions for animated projection were in the public domain, by reason of his use of his projector, which thus constituted "prior art." In this he was materially aided by Mr. Alfred H. Saunders, then editor of *Moving Picture News*, the forerunner of today's *Motion Picture News*, who published pictures of LeRoy's machine and a full description of it and its history in his publication, August 12, 1911.

Until some two years ago LeRoy was far more active than many younger men

in the industry. Like many other inventors his life has been one of hardship and disillusionment. But his keen interest in all matters having to do with the art has never wavered. And his collection of early films and historical memorabilia of the motion picture's growth has probably not its equal in America.

On August 28, 1928, he was stricken, while working in his shop, then in West 44th Street, New York, and since that time he has been confined to his home, partially paralyzed. His mind, however, is fully active and his memory of dates and events in film history remarkable. He is proudest, however, of being a "pioneer," and of having played some part in the motion picture's beginnings.