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Announcement of New
PROJECTION DEPARTMENT

(See Page Four)

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TITLE

PHOTOGRAPHED BY

A Sainted Devil	Harry Fischbeck, member A. S. C.
The House of Youth	J. O. Taylor
The Law and the Lady	Not credited
Trigger Fingers	Walter Griffin, member A. S. C.
Forbidden Paradise	Charles Van Enger, member A. S. C.
Her Night of Romance	Ray Binger and Victor Milner, member A.S.C.
The Siren of Seville	Sol Polito, member A. S. C.
Wages of Virtue	George Webber
Daughters of the Night	Not credited
The Mad Whirl	Merritt Gerstad
The White Sheep	Floyd Jackman, member A. S. C. and Geo. Stevens
Greed	Ben Reynolds and Wm. H. Daniels
Broken Laws	J. R. Diamond
Sundown	David Thompson
Smouldering Fires	Jackson J. Rose, member A. S. C.
North of 36	Alfred Gilks, member A. S. C.
The Dark Swan	David Abel, member A. S. C.
The Ancient Law	Not credited
The Roughneck	George Schneiderman, member A. S. C.
Unmarried Wives	Jack McKenzie
The Legend of Hollywood	Karl Struss
Romola	Roy Overbaugh, member A. S. C.
Love's Wilderness	Oliver Marsh
The Foolish Virgin	Norbert Brodin, member A. S. C.
Secrets of the Night	Gilbert Warrenton, member A. S. C.
Idle Tongues	Karl Struss
Women First	Allen Thompson
Comin' Through the Rye	Not credited
Troubles of a Bride	Not credited
Battling Bunyan	Frank Cotner
On Probation	Ernest Miller
On the Stroke of Three	Victor Milner and Paul Perry, members A.S.C.

American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

Board of Editors—VICTOR MILNER, H. LYMAN BROENING, KARL BROWN, PHILIP H. WHITMAN

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NEXT MONTH

- ☞ HERFORD TYNES COWLING, *A. S. C.*, will report on motion picture production conditions in China and the Far East as he found them through first-hand study in his recent "cinematographic" trip around the world.
- ☞ BERT GLENNON, *A. S. C.*, will write on what the cinematographer expects in the way of progress in lenses.—and there will be the new projection department and other features.

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American Cinematographer to Have Projection Department as Regular Part of Each Issue

Mutual Interests of Projectionists and Cinematographers Seen by the A. S. C.



Publication of Practical Information to be Criterion of New Department.



EARL J. DENISON

A projection department is to be made a regular part of the *American Cinematographer*.

This announcement, together with the attendant one that Earl J. Denison will be in charge of the department, is one of the most important to be made in the history of this publication, and comes as the realization of an ambition that has been cherished for several years by the American Society of Cinematographers, publishers of this journal.

In the fall of the closing year it was decided by the A. S. C. membership that the time had come for the establishment of a projection department, and, accordingly, a special committee of A. S. C. members comprising Dan Clark, George Schneiderman and Gil-

bert Warrenton was appointed to work in conjunction with the regular editorial staff to carry out the wishes of the A. S. C. membership in making the department a regular part of the *American Cinematographer*. This conclusion was arrived at by the American Society of Cinematographers after long and mature contemplation, by virtue of which the fact was driven home that, in order to have the perfect screen presentation, the closest possible relationship must exist between the projectionist and the cinematographer.

Projection Is Decisive

How to bring about this mutual bond of interest was long considered before the conviction began to grow that the most logical way to produce the desired results was through the medium of the Society's publication itself. A better understanding of reciprocal problems of projection and of cinematography is sure to attain the goal toward which both the cinematographer and the projectionist are bending their efforts, and that, of course, is the perfect screen presentation. The Society believes that the establishment of this department will not only be of interest to the projectionist and to the cinematographer, but should prove of indirect benefit, if it cannot be seen to be direct, to every one concerned in the production of a motion picture, for the reason that the efforts of all, in the final analysis, are ruled by the screen presentation—in other words, how the public sees the picture.

Workable Information

It is the plan to make the new department the embodiment of simplicity, to avoid being forbiddingly technical, and, above all, to make it practical.

Headed by Denison

With this ideal in mind, the A. S. C. believes that it is fortunate to have the ideal man to handle the department in the person of Earl J. Denison.

(Continued on page 17)

Photographing "North of 36"

By Al Gilks, A. S. C.

Texas Plains Hot Enough
to Melt Lenses as Big
Production is Filmed

To handle the camera on "North of 36" called for something in the nature of a cross between a cinematographer and a cowpuncher. As is generally known this Paramount production, which was directed by Irvin Willat, was filmed in its natural locale—which meant pure location work under a broiling Texas sun from the start until the finish of the vehicle. The ten weeks of location served to thoroughly ground us in the fundamentals of the cow country, not the least of our learning being to live "close to the plains", at the same time being obliged to successfully cope with, despite numerous obstacles, the difficulties that challenged us to bring good camera work to the screen despite the conditions that surrounded us.

In short, we were living the life of the first part of the last quarter of the last century—yet we were setting out to provide entertainment and education through the medium of one of the most modern of inventions.

"North of 36" was strictly a location picture, so to speak. In the two and one-half months that we galloped over the Texas plains, sometimes shooting from a lofty platform and at other times from the lurching floor of a floating wagon, we were not only living under primitive conditions but, cinematographically, we were photographing under like circumstances. We had to depend on Nature, with its own light sources, to aid us photographically rather than to call in the artifi-



AL GILKS, A. S. C.

cial lights which have so revolutionized studio cinematography. We had to have our own laboratory unit on the field, necessarily without the facilities common to such a production center as Hollywood. But the entire under-

taking was met by the company as a whole with a fortitude that made possible the results that bespeak for themselves.

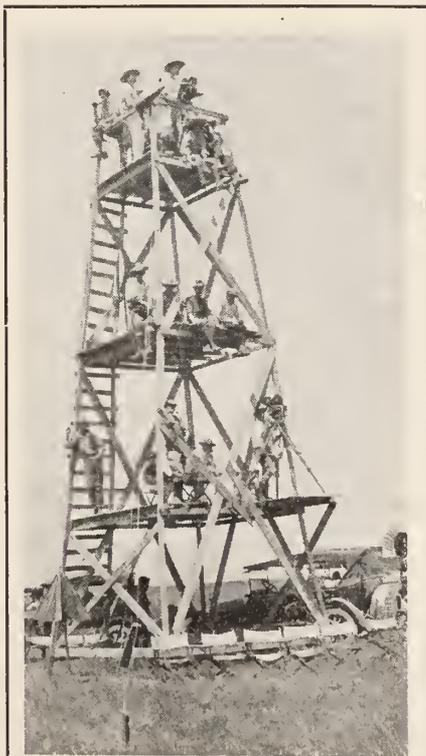
A major part of "North of 36" relates to the drive of the long horn cattle, fractious beasts from whom every precaution had to be taken to conceal the cameras. But we had to be polite to the long horns, especially since they were the only herd that the very active efforts of the Paramount organization could find in the length and breadth of the land.

Letter after letter and telegram after telegram went to the stockyards and cattle-raisers, inquiring if a herd of such a breed was available. The answer in each case was in the negative.

Just when things looked blackest we received word from James East, who was aiding us in our search, that after weeks of hunting through Old Mexico and southern United States, he had located a herd of four thousand long-horns on an immense ranch about thirty miles out of Houston, Texas,

By a coincidence, this herd was on almost the exact locale of the story as Emerson Hough wrote it and men from our location department immediately left for Houston to look over the grounds and arrange the final details.

It was the first long-horn drive in almost thirty-five years and according to the owner of the cattle, Bassett Blakeley, there will never be another. Mr. Blakeley plans



A triple-decked platform used to support cameras in filming action centering around cattle in "North of 36."



Camouflaging the camera from the cattle while bit of action with Ernest Torrence is filmed.

to ship the cattle to market and replace them with a more modern breed.

The drive in itself was an exact replica of the many which took place in southwestern United States during the 1866-75 period. In it there were over four thousand long-horn steers, three covered ox carts, thirty-two expert cow-punchers, and four men equipment and cooking. Strung out, they covered a distance of over four miles.

The cattle were driven over parts of the old Texas-Kansas Cattle trails and the routine on the trip was practically the same as if it had been a

real pioneer drive.

According to the group of cattle-men who served in an advisory capacity for the trip and who have been over the old trails dozens of times, the herds in the early days traveled at a rate of from twenty to thirty miles per day for the first week of the journey. Later, when the animals became tired, twelve to fifteen miles per day was considered good time. This same rate of speed was made by the Paramount company while filming the picture.

The daily routine also was similar to the scheduled on one of the early drives, which

was:

1. Graze morning until noon.
2. March until twilight.
3. Halt for another graze until dark.

While the herd was feeding in morning the company shot scenes of the players around the camp. From noon until twilight scenes were taken of the cattle and of the wagons and people on the march. When the troupe halted for the twilight graze, scenes of making camp and of the cowboys milling around the herd were taken.

(Continued on page 19)

Here's What Helen Klumph Thinks of A.S.C. Member's Cinematography

¶ In the December 14th, 1924, drama section of the LOS ANGELES TIMES, of which EDWIN SCHALLERT is drama and music editor, Helen Klumph, in an exclusive New York dispatch, had the following to say of the cinematography of Alfred Gilks, A. S. C., in "North of 36." Needless to say, Victor Milner, secretary of the American Society of Cinematographers, immediately wrote Miss Klumph as to the identity of the man who photographed "North of 36."

"At the Rivoli this week we have another stampede. 'North of 36' is the picture . . . 'If I could only remember the name of the cameraman who shot this picture I would like to send him a large bouquet. So far as I am concerned, he ranks with the immortals for having caught the lyric beauty of cloud-hung Texas skies. He seemed to be able to catch heat and cold and all sorts of atmospheric subtleties in his photography."

Camera Review of the Last Year



(¶ *The following article was originally written by the editor of this publication for the EXHIBITORS HERALD, in which it appeared as a brief and sketchy review of cinematography in 1924.*)

A resume of the cinematography of 1924 probably will not, in general, reveal any startling changes from that of 1923. Yet there have been such changes and improvements, as imperceptible as they might be as over last year. The progress of cinematography has been gradual, though rapid; and the contrast only asserts itself when present photography is compared with that of two or three years ago.

In addition to the evolutionary improvement that was manifested throughout the field of cinematography, the closing year saw photographic achievements that crystalized, in a vivid way, the advancement of the art of the camera since the advent of practical motion pictures.

Douglas Fairbanks' "The Thief of Bagdad" demonstrated what a flexible thing cinematography is, and drove home its importance to the layman who, for some inexplicable reason, has always accepted its rapid strides as a matter of fact. But just as the story of "Bagdad" itself intrigued the imagination, the cinematography therein did likewise, for the reason that both were so greatly predicated on each other.

Aside from its other ramifications, this production of Fairbanks was an irrefutable contribution to the science of cinematography. It threw off a restraint born of timidity in production matters, and conjured a confidence for others to avail themselves of the fullness of a science which, like electricity, apparently has more before it than behind it. Let it be said that in encouraging cinematography, the producer is broadening the present and the future of the industry itself, for, without being committed to an ambiguity, the picture is necessarily circumscribed by *moving pictures*.

Too much credit cannot be given to the

A. S. C. Members Make Great
Contribution in Field of
Cinematographic Progress

men responsible for the cinematography in "The Thief of Bagdad"—namely Arhtur Edeson, staff cinematographer for Fairbanks, and Philip H. Whitman and Kenneth MacLean, who worked with him on the special effects. All three are members of the American Society of Cinematographers.

Another of the 1924 creations in cinematography which should graphically appeal to the popular mind is "The Lost World," which First National is producing by arrangement with Watterson R. Rothacker. Speaking conservatively, this production should prove epoch-making. It is distinctly a "photographic picture." It opens up a vista, the like of which has always been shrouded except for the highly imaginative pen. Arthur Edeson handled the dramatic filming in this production also, and First National evidently thought so much of its possibilities that they induced Fred W. Jackman to leave the directorial fold long enough to supervise the photographing of its special effects. With him were associated Homer Scott and J. D. Jennings. All are members of the American Society of Cinematographers.

Space could be consumed indefinitely in enumerating the meritorious cinematographic efforts of the past year, but let it suffice to mention those which have appealed and will appeal most to the exhibitors' enigmatic patrons. In this regard, however, it might be well to recall "The Ten Commandments" which, though it should be properly classified with the previous year, was so revolutionary cinematographically that its results are still being felt. It was photographed by Bert Glennon, a member of the American Society of Cinematographers.

Color cinematography, through Paramount's production of "The Wanderer of the Wasteland," caused critics and public alike to enthuse, but the widespread adoption of color is still a matter for the future to decide.



Paul Perry, A. S. C., before he departed to Arizona with Bert Glennon, A. S. C., on the deer drive location trip, had just returned from a lengthy location jaunt into the Northwest with Douglas MacLean productions.

* * *

George Barnes, A. S. C., is finishing the camera work on the Cosmopolitan production, "Zander the Great," which, starring Marion Davies, is being made at the United Studios, Hollywood.

* * *

H. Lyman Broening, A. S. C., has completed the cinematography on the latest Erb production made at the F. B. O. studios, Hollywood.

* * *

Reginald Lyons, A. S. C., will leave shortly on a vacation trip to San Francisco. Is the rumor true that Reggie is about to add some more foreign cars to his string?

* * *

Stephen S. Norton, A. S. C., has been entrusted with important set-ups on the big scenes in "The Phantom of the Opera," which Charles Van Enger is filming for Universal.

* * *

Frank B. Good, A. S. C., is filming the latest John M. Stahl production at the Metro-Goldwyn-Mayer studios, Culver City. Harry Hartz, one of Frank's proteges of the roaring road, drove a daredevil race and ran away with second money at the recent big automobile race at Culver City.

* * *

King Gray, A. S. C., has been doing some speedy work on "Speed," which Edward Le Saint is directing at the F. B. O. studios. King called in Hans Koenekamp, A. S. C., for an extra set-up on some of the big passages of the production.

* * *

Robert Kurrle, A. S. C., is completing the cinematography on Henry King's latest production which is being filmed at the United Studios.

* * *

Kenneth McLean, A. S. C., has returned to Hollywood from Rome where he did special effect work for the Metro-Goldwyn-Mayer production, "Ben Hur."

* * *

Victor Milner, A. S. C., has finished Paramount's "East of Suez," starring Pola Negri and directed by R. A. Walsh.

* * *

Floyd Jackman, A. S. C., drops a note from Moapa, Nev., lauding the beauties of the desert and the mountains in Nevada and Utah where he is filming scenes for "Rex, the Wild Stallion," the latest production of Fred Jackman, A. S. C., for the Hal E. Roach studios.

"We have had," Floyd writes, "almost every known variety of weather, sometimes all in the same day. Crawling out of your tent and breaking the ice on the water is great sport—maybe, but it surely drives the sleep out of your eyes."

Faxon Dean, A. S. C., is in Birmingham, Ala., for the filming of location scenes for the latest Thomas Meighan production for Paramount. With him is Philip H. Whitman, A. S. C. Production headquarters on the Meighan picture are in New York City.

* * *

Herford Tynes Cowling, A. S. C., having returned from his latest swing around the globe, is now in Chicago, where are located the headquarters of Round-the-World Travel Pictures.

* * *

Dan Clark, A. S. C., is shooting a lot of frills and furbelows these days since "Dick Turpin," the latest Tom Mix vehicle for Fox, is in the nature of a costume production. J. G. Blystone is directing and Katherine Meyers is leading lady.

* * *

Ernest Haller, A. S. C., is finishing the cinematography on "Parisian Nights," a Gothic production directed by Al Santell. The cast includes Lou Telegen, Elaine Hammerstein, Rene Adoree and Gaston Glass.

* * *

Al Gilks, A. S. C., has begun work on "The Air Mail," Irvin Willat's next production for Paramount, the story being by Byron Morgan. The cast includes Billie Dove and Warner Baxter. Al has about ten day's work around the air mail hangars at Reno, Nev., after which he goes to the "ghost city" of Rhyolite, Nev., where two or three weeks will be spent "camping" in one of the deserted school buildings in the town.

Mitchell Cameras, Equipment

Go to Studios in Germany

American cameras and equipment will go to one of the most important producing centers on continental Europe as the result of a \$10,000 deal consummated between the Mitchell Camera Corporation, of Hollywood, and the German producing organization, Ufa Films, of Berlin.

During the past month arrangements were concluded between Henry Boeger, of the Mitchell company, and representatives of the German producers whereby the Mitchell outfits will enter the German studios.

The outfits include two camera units with all built-in features, ten magazines, two universal finders, two extension arms, two matte cutters, two sunshades, two tripod bases, two tripod heads, two camera cases, three magazine cases, two baby tripods and two Gimbal tripods.

Value of Modern 'Lab' Equipment is Stressed

A heavy outlay in the installation of automatic laboratory machinery in the plants of the Consolidated Film Industries, Inc., was announced this month by H. M. Goetz, vice president of the organization. Consolidated which combined the resources of four leading laboratories, has spent many thousands of dollars on research and experimentation, and has perfected the methods of processes of every department, Goetz announces.

Commenting on the operation of the newly installed machinery, Goetz emphasized the value of well-made release prints.

"Few people," he said, "not intimately acquainted with motion picture technique realize the remarkable fact that more than 100,000 separate little pictures, or 'frames' as they are called, are flashed on the screen in one average length photoplay.

"It is impossible to attain the accuracy necessary for the successful reproduction of



H. M. GOETZ

the wealth of detail comprised in each of these little 'frames' by antiquated methods.

"Only those familiar with the technical details of this highly specialized branch of motion picture industry understand the complexity of the daily task confronting manufacturers of motion picture prints.

"The size of the average picture projected in the larger theatres may be more than

Officer of Big Laboratories
Speaks of Efficiency of
Thorough Paraphernalia

40,000 times that of the original appearing on the film, and the slightest blemish or least imperfection—unnoticeable often to the naked eye—will stand out very plainly when undergoing such great magnification.

"To avoid all such defects which greatly hinder the perfect reproduction of the photographic beauty of a picture it is essential to provide ideal atmosphere and temperature where the film is treated and handled. At the Consolidated plants the air throughout is cleansed and moistened in a series of special processes and the proper even temperature is maintained under a system of automatic control that insures perfection.

"Similar care must be taken in the matter of lighting and in the quality of the chemicals used and the purity of the water. It is on account of the careful attention to these details in every department that Consolidated vouches for satisfaction in every release print."

¶ HAVING BEEN DURING THE PAST MONTH IN HIS NATIVE SOUTH FOR THE FILMING, IN BIRMINGHAM, ALABAMA, OF LOCATION SCENES WITH FAXON DEAN, A. S. C., PHILIP H. WHITMAN WAS UNABLE TO REPORT NEW YORK'S CINEMATOGRAPHIC LATEST; HENCE MANHATTAN MUTTERINGS MUST GO UNMUMBLED THIS MONTH.

The Editors' Lens - - - - focused by FOSTER GOSS

Encouragement and Cinematography

¶ To Rafael Sabatini, as the winner, and to Adolph Zukor, as the donor, of the \$10,000 award for the best motion picture story of the 1923-24 season, the *American Cinematographer* pays its respects—to Mr. Sabatini for his ability to write such a story as “Scaramouche”; and to Mr. Zukor, for the plan of the prize in the first place. Incidentally, the American Society of Cinematographers may justly be proud of the fact that the screen version of the Sabatini story was filmed by John F. Seitz, chief cinematographer for Rex Ingram, and Victor Milner, Seitz's associate on the production. Both are members of the A. S. C.

¶ We would not for a minute take the negative side of the proposition that “the play is the thing,” but rejoice in the initiative and the generosity, as displayed by Mr. Zukor, that has given Mr. Sabatini's genius a reward that it so richly deserves. But it does seem passing strange—with no intent to cast aspersions in any direction—that nothing in the nature of an award similar to that of Mr. Zukor has ever been so handsomely proffered encourage the most fundamental thing about motion pictures—namely, cinematography.

¶ It is not carping to point out, and we do so without apology, that a great screen story like Sabatini's “Scaramouche” would be useless for effective screen purposes if it were not for the tremendous strides that cinematography has made—without any extrinsic encouragement whatsoever. It does appear paradoxical that nothing has been done in the way of the Zukor award to spur on cinematography—which must, being basic, define, in in the future as in the past, the limits of maximum motion picture effort.

Mutual Goal

¶ The announcement, in other pages of this issue, of the projection department that is to be made a part of this publication is one which the *American Cinematographer* has been looking forward to for a great many moons.

¶ This journal, in common with cinematographers as a whole, has always realized the importance of the projectionist. He is one of the strongest—one of the most decisive—links in the whole great chain of the picture that begins with the camera and ends on the screen. His is the responsibility of whether or not the work of the director, the player and the cinematographer, the money and care spent by the producer, are to be represented on the screen in their true values.

¶ Without efficient projection, every one's efforts fall short, no matter how nearly perfect they may have been in the inception.

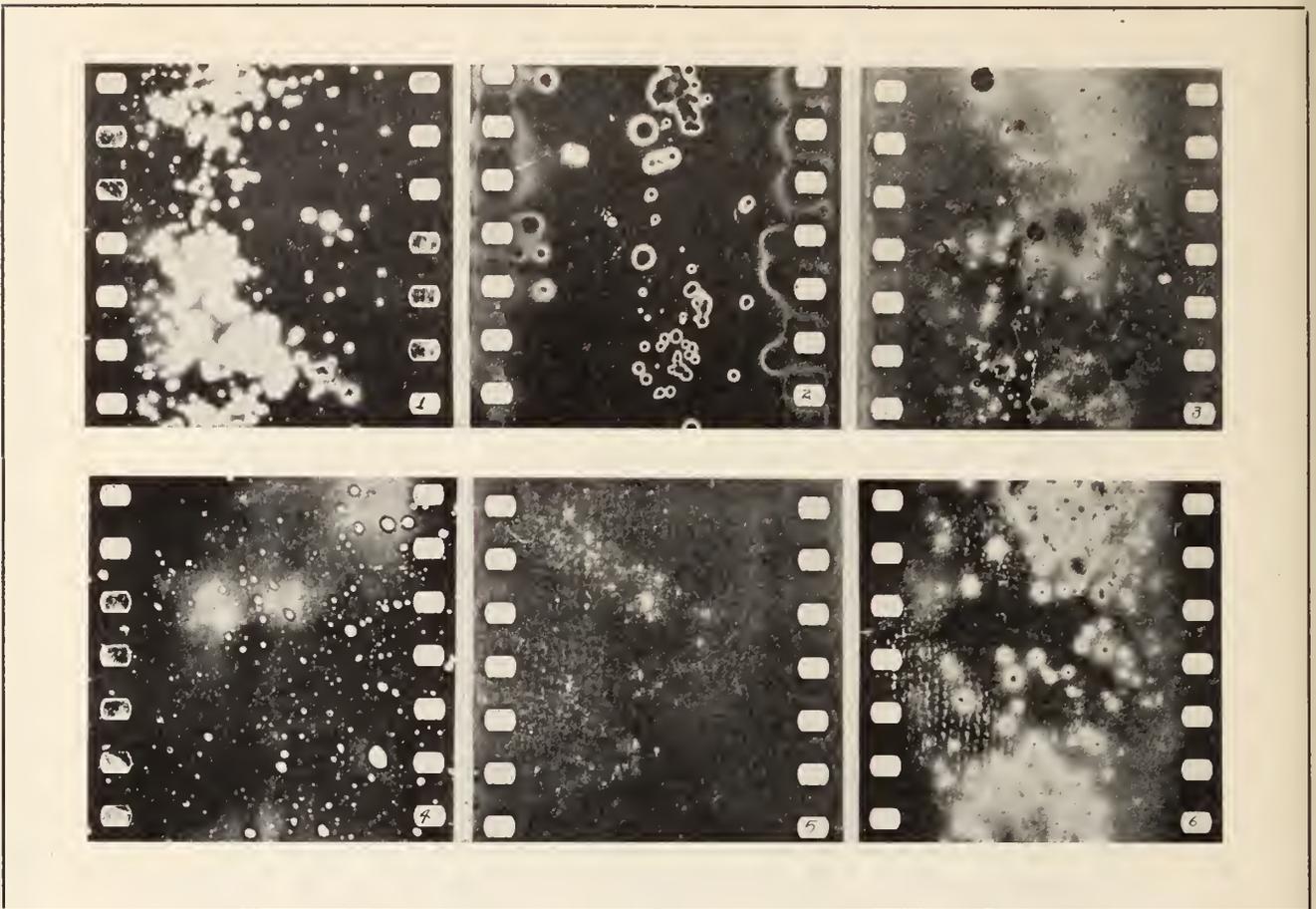
¶ It is only natural then that a close relationship between the projectionist and the cinematographer must redound to the benefit of all concerned—director, player, producer, every one. Working toward a mutual goal—the perfect screen presentation—these two great divisions of the art can be of even greater service than they heretofore have been, even though their strivings have gone by comparatively unnoticed.

¶ The *American Cinematographer* believes that it has taken a logical step in making its pages of interest to the projectionist as well as to the cinematographer. So does it also believe that, in the person of Mr. Earl J. Denison, it has been able to obtain the logical man to handle such a department. Mr. Denison knows the theory of his profession, but above all he is *practical*, being constantly active in his chosen line of work, and, being so, knows projectionists and practical projection.

Markings on Film From Drops of Water

By J. I. Crabtree and
G. E. Mathews
Eastman Research Laboratories

From Transactions
Society of Motion
Picture Engineers



When droplets of water come into contact with motion-picture film either before or after the film is exposed and previous to development, spots are formed which later appear as objectionable defects on the film. Markings are also apt to be produced if all superfluous moisture is not removed from the film before drying or if the rate of drying is changed during the progress of drying. Moisture spots are always produced on the emulsion side of motion picture film and never on the base side, since the film is resistant to moisture.

To date, little has been known regarding the various factors which affect the nature of the markings produced in the above manner. This work was undertaken in order to study these factors, and prepare a classified index of the various markings which would serve as a source of reference for the identification of spots and markings of unknown origin.

Water markings may be of the following types:

A. Markings produced previous to develop-

ment and caused by:

1. Water accidentally touching the film.
2. Condensation of water vapor from humid atmospheres.

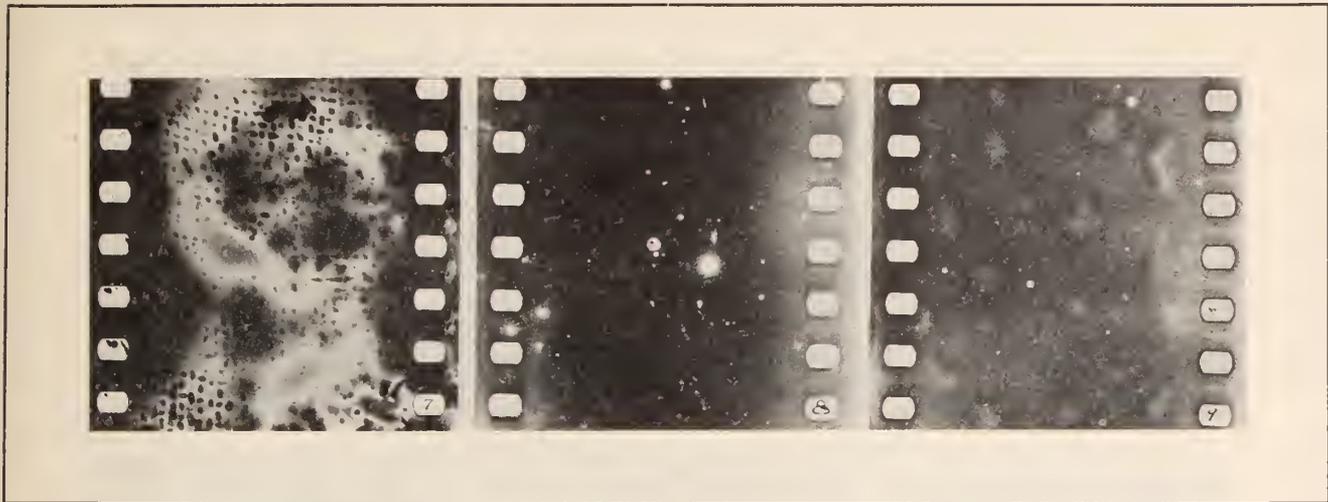
B. Markings produced after development and fixation and caused by:

Abnormal drying conditions.

FACTORS INFLUENCING THE FORMATION OF MOISTURE MARKINGS

1. *Markings Produced Previous to Development By Drops of Water.*

Experimental Procedure.—Three emulsions were used in the tests; Eastman Motion Picture Negative (no backing), Eastman Super-speed Motion Picture Negative (no backing), and Eastman Regular Motion Picture Negative film. The normal treatment consisted in either (a) spraying the emulsion side of the film with a small hand atomizer which delivered a fine spray evenly distributed over the area toward which it was directed or (b) covering the emulsion side with a layer of moist cheese-cloth for two minutes so as to produce



MARKINGS CAUSED BY DROPS OF WATER

No.	Marking	Treatment	Time and Temperature of Storage before Development	Emulsion
1.	White spots with hazily defined edges	Exposed before spraying with atomizer	1 wk. 110° F.	Positive
2.	White spots, black center or gray spots with black nucleus and white halo	Exposed before spraying with atomizer	1 wk. 110° F.	Negative
3.	Black spots	Exposed before spraying with atomizer	2 days 110° F.	Superspeed Negative
4.	White spots, black halo	Exposed before spraying with atomizer	1 wk. 110° F.	Positive
5.	White impression of cloth	Exposed before impressing with moist cloth	1 wk. 68° F.	Superspeed Negative
6.	White impression of cloth	Exposed before impressing with moist cloth	1 wk. 110° F.	Superspeed Negative
7.	Black impression of cloth (reversed image)	Exposed before impressing with moist cloth	1 wk. 110° F.	Positive

(Numbers 6 and 7 show the effect of increasing the temperature.)

The above examples are typical and not peculiar to the emulsions indicated. Under favorable conditions any type of marking may be produced on any emulsion.

MARKINGS CAUSED BY CONDENSED WATER VAPOR

8.	Small white spots	Exposed before humidifying	1 wk. 68° F.	Negative
9.	Mottled spots	Exposed before humidifying	48 hrs. at 42° F. 1 wk. at 110° F.	Negative
10.	Serrated edged spots	Exposed after humidifying	24 hrs. at 42° F. 24 hrs. at 110° F.	Negative

MARKINGS CAUSED BY ABNORMAL DRYING CONDITIONS

		<i>Drying Conditions</i>		
11.	Spots with dark narrow outlines	Drops of water on emulsion	One-half hr. to one hr. at 68° F.	Positive
12.	Dark gray spots, white centers	Drops of water on emulsion	30 minutes at 90° F.	Positive
13.	Hazy white spots	Drops of water on emulsion Developed and fixed at 68° F. Washed 25 minutes at 80° F.	25 minutes at 110° F.	Positive
14.	Streaks	Drops of water on emulsion Carelessly wiped	30 minutes at 90° F.	Negative
15.	Spots with hazy gray halos	Drop of water on base side	30 minutes at 90° F.	Positive

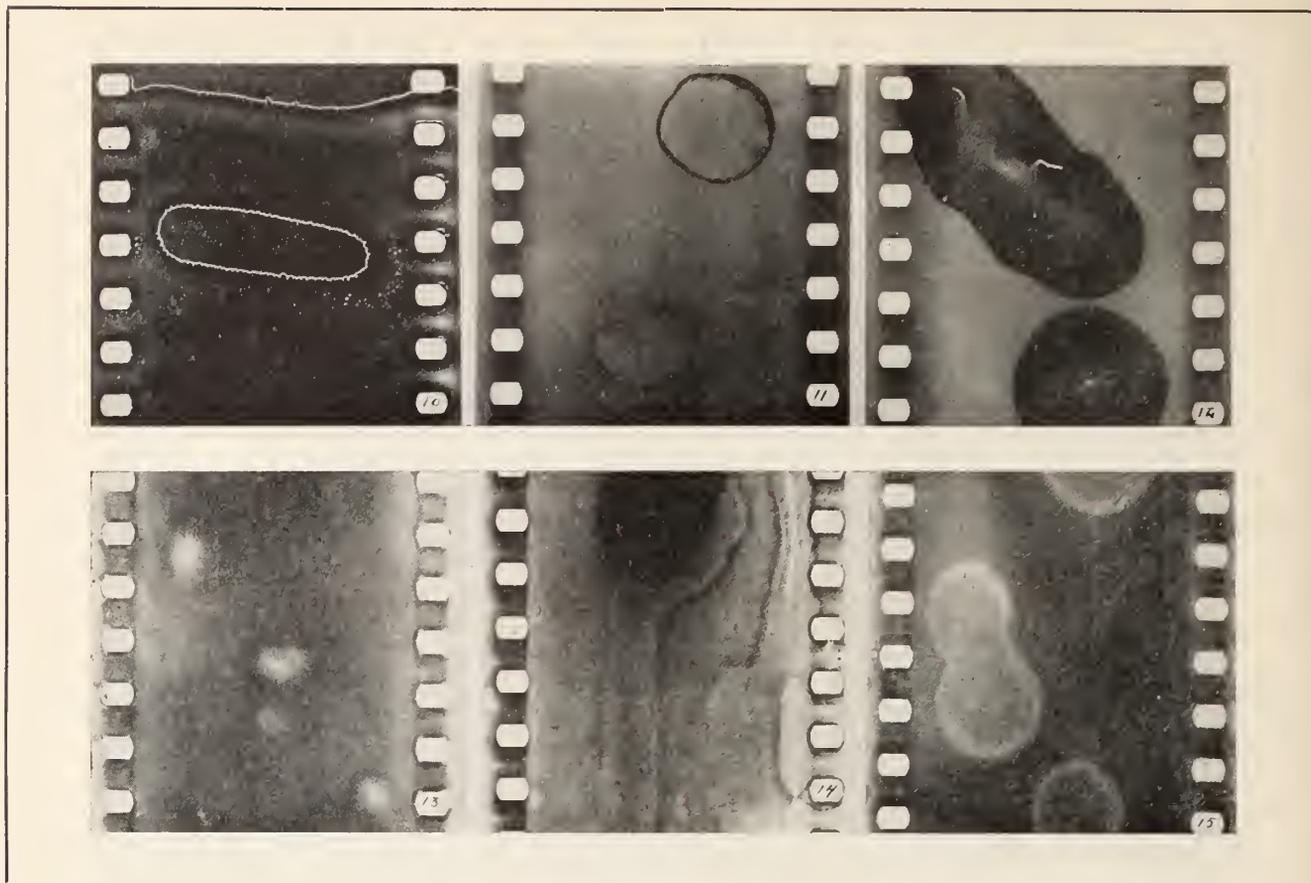
a uniform moisture pattern. The order of exposure relative to the moisture treatment was as follows:

1. Unexposed before moisture treatment.

2. Exposed before moisture treatment.

3. Exposed after moisture treatment.

When exposing, the film was flashed so as to produce an average density of 0.8 after



development. Four foot lengths of film were used and, after the moisture treatment, these were wound on wooden film spools, and tightly sealed in film cans of 200 foot capacity. Two samples were placed in each can, one to be developed at the end of two days and the other after one week. Duplicate sets were made up, one being maintained at room temperature (68° F.) and the other at a tropical temperature (115° F.). The film samples were developed in the usual manner.

FACTORS AFFECTING NATURE OF MARKINGS

1. *The Nature and Age of Emulsion.*—Of the three emulsions examined, the positive showed a somewhat greater sensitiveness to moisture than the negative emulsions, but emulsions two years old showed only a slightly greater propensity to give markings than new emulsions.

2. *Temperature.*—When the emulsions were subjected to an increased temperature after the moisture treatment, the number and extent of the markings were very noticeably increased. No new markings were observed at the higher temperatures.

3. *Nature of Support.*—In order to determine whether the nature of the support on which the emulsion was coated influenced the mark-

ings in any way, parallel experiments were made with new and old emulsions coated on glass plates and on film support, but no difference either in the number or appearance of the markings on the various supports was noticed.

NOTE.—On examining the gelatine coating of the glass plates by reflected light after removing from the wash water preparatory to drying, tiny pits or indentations were observed which coincided exactly with the markings as seen by transmitted light.

4. *Order of Exposure.*—Markings produced on film before treatment as compared with those on unexposed film were similar in general appearance, though the background of uniform density produced by exposing (flashing) served to increase the visibility of the markings.

Exposing the film after the moisture treatment appeared to make the markings slightly more pronounced; which may have been a result of the lens-like nature of the drops of water.

5. *Time Exposure to Moisture before Development.*—In general, more markings were observed on film which was allowed to remain

(Continued on page 20)



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AMERICAN CINEMATOGRAPHER TO HAVE PROJECTION DEPARTMENT AS PART OF EACH ISSUE

(Continued from page 4)

By Arrangement with F. P. L.

Mr. Denison is motion picture engineer in charge of projection with the Famous Players-Lasky Corporation, by arrangement with which, the A. S. C. is able to have Mr. Denison take charge of the new department.

Began as Projectionist

Like several A. S. C. members themselves, Mr. Denison started in the business as a projectionist. That was in 1906 and from that time until 1909 he was regularly employed as such. He then took up special lines of work in connection with projection including experiments on one of the first talking pictures which he also demonstrated in several cities. He invented and patented several devices used in connection with projection, splicing and handling motion picture film.

From 1912 to 1913 he managed a commercial film laboratory and projection equipment establishment in Chicago. He operated one of the first commercial film renovating plants in the United States.

From 1914 to 1917 he specialized in projection room construction, and the equipment of the same. In 1918 he was sent to France as field supervisor for the community motion picture bureau which was in charge of the exhibition of motion pictures for the U. S. Government. He was subsequently transferred to Italy as director of motion picture entertainment for the A. E. F.

Six Years

It was in 1919 that Mr. Denison joined the Famous Players-Lasky Corporation as motion picture engineer in charge of projection and physical handling of prints in exchanges, there being now 40 of the latter in the various key cities. During the six years that he has been affiliated with Famous Players-Lasky, Mr. Denison has completely revolutionized the splicing and handling of prints in the exchanges, and has standardized the inspection, splicing and projection room equipment. He has invented and perfected a number of devices now in use by the Paramount organization in connection with inspection, splicing and projection of film. He inspected hundreds of projectors throughout the country

in investigating the causes of film damage.

In Touch with Projectionists

Mr. Denison covers the 40 key cities at least once each year, visiting and consulting with a great number of projectionists with whom he is in constant personal touch in a practical way. He has spent two years in the laboratories in New York and Hollywood and is responsible for several improvements pertaining to the handling of release prints in laboratories. He revolutionized studio and laboratory projection. He is constantly engaged in research work both in field and laboratory regarding projection and film damage. He specified all projection equipment in the big new laboratory in the Famous Players-Lasky laboratory in Hollywood. Mr. Denison was in charge of installation of projection equipment in the homes of foremost directors and celebrities, besides having directed the motion picture entertainment of some of the most fashionable social functions in the country. He is the author of several booklets on film and projection which have been distributed all over the world. He produced several slow-motion pictures showing the action of film in projectors, etc.

Mr. Denison is an active member of the Society of Motion Picture Engineers (S. M. P. E.), membership in which is only obtainable on the strength of certain accomplishments in the motion picture industry. He is, besides being in constant touch with projectionists, likewise in touch with cinematographers, directors and theatre and exchange managers, spending at least eight months of the year in the field.

New Bell and Howell Model Is Exhibited at A. S. C. Open Meeting

Members of the American Society of Cinematographers were given an opportunity to view the new Bell & Howell camera when the new professional model was placed on inspection at the A. S. C. open meeting of December 29th, held in the Society's headquarters in the Guaranty Building.

The instrument was in charge of G. R. Richards, Hollywood representative of the Bell & Howell Company, and was the center of interest of the A. S. C. members present at the meeting.

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PHOTOGRAPHING "NORTH OF 36"

(Continued from page 6)

As everyone knows, cowboys on guard spend the night in the saddle. During the drive for the motion picture, this also was done, not in an attempt to imitate the old cattle drives to that extent, but rather because of necessity. With the four thousand long-horns used in the film there was just as much chance, just as much danger, of an uncalled for stampede as there was fifty or sixty years ago. According to several of the two hundred and fifty cattle men who attended the start of the journey in the filming of the motion picture, the four thousand long-horns were about the wildest animals any of them had ever seen.

In this night watch everybody in the company took part — Jack Holt, Ernest Torrence and Noah Beery, as well as the minor players. Each was given a shift of a certain number of hours.

Three of the many interesting scenes which occurred during this drive were a river fording scene and two stampedes.

The fording scene is one of the most vivid shots of the entire production. Flanked on each side by sixteen cow-

boys and led by Alamo, the oldest long-horn in existence, the four thousand cattle swam across a river almost half a mile wide. Closely following them were the three covered wagons, containing the women, being towed across by six span of oxen. The entire scene was taken without a loss of life or an injury either to the men, the horses or the cattle.

Even Producer Irvin Willat, a former cameraman, who from the success of his productions for Paramount including "Heritage of the Desert" and "Wanderer of the Wasteland", has a reputation of making thrilling as well as beautiful scenes, said it was one of the most vivid sequences he has ever produced.

Technical directors and chief carpenters left in advance of the company to start construction on the buildings. On nearly all location trips most of the carpenters are hired locally.

The carpenters on "North of 36" had two jobs. One was to arrange for the accommodation of the huge company of players and staff. The other was to build sets for the picture.

For the housing of the people two twenty-five room

ranchhouses were selected. Added to these two dozen army tents were erected for sleeping quarters and additional buildings were thrown up for the saddle house, the horse-stable, the mess-halls, the laboratory, the power house and the property rooms.

The production sets required even more work. Aside from the minor buildings an entire town, an exact replica of the old cattle village of Abilene, Kansas, had to be erected. This town, copied from engravings and sketches in books and newspapers and from information obtained from early Kansas settlers, included a hotel, hardware store, livery stable, cattle pens, railroad depot, saloon, dancehall, general store, black-smith shop and a dozen residence houses. Each house and store in the picture is an exact duplicate of the original building in old Abilene.

In addition to the featured players we carried forty real cow-men of proven ability as actors. Fortunately we arrived in Houston at the time a gigantic rodeo was taking place and from this rodeo we obtained some of the best riding and steer-roping talent on the entire North American continent.

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MARKINGS ON FILM FROM DROPS OF WATER

(Continued from page 14)

undeveloped for a week after the moisture treatment than on film developed two days after the treatment.

A2. Markings Produced Previous to Development caused by Condensation of Water Vapor from Humid Atmospheres.

Film is often subjected to humid conditions with resulting absorption of water vapor. If the film is suddenly transferred from a warm atmosphere to a cold atmosphere, condensation occurs on the surface of the film and tiny droplets of moisture are formed which may produce markings on the developed film.

Experimental Procedure.—The tests were divided into three groups: (1) Humidification at room temperature, (2) humidification at tropical temperatures (100-110° F.), and (3) sudden changes from low temperatures to tropical temperatures and *vice versa*. For the experiments, special humidors were constructed, consisting of two motion picture film cans (200 foot capacity) soldered bottom to bottom. Holes were then punched in the separating wall and just before starting the test, a moist felt pad one foot square was placed in the lower half of the humidor. The film in two or four foot lengths, loosely coiled, was placed in the upper chamber for the test and the cover was then doubly sealed with adhesive.

The film was exposed so as to produce a density of approximately 0.8 after development.

FACTORS INFLUENCING NATURE OF HUMIDITY MARKINGS

1. *Effect of Nature of Emulsion.*—Several new markings were observed under varying conditions of humidification and refrigeria-

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tion with all the emulsions examined. The markings were found to be due to physical conditions to which the film was subjected rather than any inherent chemical nature of the emulsion.

2. *Effect of Order of Exposing.*—In general the spots were more predominant on film which was exposed before humidification than on film exposed after humidification.

3. *Effect of Time and Temperature of Humidification.*—Very few spots were observed on film humidified for one week at room temperature, but at tropical temperatures the number of markings was considerably increased, although only two distinctly different types were observed.

In general the intensity of the markings increased with time of humidification, reaching a limit after a certain time depending on the temperature.

4. *Effect of Sudden Change of Temperature.*—When the film was subjected to sudden changes of temperature, from hot to cold or cold to hot, several types of spots were produced, but these with two exceptions were all similar in character to the spots caused by drops of water described above. The exceptions noted will be discussed later.

To summarize.—No fundamental rule can be given relative to the chance of one or more kinds of spots appearing as the result of the order of exposure under the conditions outlined in Section A1 or A2 but in general all types of moisture markings are slightly more prevalent on film exposed after moisture deposits on the surface than on films exposed after moisture deposition occurs.

Physical conditions to which the film is subjected, such as temperature changes, and the time of contact with moisture before development, are the direct causes of the markings rather than any inherent differences in emulsions or supports on which they are coated.

B. Markings Produced after Fixing and Washing caused by Abnormal Drying Conditions.

After washing, and previous to drying, excess moisture is usually removed from motion picture film either with a cotton swab or chamois by centrifuging, or by means of a blast of air. If the water is incompletely removed, droplets or streaks of water remain on the film and when the film is dried under unfavorable conditions markings appear on the areas previously occupied by the droplets or streaks of water.

Experimental Procedure.—The positive and negative film used for the tests was exposed so as to give density of about 1.0 after development. After thorough washing all excess moisture was carefully removed from the film and then droplets or streaks of water were placed either on the emulsion side or the base side so as to simulate imperfect removal of excess moisture.

For the high temperature drying (90 to 120° F.) a cabinet was used which contained electric heating units and an air blower. Slow drying conditions were secured by the use of a small insulated box in which a pan containing a small volume of water was placed.

In order to study the influence of the degree of tanning of the gelatine on the propensity of the film to give drying marks consecutive samples of film were fixed in (a) 30% plain hypo, (b) an alum-acid fixing bath, and (c) 30% hypo followed by a bath of 2% formaline. The films were also treated for varying times and at varying temperatures during the progress of development, fixation, and washing, so as to produce different degrees of swelling of the gelatine.

The effect of the rate of drying of film treated as above was carefully studied, especially the effect of slow drying in a saturated atmosphere as compared with rapid drying at low humidities.

FACTORS AFFECTING NATURE OF DRYING MARKINGS

1. *The Degree of Swelling of the Gelatine.*—The swelling of the gelatine is governed by (a) the time of immersion of the film in the various photographic solutions and the temperature of the solutions, (b) concentration and composition of the solutions, and (c) the degree of hardening produced by the fixing bath or other hardening baths.

The propensity for drying marks to occur increased with the degree of the swelling of the gelatine, so that in order to reduce the possibility of the formation of drying marks to a minimum, swelling of the gelatine should be prevented by keeping the various developing solutions at a temperature not higher than 70° F. and by the use of a suitable hardening baths, although superhardening of the film should be carefully avoided because this tends to produce brittleness. Prolonged washing at ordinary temperatures does not render the film more susceptible to drying markings.

2. Methods of Removal of Surplus Water

Previous to Drying.—Providing all superfluous moisture is removed from both sides of the film previous to drying, the propensity for markings to occur is independent of the method of removing the moisture.

Methods of removal of excess water previous to drying and correct conditions of drying are discussed in a previous paper by one of the authors.¹

3. *The Temperature and the Rate of Drying.*—Markings which are only just visible on the film dried slowly in partially saturated air are objectionably prominent when the film is dried rapidly at high temperatures. Rapid drying, even at normal temperatures, accentuates the markings, but the majority of the drying marks on motion picture film are traceable directly to rapid drying at high temperatures.

If the rate of drying of the film is suddenly changed, once the gelatine coating has commenced to dry at the edges, markings are invariably produced whose contour corresponds with the "shore line" between the wet and dry portions of the film. It is important therefore not to change suddenly the speed of the drying reels, especially when the conditions are favorable for rapid drying.

For details regarding correct conditions for drying, see "The Development of Motion Picture Film by Reel and Tank Systems," by J. I. Crabtree.²

CLASSIFICATION OF MOISTURE SPOTS AND MARKS, WITH A DESCRIPTION OF THE MANNER OF THEIR FORMATION

The markings are listed under three classifications; namely spots and marks caused by (A) actual moisture accidentally touching the film, (B) condensation of water vapor from humid atmospheres, and (C) abnormal drying conditions. The illustrations correspond with the numbers given below.

A. Markings Caused by Actual Moisture Accidentally Touching the Film.

1. *White Spots.*—This type of marking most usually occurs as round or irregularly shaped spots with hazily defined edges, either singly or in clusters. Other varieties are (a) irregular grey areas with white spots scattered throughout, and (b) mottled patches of slightly lighter density than the surrounding film. The latter types were most commonly found on film which had been exposed before the moisture treatment. White spots occur independ-



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1. Crabtree, J. I., "Development of Motion Picture Film by Reel and Tank Systems," Trans. Soc. M. P. Eng., No. 16, p. 163 (1923).

2. Crabtree, J. I., Trans. Soc. M. P. Eng., No. 16, p. 163 (1923).

ently of the kind of emulsion, although tropical temperatures cause more spots to appear especially on positive film.

2. *White Spots with Black Centres or Grey Spots with a Black Nucleus and a White Halo.*—The most common form is a perfectly round spot, although occasional irregular types were observed as well as group formations of several circular black spots with a large greyish-white halo extending around the entire group. In some cases, the centre is grey instead of black. It was rarely found unless the film had been subjected to tropical temperatures and, in general, the size and number of the markings were greater at the end of one week than after two days under tropical conditions.

3. *Black Spots.*—Although this marking is by no means as common as some of the the rest of the film, but occurred frequently on each of the different emulsions tested to justify its inclusion in the classification. It appears as a small round spot of density much darker than the surrounding film and of fairly sharp outline, although variations occur wherein the outline is a hazy dark grey halo, darker than the rest of the film, but occurred frequently on positive film, especially if the film was exposed before the moisture treatment, and accompanied by high temperature conditions. In general, the number of markings increased with the time elapsing between the moisture application and development of the film.

4. *White Spots with Black Rings.*—This marking occurs as a round or irregular white or grey spot with a black or dark grey halo. It resembles a reversal of No. 2. Sometimes the centre of the marking, instead of being clear, contained a small dark spot. The marking was not observed on unexposed film. With both negative emulsions, exposed after the moisture treatment, no markings were found, but on positive film, exposed before the moisture treatment and, especially at tropical temperatures, the spots were very prevalent.

5, 6, 7. *Cheese Cloth Impressions.*—The usual markings produced by impressing moist cheese cloth on any of the three emulsions consist of a white impression of the fabric on a dark background. The order of exposing has little or no effect on the nature of the marking. At room temperature (No. 5) the impressions are far less accentuated than at tropical temperatures (No. 6). Positive film was slightly more sensitive to the impressions than the

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two negative emulsions. A few cases of black impressions of the cheese cloth were noted on film exposed after the moisture treatment, but the greater number of black markings occurred on film exposed before being impressed with the moist cheese cloth (No. 7).

B. Markings Caused by Condensation of Water Vapor from Humid Atmospheres.

8. *White Spots.*—The most common marking was a tiny white spot similar in appearance to No. 1, except that it was rarely observed in clusters and seldom in sizes over one-sixteenth inch in diameter. At room temperatures few spots appeared unless the film was permitted to humidify for a week, whereas at tropical temperatures the spots were found in large numbers on film left two days in the humidior. When the effect of sudden changes of temperature conditions was studied, very few spots were produced unless the film was subjected to at least eight hour's humidification previous to the change to frigid conditions. In every case the markings were more numerous on film which was flashed before the moisture treatment. When the film was refrigerated previous to humidification, the time of refrigeration had little apparent influence on the size and extent of the markings.

9. *Mottled Spots.*—On film which had been subjected to sudden temperature changes, irregular mottled spots were found which were of slightly lighter density inside and slightly heavier density outside than the surrounding film. The marking is vague in outline and hazy in appearance. It was occasionally found with a dark grey spot in the centre. In general, mottled spots occurred more frequently

on film which had been refrigerated previous to humidification. The order of exposure appears to have little influence on the extent of the markings.

10. *Serrated Edged Spots*.—When film is subjected to abnormal humidity conditions so that the condensed moisture is sufficient to render the gelatine mobile, certain specific markings are produced on refrigeration. The most common spot has sharply defined edges deeply serrated with a slightly lighter density just inside the serrations, while the centre of the spot has a density similar to the remainder of the film. When conditions are reversed—that is, refrigeration preliminary to humidification, especially if the refrigeration is short compared with the time in the humidior—the spots are likewise formed. A few examples were noted on film treated at tropical temperatures, which was exposed after the moisture treatment. The order of exposing the film had only a slight effect on the tendency for the spots to occur.

Miscellaneous Markings.—A few scattered examples of spots similar to Nos. 2 and 3 were noted. These were found chiefly on film which had been exposed and humidified at 110° F. for 48 hours and then refrigerated 24 hours, and in another case where the film had been refrigerated 48 hours and then humidified at 110° F. for one week. In one case where the film had been humidified at 110° F. for 24 hours and subsequently refrigerated 24 hours, there were a great many markings like No. 4. Generally speaking, there were very few examples of markings like those found where actual water comes in contact with the film as mentioned in under A, with the exception of the white spots (No. 1), which is the most common moisture spot observed on motion picture emulsions.

C. Markings Caused by Abnormal Drying Conditions.

Although drying marks are always produced on the emulsion side of film, their formation may be the result of either one or both of the following causes: (a) excess water remaining on the emulsion side of the film (as illustrated in figs. 11, 12, 13 and 14), or (b) excess water left on the base side of the film (as shown in fig. 15). In the latter case the local areas on the emulsion directly opposite the moisture spots on the base side, are cooler than the surrounding film, resulting in a selective drying action, as noted in a recent article

by one of the authors.³ The severity of the markings produced by either of the above causes is directly dependent on the temperature and the humidity conditions and on the time of drying.

11. *Spots with Dark Narrow Outlines*.—This marking is distinguished by a dark narrow band, which constitutes the edge of the spot. All the area within this band is of the same density as the rest of the film. It is caused by large droplets of water remaining on the emulsion side.

12. *Dark Grey Spots with Small White Centres*.—When large drops of water are accidentally left on the film which is subjected to rapid drying at high temperatures (90-120° F.), spots are produced whose general density is considerably darker than the surrounding film. The point in the spot where the last water evaporates appears as a tiny white spot. In some cases, a narrow white halo may be found just inside the outer edge of the spot.

13. *Hazy White Spots*.—Occasionally on film which has been developed in solutions at temperatures around 80 deg. F. or over, when the gelatine is in a swollen condition, small vaguely defined white or grey spots are found, especially if the film is dried rapidly at high temperatures (120 deg. F.), even when all superfluous moisture is removed. The markings resemble No. 1, except that the outlines are usually less clearly defined.

14. *Streaks*.—Sometimes streaks remain on the film during drying which causes long string-like grey marks of slightly heavier density than the rest of the film. Variations are found where edges are dark and the side of the streak slight grey. This marking occurs on film dried either at room or tropical temperatures.

15. *Spots with Grey Halos*.—The most common marking found as a result of the presence of water on the base side of film is a spot with a hazily defined edge or halo of much lighter density than the centre, where the density is nearly the same as the remainder of the film. On film dried at room temperature, this marking is just discernible, but at higher drying temperatures the spots are greatly accentuated. Other varieties are: (1) grey streaks along the edge of the film just inside the perforations as shown in fig. 15, and (2) small round light gray spots even density. All spots caused by water on the base

³ Crabtree, J. I., Trans. Soc. M. P. Eng., No. 16, p. 163 (1923).

side are less distinct than those caused by water on the emulsion side.

From an examination of the various markings produced by moisture, it is seen that there are three essentially different types; namely (1) black spots or local areas of greater density than the surrounding portions, (2) white spots or local areas of lesser density than the surrounding portions, and (3) composite spots (see figs. 2 and 4).

Black spots may be a result either of an increase in sensitivity of the emulsion or of the production of a latent image. It is quite conceivable that when a moistened spot of emulsion is subjected to high temperatures the emulsion becomes "cooked," resulting in an increase in sensitivity. On the other hand, during the progress of drying a moistened spot of emulsion, the grains of the emulsion are subjected to severe stresses, as described by with a dark gray spot in the centre. In *gen-Ross*⁴ and such stresses are conceivably sufficient to produce a latent image. Moreover, a displacement of the grains of the emulsion, which occurs during drying, would result in local areas of greater or lesser density on subsequent development.

White spots may be a result either of a decrease in sensitivity or a destruction of the latent image. *E. Cousin*⁵ ascribes the cause of moisture markings produced by touching an unexposed photographic plate with the end of a dampened stirring rod to a loss of sensitivity of the region affected. The possible destruction of the latent image might be ascribed at first thought to the possible decomposition products of the film support, but definite experiments as outlined above showed that spots of identical nature were obtained with emulsions coated both on glass and on film supports.

Black and white spots may be a result of bacterial action. Further experiments relating to bacterial markings are in progress.

That the same substance (water) should at the same time cause black spots and white spots is difficult to explain.

Drying markings are undoubtedly a result of displacement of the silver grains in the developed emulsion from their original position, as explained by *Sheppard and Elliott*⁶ and *E. Senior*.⁷

Markings are produced on exposed and unexposed motion picture film by water, either in form of actual drops or condensed when it is transferred from a warm to a cold saturated atmosphere. Water markings

can also be produced on developed motion picture film during drying if drops or local areas of water remain on either side of the film, which is then dried rapidly at a relatively high temperature and low humidity. Drying marks are also produced even if the surface of the film is free from drops of water if the drying of the film is suddenly changed during the progress of drying.

Moisture markings are most generally the result of localized physical stresses set up in the gelatine layer rather than of chemical action.

It is important, therefore, to preserve unexposed motion picture film in a relatively dry atmosphere and at a relatively low temperature, although the effect of high temperatures is somewhat nullified in the absence of moisture. It is dangerous to suddenly transfer film which has been freely exposed to a hot humid atmosphere to a cold saturated atmosphere in view of the possibility of the condensation of moisture on the emulsion.

On leaving the factory motion picture film as contained in the cans is in equilibrium with an atmosphere having a relative humidity of 70 to 75 per cent., and in this condition there is little danger of the formation of moisture spots, even if the film is suddenly cooled. In case negative film is exposed under very moist conditions so that the emulsion coating of the film is in equilibrium with an almost saturated atmosphere, and especially at high temperatures, it is necessary to dehydrate the film before repacking, so as to restore it to a condition approximately that existing when it left the factory, in order to eliminate the possibility of the formation of moisture spots as the result of condensation and prevent any possible loss of the latent image. A convenient method of drying out film is to rewind the roll loosely and place it in a closed metal container containing either old newspapers which have been dried out in an oven and which are hygroscopic, or asbestos wool which has been previously soaked in a saturated solution of calcium chloride and then thoroughly dried out on a shovel or sheet of tin over a fire. The film should be allowed to dry out overnight, then rewound tightly if necessary, and immediately sealed in the original container. When the calcium chloride becomes thoroughly moistened it should be re-dried over the fire.

4. *Ross, F. E., Astro. Phys. J.* 52:96 (1920).

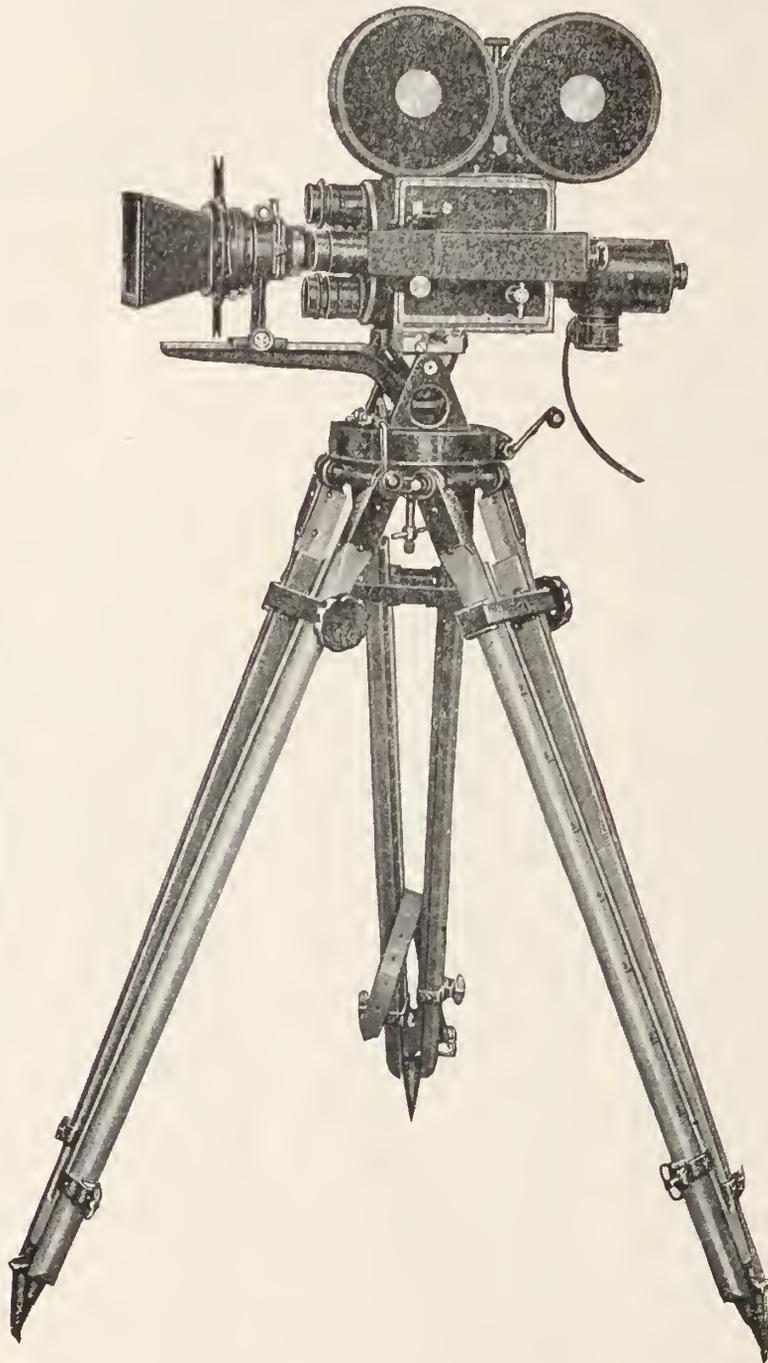
5. *Cousin, E., Bull. Soc. Fran. Phot., Oct. 1918, p. 27.*

6. *Sheppard and Elliott, Ind. and Eng. Chem., 10:727 (1918).*

7. *Senior, Edgar, B. J., 63:403 (1915).*

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Fildew, Wm.—
Fischbeck, Harry A.—with Ritz Carlton Pictures, starring Rudolph Valentino.
Fisher, Ross G.—with A. J. Brown Productions, Russell Studio.
Gaudio, Gaetano—with Norma Talmadge, Joseph Schenck Productions; United Studios.
Gilks, Alfred—with Famous Players-Lasky.
Glennon, Bert—with Paul Bern, Famous Players-Lasky.
Good, Frank B.—Metro-Goldwyn-Mayer Picture Corp.
Gray, King D.—F. B. O. Studios.
Griffin, Walter L.—
Guissart, Rene—with "Ben Hur", Italy.
Haller, Ernest—Del Andrews Prod.
Heimerl, Alois G.—
Jackman, Floyd—with Fred W. Jackman Prods.
Jackman, Fred W.—directing Fred W. Jackman Prods., Hal Roach studios.
Jennings, J. D.—with First National, United Studios.
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Kull, Edward—with Universal.
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Lundin, Walter—with Harold Lloyd Productions, Hollywood Studios.
Lyons, Reginald—
MacLean, Kenneth G.—
Marshall, Wm.—with Carlos Prods.
Meehan, George—with Henry Lehrman, Fox.
Milner, Victor—with Famous Players-Lasky.
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Palmer, Ernest S.—
Perry, Harry—
Perry, Paul P.—
Polito, Sol—with Hunt Stromberg Productions.
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Rizard, George—New York City.
Roos, Len H.—with Fox Educational Film Corp.
Rose, Jackson J.
Roshier, Charles—with Mary Pickford, Pickford-Fairbanks Studio.
Schneiderman, George—with Fox.
Scott, Homer A.—
Seitz, John F.—with Rex Ingram, Europe.
Sharp, Henry—with Thomas H. Ince.
Short, Don—
Smith, Steve, Jr.—with Vitagraph Studio.
Steene, E. Burton—New York City.
Stumar, Charles—with Universal.
Stumar, John—with Universal.
Tollhurst, Louis H.—"Secrets of Life," Microscopic Pictures, Principal Pictures Corporation.
Totheroh, Rollie H.—with Charlie Chaplin, Chaplin Studio.
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Van Enger, Charles—with Universal.
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Whitman, Philip H.—with Famous Players-Lasky, New York City.
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Meetings of the American Society of Cinematographers are held every Monday evening. On the first and the third Monday of each month the open meeting is held; and on the second and the fourth, the meeting of the Board of Governors.

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EXECUTIVE OFFICES
1600 BROADWAY
NEW YORK

November 4th, 1924.

Mr. E. F. Boeger,
Mitchell Camera Company,
6025 Santa Monica Blvd.,
Hollywood, Calif.

My dear Mr. Boeger:

The photography of my present Warner Bros. Production
"The Bridge of Sighs" is certainly a very flattering tribute
to the Mitchell camera. My cameraman, Mr. John Mescoll, has
used the Mitchell exclusively for years and has had entire
satisfaction in every way.

Over and over again I hear comments in the projection
room, and I assure you, Mr. Boeger, they are of the very highest
praise. It may be interesting to you to learn that Mr. Ralph
Lewis, who plays a prominent role in "The Bridge of Sighs" was
photographed by me years ago when I was cameraman, and also by
my assistant director, William McEann, who was formerly a camera
man. This well known actor also states that the photography
of the present picture equals the very best he has ever seen.

Yours very truly,

Phil Rosen

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American Cinematographer

Published by the American Society of Cinematographers, Inc.



This Month



SCREENS (*Article Three*)

By Earl J. Denison

HOW THE PANDITA WAS PHOTOGRAPHED

By Herford Tynes Cowling, A. S. C.

RENE GUISSART, A. S. C., OPENS PARIS STUDIOS

PUBLISHED IN HOLLYWOOD CALIFORNIA

Releases

March 8, 1925 to April 1, 1925.

TITLE	PHOTOGRAPHED BY
The Rag Man	Frank Good, member A. S. C.
Soiled	Not credited
Too Much Youth	Roland Price
The Mansion of Aching Hearts	Harry Perry, member A. S. C.
New Lives For Old	L. Guy Wilky, member A. S. C.
Daddy's Gone A-Hunting	Chester Lyons
One Year to Live	Arthur L. Todd
The Re-Creation of Brian Kent	Glen MacWilliams
Salome of the Tenements	Al Ligouri and D. W. Gobett
The Saddle Hawk	Virgil Miller
Parisian Nights	Ernest Haller, member A. S. C.
The Star Dust Trail	Jos. Valentine
Riders of the Purple Sage	Dan Clark, member A. S. C.
Too Many Kisses	Hal Rosson
Lady of the Night	Andre Barlatier
Introduce Me	Paul Perry, member A. S. C. and Jack MacKenzie
Heart of a Siren	R. J. Bergquist
The Swan	Alvin Wyckoff
Love's Bargain	Bert Cann
Dangerous Innocence	Merrit Gerstad and Richard Fryer
On Thin Ice	Byron Haskins
Midnight Molly	Silvano Balboni
Champion of Lost Causes	Ernest Palmer, member A. S. C.
The Boomerang	Jos. Goodrich
Sally	T. D. McCord, member A. S. C.
The Denial	Ben Reynolds
A Cafe in Cairo	Sol Polito, member A. S. C.
The Goose Hangs High	Karl Brown, member A. S. C.
Gold and the Girl	Allen Davey
The Dressmaker from Paris	Bert Glennon, member A. S. C.
Head Winds	John Stumar, member A. S. C.
Seven Chances	Elgin Lessley and Byron Houck.
Confessions of a Queen	Percy Hilburn
The Mirage	Henry Sharp, member A. S. C.
Contraband	Al Siegler
Bad Company	Walter Arthur and Marcel Le Picard
The Broadway Butterfly	Ray June
The Air Mail	Alfred Gilks, member A. S. C.
One Way Street	Arthur Edeson, member A. S. C.
The Hunted Woman	Joe August
The Boomerang	Jos. Goodrich
Sally	T. D. McCord, member A. S. C.
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American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

Board of Editors—VICTOR MILNER, H. LYMAN BROENING, KARL BROWN, PHILIP H. WHITMAN

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Screens

Article Three

By Earl J. Denison

Selection and Maintenance
of Screens of Utmost Importance
to Every Theatre

The last step in the efficient projection of a satisfactory picture is the selection of a screen which will most effectively direct the light to the audience so that the images formed there may be seen from every seat without effort or eye strain. It is important that the screen have a high reflection factor, but it is more important that it reflect a maximum part of the light back within the solid angle in which are included all of the seats, and that the light be so distributed within this angle that the screen will appear equally illuminated from all of the seats. In the wide theatres the outer seats *in front* often make an angle of 50 degrees with a normal to the screen. In the narrow theatres the angle is sometimes as low as 20 degrees.

Distribution of Light

The distribution of light can be controlled by choice of material, its finish, texture and configuration. There are quite a number of good makes of screens on the market today and several of the widely used makes can be obtained in different materials, textures, and finishes; and there should be no trouble in getting the proper screen for any theatre. Without writing a lengthy article and making diagrams of floor plans, etc., I think I can give you a few simple rules and instructions for selecting the proper screen and keeping it in good condition. Always bear in mind that reputable screen manufacturers, as well as manufacturers of projectors, carbons, lenses, etc., have invested large sums of money in their businesses, and are honest, reliable, hard working people. They have employed in their factories trained engineers for the purpose of developing their products to the highest standard possible. Therefore I will say that a great many problems regarding projection could be readily solved if *projectionists* and *managers* would get in direct touch with the manufacturers of the product they are using or intend to use. So if I were *selecting a new screen*, I would write direct to several makers of screen giving the following information:

Width of theatre at front row of seats;
Length of throw. Length of theatre;
State if theatre has balcony;
Angle of projection.

Size of picture desired;

After comparing merits and prices of several screens I would place my order for the screen I thought most satisfactory to my particular needs.

Solving Difficulties

If I were having trouble with a screen, or thought it was not giving maximum results, I would again write direct to the manufacturer giving the above information and also any other *data* I thought would help.

Installation

When installing a screen take great care to keep it clean and free from wrinkles. Follow the makers' instructions on how to properly install.

For Different Theatres

There are several types of theatres, and each one requires a screen different from the other. The wide house requires a screen with complete diffusing qualities, white, with a smooth surface. The house of medium width and length requires a screen of semi-diffusing qualities, metallic white with fine grain. The long manor theatre requires a screen of high reflecting qualities, medium or coarse grain, metallic white in color. Some manufacturers state their screens can be washed. Before trying to clean or wash a screen, find out from the maker just how to proceed, as it is very easy to ruin the surface of the screen if one does not understand those things. All screens should be cleaned, washed, or re-surfaced regularly. A very slight covering of dust will cut down the screen brilliancy 25 per cent. But even dusting a screen is a very particular job, and should never be left to the porter, or any person who does not understand the importance of it. The one great difficulty is to clean a screen without leaving streaks. My suggestion is: consult your local painter or paper hanger; better still, show him the screen, and explain the importance of the job.

Home-Made Screens

A great many small town theatres have home made screens, canvas painted flat white. The simple way to keep a screen of this

(Continued on Page 16)

How the Pandita Was Photographed

By Herford Tynes
Cowling,
A. S. C.

Wit in Crisis and Spirit of
Good Will Remove Film Fears
of Tibetan Holy Man's Subjects



The motion picture camera was carried in a wicker basket, with tripod on top, to be quickly unslung.

I was on my way to Leh, the capital of Western Tibet, where the much talked-of devil dances of the annual mystery play were to be held. I had made up my mind to do the impossible and make motion pictures of this fanatical festival, something that had never been accomplished before.

Odds Against Him

There was much speculation in my mind as to the success I would have in trying to photograph in such a religious ridden country. My experience with Mohamedans and Hindus might prove of considerable help; on the other hand, natives who have never seen a camera or understand what it is, are hard to handle. I had "shot the wad" in the expedition and was extremely anxious to succeed.

Everything depended on

how the Lamas received me. The Tibetians whom I had met on the way refused to be photographed. Whenever I approached their small vil-

lages the women would snatch up their children and rush into the houses. Men stood and watched at a distance. Only the Yak drivers working for me appeared unafraid.

The Pandita Approaches

On the tenth day I met a dignitary of the Lamas, called a Pandita, which is a sort of abbot of the Lamas, accompanied by about twenty Lamas and their caravan. He was making the journey to a monastery in Balistan. The people flocked to the roadway to kiss the hem of his garment or his hand; or to bow in reverence as he passed. His approach was heralded by longdrawn blasts on trumpets borne by two Lamas riding well in advance.

Testing the Lamas

I stopped and held conference with my Tibetan interpreter and sole English speak-



Rigzen did his work well—and blocked the trail!



Left: The Pandita—a most holy man, a very high ranking member of the order of Lama monks—a sort of abbot.

Above: The Pandita poses with a few of his trusted Lama followers.

ing companion. Here was our opportunity, I thought. Let's make a test to find if there was any religious objection to being photographed on the part of the Lamas. It would be a good time to find out and a good precedent to set, if successful.

Refusal Means Failure

But, supposing he refused; my work in Tibet would be different.

The Holy Caravan

The trumpeters appeared along the trail ahead of me. A cloud of dust thrown up by the devotees marked the spot where the Pandita rode on a small pony. The trail was narrow and only one caravan could pass at one time. One of us must get off the trail. I quickly dispatched Rigzen to order my caravan off, at the same time to give them strict instructions to see that

their trail was intentionally blocked by some means or other.

News Speed in Tibet

I dismounted and began to set up the moving picture camera which had been quickly slung from my pony by one of the trained Kashmiri servants. By the time the Lama dignitary reached me I was off the trail with most of my outfit and ready to "shoot."

A screen of dust had completely enveloped us all, and in the melee one of my packs had come off a pony right in the trail completely blocking progress. Rigzen had done his work well, and appeared for further orders. He was to approach the Lama, and extend my salutation. I followed behind and, on an order from the Lama, the crowd fell back and cleared away.

The Pandita Consents to Pose

It was then that he saw me for the first time. I was decked in a broad brimmed cow-boy sombrero, and I am sure that he had never seen anyone dressed as I was then. No doubt it afforded him considerable amusement for he dismounted with much difficulty and the assistance of several monks, on account of the many silken robes he was wearing, and accepted my offered hand. After listening to Rigzen's request to be photographed he readily consented and posed with other Lamas for all the pictures I wanted.

Fortune Changes

From that moment I did not have the least bit of trouble photographing any men or women along the way, as

(Continued on Page 15)

A. S. C. Member's Letters on "Lost World" Credits

Matter of Accrediting Cinematographers on Big Production Is Taken Up.



As an individual cinematographer, Gilbert Warrenton, A. S. C., sent the letters appended hereto relative to the matter of credit to cinematographers on the First National production, "The Lost World." Indicative of the importance of the situation about which Mr. Warrenton writes, the Board of Governors of the American Society of Cinematographers, at its meeting held Monday, March 30th, went on record as endorsing the stand taken by Mr. Warrenton in his communications. Mr. Warrenton's letters follow:

March 20, 1925.

Mr. Robert E. Welsh, Editor,
Moving Picture World,
516 Fifth Avenue,
New York, N. Y.

Dear Sir:

In your issue of February 14th you include, together with other material on "The Lost World," a page of photographs with the caption, "Credit where credit is due," and at the bottom of the page the caption continues, "Here they are—the folks chiefly responsible for the new contribution to screen history . . . the only photograph missing is that of Willis H. O'Brien, research and technical director, inventor of the marvelous effects seen in 'The Lost World.'"

As an individual cinematographer, let me call your attention to the fact that if it is your intention to give "credit where credit is due," there is something much more than only one photograph missing.

To us here on the west coast (and we thought the fact was well recognized by everyone familiar with picture production) "The Lost World," of all pictures ever made, is pre-eminently a "photographic production." It demanded the highest development in cinematography, and to meet those great demands it required the best men in their respective cinematographic lines. Without the abilities of these men the reproduction, for the public, of the marvelous effects you have witnessed, would have been a sheer impossibility.

It is my opinion that these men should be included in anything and everything that sincerely aims to "give credit where credit is

Warrenton's Stand in Important Matter Indorsed Officially by A. S. C.

due" in connection with "The Lost World," if not in justice to these artists, then in justice to the cinematographic profession itself.

The cinematographers of whom I speak—the men who photographed and made possible this production are Fred W. Jackman, Arthur Edeson, Homer Scott and J. D. Jennings.

If the First National thought enough of the cinematographic necessities in "The Lost World" to induce Fred Jackman to temporarily leave the field of directors, in which he is a recognized success, then surely his achievements in that production, together with those of his colleagues, are entitled to be recognized wherever recognition is purported to be given in relation to the Doyle vehicle.

Sincerely,

(Signed) Gilbert Warrenton.

March 20, 1925.

Mr. Richard A. Rowland, General Mgr.,
First National Productions,
323 Madison Avenue,
New York, N. Y.

My dear Mr. Rowland:

The enclosed carbon copy will be self-explanatory. I feel certain that your sense of justice would have corrected these errors in giving credit as it is due. Mr. Jackman, who is a recognized factor in the field of directors, is spoken of as chief technician in some of your advertising. This title sounds like a great A-1 carpenter or something of the sort and hardly suitable to the man who materialized the illusions which are creating such favorable comment.

Feeling sure that your sense of justice will take care of this matter now that it is called to your attention, I am

GW:S

Very sincerely,

1 Encl.

(Signed) Gilbert Warrenton.

March 20, 1925.

Mr. Edwin Schallert, Drama Editor,
Los Angeles Times,
Los Angeles, Calif.

Dear Sir:

After reading your article in the "Preview" of the date of Feb. 25th, I am in a quandry to

(Continued on Page 16)

Richardson Handbooks
on Moving Picture
Projection
Richardson American
Baedekere

F. H. Richardson

Author  Writer
Sixth Floor
516 Fifth Avenue, New York City

Short Stories
Serials
Moving Picture Projection 



Editor American Cinematographer
Bollywood Calif.

January 30

My Dear Mr Goss:-

It is NOT pleasant to have to write as per attached scribbon. However, there is really such a thing as just ordinary courtesy. You propose entering a field which has been prepared for you by long, weary YEARS of BATTLE, and you start out by just plain ignoring every one and everything connected with that battle, making the announcement, in effect, that the American Cinematographer has made a virgin discovery and is a pioneer in the field.

By that act you have stirred up antagonism, instead of receiving a warm hand of friendship.

As to Mr. Dennison--he is able and efficient in the field in which he has worked--as an editor--well, we will see. Personally my view is that Mr. Dennison is neither cut out to be, or has the training necessary to become successful in the editorial field. I shall, however, be very agreeably surprised if my

diagnosis proves to be wrong. My own experience is that one really good, efficient book or department helps another, and there certainly is plenty of room in the field.

I wish you every success, PROVIDED you change your attitude, as per your first totally-ignore-everybody-and-everything first announcement. It is, however, to be remarked that your paper has never, in the past, lent one particle of encouragement or help, or taken any manner of visible interest in either the Projection Department or the American Projectionist, to say nothing of those many others who have sprang up, ALWAYS WITH ESSENTIALLY THE SAME ATTITUDE I HAVE CRIBICISED IN YOU, and have dwindled away and fallen by the wayside. The reason for this is simple: There are exceedingly few men, no matter how thoroughly competent in their practical and technical knowledge, who are able to successfully meet the problems of conducting a successful projection department.

I personally very much doubt if you even lightly sense what these difficulties consist of. Well, anyhow I welcome both your paper and Mr. Dennison, if you prove worthy of welcome, which both Brother Edwards and myself heartily agree your first tooting of horns don't seem to indicate.

NR

Very truly yours.

F. H. Richardson

This has laid on my desk a month, I guess I will send it, because the work is needed, deserved however the article ^{for subscription} has tons up. The thing is worth the letter already written, but not worth MW's time.

The letter reproduced herewith was sent to the editor of the American Cinematographer by Mr. F. H. Richardson, projection editor, and, according to the modest admissions on his letterhead, "author, writer, Richardson's Handbooks on Moving Picture Projection, Richardson's American Baedekers, Short Stories, Serials, Moving Picture Projection" — or what have you?

For the first complete and authentic interpretation received of the highly legible postscript on Mr. Richardson's letter, there will be presented to the sender a year's subscription to the Moving Picture World, in which Mr. Richardson's World-famous projection department appears.



The Oracle of Projection Castigates Us

¶ Here Is Mr. Richardson's Story as He Originally Wrote It and Sent It to the Editor of this Publication with His Letter of January 30th.

(The ensuing gem of editorial demagoguism comes from the fertile brain of Mr. F. H. Richardson, world-famous projection editor. As an example of that courtesy, that Mr. Richardson complains we do not possess, we are opening our columns for Mr. Mr. Richardson to say in full about us, in his partially published story, those things which he originally intended to say in full about us in his own publication.)

Out of respect for Mr. Richardson's success as an editor, as which unlike Mr. Denison, he may be "cut out to be, or has the training necessary to become successful in the editorial field," we are not attempting to edit Mr. Richardson's copy as we would be obliged to do in case of some one not so famous as he—no, we are running his story, "as is," even to the extent of the "9 em dash" at the end.—EDITOR'S NOTE).

Another Moses

By F. H. Richardson

Once more, and for about the fiftieth time, a Moses hath arisen and, with tremendous toot of its own horn, announces, in effect, that it will proceed forthwith to lead the Children of Projection out of the wilderness in which they have been stumbling around, presumably without any manner of leader at all, for lo these many years.

This time it is a paper with a French name, the "American Cinematographer," published in the interest of the motion picture photographer, which is to do this wonderful thing.

This department welcomed the American Projectionist into the field, because it entered the field decently and rightly, and is a publication of and for projectionists. It would welcome the American Cinematographer also did it come courteously and decently. But it enters with a several page announcement in which there is not one word indicative of recognition of all the tremendous amount of work which has been carried forward for many years by this department, nor a single word of recognition of the American Projectionist, or any other agency.

Gets My Goat

What gets my goat in this matter, and the whole reason for this article, is the fact that this french-named paper to all intents and purposes tell us that it and it alone has just

(Continued in Col. 1, Page 10)

¶ Here Is the Same Story as It Finally Found Its Way into Mr. Richardson's Projection Department under Date of April Fourth.

(Following is the story as it eventually appeared in the projection department of Mr. F. H. Richardson, world-famous projection editor. Mr. Richardson's staunch consistency may be appreciated when it is noted that he wrote the original story for his own publication; then it lay (not laid, Mr. Richardson) on his desk for a month, and then, according to the postscript of his letter of January 30th he changed his mind and tore the article up, but, to climax the affair, ran a deleted version of the story he stated that he had torn up, in his issue of April 4th. It is interesting also to note that the story as finally published refrains from referring to the American Cinematographer by name.—EDITOR'S NOTE).

Another Moses

By F. H. Richardson

Another Moses hath arisen, blown a two-page blare from his trumpet, and announced that he will forthwith proceed to take the poor, misguided, down-trodden, over-worked, under-paid and generally abused chap who projects motion pictures by the hand, and guide his faltering footsteps onward and upward to bigger and better things.

It is really amusing how often this particular stunt has been pulled—and how often the announced - with - a - blare - of - its - own - horn guide has utterly failed to find the path to those bigger and better things, sooner or later (usually sooner) relinquishing (WITHOUT any blaring of trumpets) his self-imposed guiding job.

This time it is a "cinematographers" journal which hath, according to its announcement, made the virgin discovery that the projection of motion pictures really is of importance, and ought to receive some attention from somebody, and, by right of this original discovery, it itself proposes to be that "somebody."

This paper with a French name is in its fifth year. From its announcement it is very evident that it has absolutely no knowledge that any other agency has ever did one single thing for projection. Certainly in all its five years of life IT has done nothing, but in fu-

(Turn the Page)

ture—oh bhoy! It is published regularly once month. Oh well, in the language of the poet: "Wot th' 'Eil!"

Another Moses

(Continued from Col. 1, Page 9)

made the wonderful discovery that the work of the projectionist and the work of the motion picture photographer is closely connected and that the cinematographer and the actors and every one else must depend upon the motion picture projectionist as to whither their "art" will appear as such, or as a ridiculous travesty on art.

This department has been telling that fact to all and sundry, including the Cinematographer, for lo these MANY YEARS, and the American Projectionist has not been at all silent, but this Moses must have been very sound asleep because in all that time neither this department or the American Projectionist has had one iota of help, encouragement or aid from either the cinematographer or his mouthpiece.

But now—well, by golly it's lucky this projection Moses waked up because otherwise there is no telling into what depths of despair we might have wondered.

And now that all that is out of my system, always provided the Cinematographer clambers down off his elevated steed, hits the earth and is willing to CO-OPERATE with those agencies which were in the field, fighting the BATTLES of the projectionist and projection years before the American Cinematographer was even thought of, and other years before it grabbed this marvelous new idea of helping projection and the projectionist, this department will welcome it into the field and be quite willing to work with it.

There is ample and abundant room for all when this department is unable to hold its own and keep a few laps ahead it will conclude its usefulness has ceased and its editor or will turn to other fields of human endeavor.

I venture the assertion, however, that Mr. Dennison, who will edit this new effort will discover that editing a successful projection department and succeeding in the work he now is doing, and doing very well, are two entirely separate and distinct propositions.

9 em dash

Projectionist and Cinematographer

By F. H. Richardson

(Mr. Richardson says that that the American Cinematographer was sound asleep, as to the common ground of interest between the projectionist and the cinematographer, until this journal opened its projection department. An inspection of the files of the American Cinematographer will prove such a statement to be an untruth. As an illuminating example of the fact that the pages of this magazine have not in the past been silent on the relationship between the cinematographer and the projectionist, there is re-printed herewith a story by Mr. F. H. Richardson himself—a story which appeared on page 15 of the September, 1922, issue, and continued on page 24 of the same issue. But, according to Mr. Richardson's abiding respect for the truth, the American Cinematographer "and it alone has just made the wonderful discovery that the work of the projectionist and the work of the motion picture photographer is closely connected."—EDITOR'S NOTE).

I wonder how many cameramen, who have a just pride in the really magnificent work they are "father" to, understand and know that insofar as concerns the final buyer of their product, the motion picture theater patron—the public—the excellence of the product is entirely in the hands of and at the mercy of the projectionist.

Does the average cameraman ever stop to consider that no matter how sharp his "focus" may be, it will be something less than sharp if the conditions of projection be not right?

Does he appreciate the fact that the work of the splendid lens he uses, and the effect of great "depth" he has worked so carefully to secure, will all go awry if the projectionist is careless or does not understand his business?

Projectionist Is Important

Does the average cameraman have the slightest appreciation or understanding of the emasculation his work is subjected to when placed in the hands of an incompetent projectionist, or a projectionist who is careless? I think not; hence, it has occurred to me that attention should be directed to the

(Continued on Page 17)

The "French-named paper"

As another example of the genius which possibly made him "cut out to be, or has the training necessary to become successful in the editorial field," Mr. F. H. Richardson seeks to identify the American Cinematographer as the "paper with a French name" or as the "French-named paper," etc.

If Mr. Richardson would have us believe that American is French, then we might well rest our case right there. But giving him the benefit of the doubt—maybe he means that Cinematographer is French or of French origin.

But Mr. Richardson can no more justify himself in calling Cinematographer French, than he can in calling American French.

For your information, Mr. Richardson, consult the Greek *grapho*, write and *kinema*, *kinematos*, *kineo*, movement, motion, move. Consult those words, Mr. Richardson, and you will know, in your all-consuming editorial wisdom, that if you must brand Cinematographer as being anything, it at least will not be French.

The "French-named paper."

Wrong again, Mr. Richardson.

The Truth and Mr. Richardson's Representations

F. H. Richardson's Blustering Mis-statements Are Exposed to Light of Fact.

By Foster Goss

Swashbuckling Flourishes and Demagogic Tactics Are Dealt with Pointedly.

Because Mr. Richardson's assertions are so far from the truth, and because they are so remote from fact, this publication is dealing with them directly and pointedly.

In his letter to the editor of this publication and in his copy of his partially published story, which for some unexplained reason did not find its way as originally written into the columns of his department, Mr. Richardson accuses *American Cinematographer*, that, in its announcement of its new projection department, it represented itself as having made a "virgin discovery," as being a "pioneer in the field," and as having "just made the wonderful discovery that the work of the projectionist and the work of the motion picture photographer is closely connected," etc. If Mr. Richardson will definitely show us where we have even approached such a statement in the announcement of which he complains, then we will show him where he is a deliberate distorter of facts.

The very issue, which Mr. Richardson sets out to lampoon, among other things, in his clumsy way, states for instance (on page 11, January, 1925): "this journal, in common with cinematographers as a whole, has always realized the importance of the projectionist. He is one of the strongest—one of the most decisive—links in the whole great chain of the picture that begins with the camera and ends on the screen."

And then you say, Mr. Richardson, in paragraph one of your letter to the editor of the *American Cinematographer*, and in the fourth paragraph of your partially published story, that we were, to quote you in your very own words, "making the announcement, in effect, that the American Cinematographer has made a virgin discovery and is a pioneer in the field." Can it be that you don't read correctly, Mr. Richardson, or is it that you just don't have any respect for facts?

But this publication does not have to rely on the statements in its January issue of this year that it has long recognized the importance of the projectionist. As far back, (or as recently, as Mr. Richardson chooses to call it), as September 1922, within a few months after it had been made into a nation-

al monthly, this journal not only went squarely on record concerning its recognition of the importance of the projectionist, but even went to the extent of permitting Mr. F. H. Richardson, the oracle of all projection matters, to use the columns of the *American Cinematographer* to tell just how important the projectionist was. To refresh your memory, Mr. Richardson, you may remember that a story, "Projectionist and Cinematographer," by your own august self, began on page 15, of the September 1922 issue, and continued on page 24. Also, you may remember, if you do not find it too embarrassing, editorial comment, appearing on page 11 in the editorial department of the same issue (Sept., 1922) on the callings of the projectionist and the cinematographer being complementary and further comment on your own story which was published in that number.

How can you, then, Mr. Richardson, have the effrontery to make the misrepresentation that this publication, specifically or generally, is setting itself up as having, to quote you again, "made a virgin discovery" and "that it and it alone has just made the wonderful discovery that the work of the projectionist and the work of the motion picture photographer is closely connected."

How can you, Mr. Richardson, have the audacity to state, as you do in the fifth paragraph of your partially published story, that this publication "must have been very sound asleep because in all that time" it has not given yours or other departments "one iota of help, encouragement or aid from either the cinematographer or his mouthpiece." If it had been that the story and comment in question which appeared in these columns as far back as 1922 had been written by some one else, then we might even offer some excuse for your misleading statements—but the fact remains that you wrote the story yourself and that it duly appeared within the pages of this magazine.

Can you answer the foregoing and not try to excuse yourself as not recognizing facts? Can you do it, Mr. Richardson, without tak-

(Continued on Page 15)



H. Lyman Broening, A. S. C., has finished the filming of "American Pluck," an I. E. Chadwick production, featuring George Walsh and directed by Richard Stanton.

* * *

E. B. Du Par, A. S. C., has a penchant for Truckee, Calif., it appears. After finishing five weeks at the celebrated location, for Warner Bros., the A. S. C. member returned to the land of deep snows to film "Ship of Souls," a Stereoscopic production based on the story by Emerson Hough. Charles Miller is directing, and the cast includes Bert Lytell, Cyril Chadwick, Russell Simpson and Lillian Rich.

* * *

Ernest Palmer, A. S. C., is photographing "East Lynne," a William Fox feature directed by Emmett Flynn. Edmund Lowe and Alma Rubens have the leading roles.

* * *

Dan Clark, A. S. C., is not in the throes of filming a Tom Mix feature, for the first time in many seasons. The reason is that Dan's star has left Hollywood on an extended vacation tour.

* * *

Gilbert Warrenton, A. S. C., is photographing the latest Edward Mortimer production for William Fox.

* * *

Reginald Lyons, A. S. C., has just returned from a desert location between Cajon and Victorville where he worked with David Kesson, cinematographer for Marshall Neilan, on Neilan's current production for Metro-Goldwyn.

* * *

Georges Benoit, A. S. C., has finished the filming of "Heaven On Earth," a Hunt Stromberg production directed by Tom Forman. The cast includes Marguerite de la Motte, John Bowers, William V. Mong and Charles Gerard. Mong has a dual role in the production, all of which makes things very interesting for George; however, such affairs are mere trifles in George's young life, as witness "The Masquerader," etc.

T. D. McCord, A. S. C., is photographing "The Desert Flower," a First National production starring Colleen Moore. Lloyd Hughes has the lead.

* * *

George Schneiderman, A. S. C., is at outs with everything equine these days. George had just finished the filming of a Fox production when Emmett Flynn suggested that the A. S. C. member accompany him on what was to be in the nature of a vacation trip to the Feather river district.

The trip, however, materialized a camera for George, and, one morning, without the aid of an assistant, the A. S. C. member set out on a fifteen mile tramp with a camera on his back. Finally, a very precipitous bank on a mountain torrent was reached. It was here that the jump of a horse from a cliff into the stream was to be filmed.

A very narrow ledge offered a very good angle. Accordingly, George crooked his knees and tip-toed himself into a stance on the ledge, the vast majority of its narrowness having been utilized for the three legs of the tripod.

The horse made his jump but the water was rough. He chose to swim out of the torrent immediately, and, for his exit, selected the ledge on the edge of which George was perched. The horse was very positive in his attempt to attain the end he had in mind and in a twinkling was parking his front legs on the scarcity of rock on which were already quartered two cinematographic legs and three tripod legs.

It was too much for George. It was endangering his camera which he could not pick up and hustle away for the reason that the horse would have gained the rock before he could make his escape—which no doubt would have been with the camera into the river.

So George elected to kick the horse on the shins.

This he did, effectively, holding to his camera until the remainder of the company effected a rescue.

Rene Guissart Opens Paris Studios

Rene Guissart, A. S. C., has left for Paris, France, where he has established headquarters for a motion picture production service that is an innovation in production matters. Guissart's service will make it possible to match the photography in an American-made production with any scenes desired in the way of an European background.

Personally in Charge

Through the use of suitable photographs for a guide and specifications as to any costuming, etc., Guissart will be able to provide required scenes against any designated British or continental background. The A. S. C. member will personally take the scenes as ordered, and all details will be under his personal supervision.

Big Orders

Before sailing for France, Guissart already had acquired substantial orders from some of the largest producing companies for assignments to be executed immediately on his arrival in Paris. This material to be provided by Guissart is to be incorporated in forthcoming feature productions.

European Experience

This is believed to be the first time that a complete service of this sort has ever been offered, or that it is to be handled by one experienced in both European and American production affairs, as the A. S. C. member is. Guissart knows European customs and cinematographic channels completely by virtue of the long time he spent film-



A. S. C. Member Establishes
Headquarters for European
Cinematographic Production



RENE GUISSART, A. S. C.

ing important productions in England and on the Continent. In this country he has been an ace cinematographer with various of the largest studios and most prominent directors, among the latter being D. W. Griffith, Allan Dwan and Maurice Tourneur.

Knows Continent

In Europe, Guissart filmed some of the biggest productions to come across the Atlantic in recent years. He was chief cinematographer for "Chu Chin Chow," which was filmed in Berlin by Graham-Wilcox, whose production headquarters are in London. For the same organization he photographed numerous other features in London, among them being those which starred Mae Marsh. He returned to the United States in 1923, but had spent scarcely a fortnight in Hollywood when a very attractive offer took him back across the Atlantic to Paris and then to

Monte Carlo where he filmed J. Parker Read's production of "Recoil," starring Betty Blythe and directed by T. Hayes Hunter. He again returned to Hollywood and had been there only a short time when he went to Italy with Technicolor to work on "Ben Hur." Subsequently, after Fred Niblo became director of the feature, Guissart was retained as chief cinematographer on the production. The A. S. C. member returned to Hollywood with the "Ben Hur" company and found that an experience such as was his in European cinematographic affairs was at a premium, and the plans for his unusual studio in Paris, with channels reaching to all continental and British centers, were consequently formulated.

Before his departure to make his permanent headquarters in Paris, Guissart was appointed European representative of the *American Cinematographer*.

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THE TRUTH AND MR. RICHARDSON'S REPRESENTATIONS

(Continued from Page 11)

ing refuge behind a shield of profuse excuses? Can you?

Mr. Richardson is not content with misinterpreting the purpose of this publication. He queries the fitness of Earl J. Denison, the very able man who has been chosen to head the projection department of the *American Cinematographer*, for the post in question. Why Mr. Richardson should do this, is beyond a thorough understanding of editorial ethics in which the oracle of the projection world professes to be so well versed. We maintain that, most of all, the chief requisite for the head of a projection department is a masterful and thorough, (and that does not mean noisy) knowledge of projection.

We cannot see how Mr. Richardson can logically contend as, for instance, he attempts to in the third paragraph of his letter to the editor of this publication, that a man cannot be the successful head of a projection department unless he is "cut out to be, or has the training necessary to become successful in the editorial field." If Mr. Richardson would have us believe that his greatness depends on editorial genius, then it is our opinion, to use his own words, in the next to last paragraph of his partially published story, that he long since might well have turned "to other fields of human endeavor."

A droll conception of editorial ethics indeed does Mr. Richardson reveal in the third paragraph of his partially published story in which, in a flare of injured virtue, he whines because in the announcement of the projection department in this publication, "there is not one word indicative of recognition of all the tremendous amount of work which has been carried forward for many

years by this department." We won't say that the sun of the world of projection does not rise, circulate and set in the immediate vicinity of Mr. Richardson, but we will say that he has a very peculiar idea of editorial customs if he had or has any hopes of our apologizing, (and his highly fanciful concept of the "recognition" due him would be nothing more,) to him for endeavoring to bring the callings of projectionist and cinematographer closer.

The fact remains that despite Mr. Richardson's "weary years of battle" (yes, weary and boresome), despite "all the tremendous amount of work which has been carried forward for many years" by Mr. Richardson's department, despite the fact that Mr. Richardson's "department has been telling" the fact that the callings of projectionist and cinematographer are closely connected "to all and sundry, including the cinematographer, for lo these many years,"—the fact remains that projectionist and cinematographer have not at all arrived at that stage where they are actually working close together; and it is toward bringing about this stage, even though the greatest of all geniuses with all his weary years and tremendous amount of work has failed so to do, that the *American Cinematographer* is bending its efforts.

We will stipulate that misery always company, but we cannot see why Mr. Richardson should want to draw the American Projectionist into his tantrum against us. In those copies of the *American Projectionist* we have had the privilege to read, we have seen nothing to which we could take exception; and we surely have respect enough for the *American Projectionist* that it has sufficient independence not to be taken into Mr. Richardson's churlish, if not childish, tirade against us.

HOW THE PANDITA WAS PHOTOGRAPHED

(Continued from page 6)

word appears to have been passed that I had permission from a high Lama himself to photograph.

This appeared to be sufficient, and was my first

triumph, which paid good dividends along the way. Shelter was offered me by his holiness at any of the Lamaseries. Having been photographed in several different poses, he mounted his pony and passed on, saying that he had six weeks journey over

the mountains before him. As far as I could see the crowds of villagers were still following in his wake to get a view of the holy man.

And that's how his holiness was photographed, and, by his grace, opened the Tibetans' photographic door for me.

"LOST WORLD" CREDITS

(Continued from page 7)

know whether you are cognizant of the fact that the man, who is most directly responsible for the success in the production of "The Lost World" and its animal features, has been entirely ignored in your publication. It seems to me that there are so few exceptional pictures that come out that you must have not been conscious of this omission, for the reason that your recognition of a cinematographer's efforts in a vehicle of this sort means not only the consummation of the hopes of the individual, but necessarily reflects credit to our profession as a whole as well as creating an incentive for even greater efforts. Rather than make this letter any longer, I am enclosing a carbon copy of a letter, which I am sending the Moving Picture World on the same subject and which is self-explanatory.

Hoping that you will have the opportunity to use this information on any future material in connection with "The Lost World," I am
 GW:S Very sincerely,
 1 Encl. (Signed) Gilbert Warrenton.

P. A. McGuire Praises Work of A. S. C. in Advertisements

Commenting on a set of advertisements which give credit to this publication and to the American Society of Cinematographers in the regular advertising of the Nicholas Power Company, P. A. McGuire, well-known advertising manager of that institution, in a letter to the editor of the AMERICAN CINEMATOGRAPHER, drives home the importance of a close relationship between the professions of the projectionist and the cinematographer. Mr. McGuire's letter follows:

"Dear Mr. Goss:

"Enclosed you will find proof of our advertisement which will appear in the Moving Picture World and Motion Picture News, issue of February 7th. We hope that you will like this advertisement as it has long been our desire to publicly express our approval of the work you and your organization are doing.

"The various departments of the motion picture industry are dependent upon each other and the conscientious and competent cinematographer cannot afford to be indifferent to projection. Good projection may not

be the direct concern of the cinematographer but after all screen presentation constitutes the final delivery of his work to the public. Art for Art's sake may be all right but in the final analysis all work requires public approval and if the picture is poorly projected the work of the cinematographer suffers.

"The motion picture projector is no longer a mere mechanical contrivance cranked by hand or made to operate by the simple pushing of a button. The projectionist of today should have an excellent knowledge of mechanics, electricity and optics and is in charge of a delicate and complicated mechanism made with scientific accuracy to handle a fragile and inflammable material. He has a great responsibility—for failure to measure up to the right standards means that all that the producer, director, actor and cinematographer have striven for loses much of its artistic and commercial value, the pleasure of the audience is lessened, the exhibitor is subject to constant and unnecessary expense and lives and property endangered.

"It has been my good fortune to include a large number of progressive projectionists among my friends and I am particularly well acquainted with the members of the American Projection Society which has done much to promote better projection. Here in the east it is not so convenient to meet cinematographers but I hope that the advertisement and this letter will make you and your organization realize how much projectionists and equipment manufacturers value your good will and co-operation.

"Yours very truly,

"P. A. McGuire

"Advertising Manager,

"Nicholas Power Company, Inc."

SCREENS

(Continued from page 4)

kind in good condition is to repaint it, each coat stippled to guard against glare spots. I know that several of the largest theatres in the United States have corrected projection problems of long standing, and greatly improved their projection, by installing the proper screen. It will pay every projectionist to find out if he is using the proper screen. Your screen is your stage and if you have the wrong kind of screen or it is in bad condition, you are working under a big handicap, and it will be impossible for you to obtain a high standard of projection.

WE LEARNED TO PRINT
BEFORE WE COULD WRITE
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DEVELOPING
HAS EARNED THE RESPECT OF THE
ENTIRE INDUSTRY —
HONESTLY!
ROTHACKER ALLER LABORATORIES
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PROJECTIONIST AND CINEMATOGRAPHER

(Continued from Page 10)

fact that the cameraman and the projectionist link inseparably together.

We will assume that every cameraman is deeply interested in seeing his work placed before the public in a way which will bring out and emphasize its excellence. We often see the name of the cameraman blazoned forth on the screen, followed by work which makes the unknowing one wonder why he permitted it to be used. The picture is "fuzzy," lacks detail and is "flat." The critical comment of the average man in the audience is "rotten photography." The knowing one assigns the fault where it probably belongs, though even he cannot be sure it is all due to projection faults.

Some Beyond Projectionist's Control

Seeming lack of sharpness may be due to many causes, some of which beyond the control of the projectionist. Poor or unsuitable projection lenses; an unsuitable condenser, and a "boss" refusing to purchase suitable lenses; a projector optical train not properly adjusted; a projection room so far removed from the screen that the projectionist has not a sharp view thereof, or the view of the projectionist hindered by faults in theater construction, as sometimes happens; and soiled lenses are some of them. A wrongly adjusted revolving shutter or a shutter with a too narrow master blade, so that there is faint travel ghost, is another.

I could use up a lot of space in explaining the reasons why a picture with splendid "depth" is made to appear "flat" by wrong methods in projection; what various faults in projection practice operate to greatly injure or utterly ruin the beauty of the work of the cameraman, but of what avail?

Efficient Reproduction Needed

The purpose of this article is to call the attention of cameramen to the fact that if their work is to be placed before audiences at 100 per cent value, then there must be men of real ability and brains in the exhibitors' projection rooms. Cinematographers must come to a realization that unless their work be handled with a high degree of skill—by men of real

knowledge and ability in its reproduction on the theater screen, it will inevitably suffer, and suffer in proportion to the lack of skill in projection.

It is high time that producers, directors, artists, cameramen and every one concerned came to a realization that it is something worse than mere foolishness to expend huge sums of money and tremendous effort in the perfection of a photoplay and then to turn it over for reproduction before the ultimate buyer, the public, (it often happens) a man of very slight knowledge and skill, who has neither pride nor ambition to place the production before the audience in the most artistic possible way.

Lack of Interest

Up to this time it is an almost incomprehensible fact that the producer does not seem to take even the very least interest in how his production is reproduced upon the screen, though none but the fool would or will dispute that this item has very much to do with its success with the audience.

Protests Are Rare

I have never in all my experience heard of a director protesting at the literal emasculation of his work in its reproduction before the public. I have never, in all the years, heard a single star uttering a protest at the fact that he or she is literally made ridiculous before audiences by wrong tempo in projection, or because he or she is literally blotted out, perhaps at the middle of the most intensely interesting point of the whole play, by shadows caused by ignorance or plain carelessness on the part of the projectionist. Did you, yourself, ever hear of anything of the sort in any of the thousands of "interviews" with stars published? Or did you ever hear of a cameraman uttering protest at the butchery of all the splendid work he put into the films at the cost of great effort and almost endless care. DID YOU?

Since the success of a production depends so greatly on the manner in which the projectionist handles it, then it is only plausible that the cinematographer, the star, the director, or whoever is interested in the production should in turn be interested in the projectionist. If he is an able man, their work will show to best advantage. If he is not efficient, it will appear otherwise. Don't neglect consideration of the projectionist—your success or failure may depend, to a great degree, on him.

Report of S. M. P. E. Progress Committee



Exhaustive Resume of Contributions to Film Science from All Parts of the World

The past year in the motion picture industry has been characterized more by improvements in processes and equipments previously available rather than by outstanding new development in the art. The advantages of standardization in other older industries are familiar to most of us; our own Society has through its active committees made excellent progress, not only in this country but by establishing relations with Europeans interested in similar work. In Germany special effort toward the standardization of sprockets has been made, the Kinotechnische Gesellschaft functioning in a manner generally similar to our own Standards Committee and the English Committee on Standard Measurements.

Interest in the radio transmission of motion pictures has been accelerated by the commercial sending of still pictures by wire; at least one of our members is very active in the development of the former. The reproduction of the voice and music in synchronism with motion pictures of short lengths has been presented commercially during the past year, and a complete picture with twenty people in the cast is now being produced.²

As indicative of the growing appreciation of art in motion picture photography the 1923 Exhibition of the Royal Photographic Society contained a new section on cinematography.³ An increasing use of motion pictures for the edification of employees on methods for safety is noted in this country;⁴ the interest of practically all classes of people is ob-

tained by combining these pictures with other forms of entertainment. Portable projectors enable them to be shown before groups which otherwise could not be reached.

In the preparation of this report your committee has utilized published information appearing in technical and trade publications and the monthly Abstract Bulletin of the Eastman Kodak Company, as the principal sources of the material. Some items have been included appearing outside of the calendar year, which had not previously come to the committee's attention. Information from other sources is most welcome, and if sent to the committee will assist materially in making our report complete and valuable as a source of reference.

Respectfully submitted,

C. E. EGELER, Chairman,
J. I. CRABTREE,
ROWLAND ROGERS,
P. R. BASSETT,
J. A. BALL,
WM. T. BRAUN.

Cameras

A high speed camera has been built in England which has a variation in speed of from 500 to 5,000 pictures per second. The camera consists of a large drum about six feet in

¹ Kinotechnik, Oct. 1922, p. 719.

² Motion Picture News, Apr. 26, 1924, p. 1928.

³ British Journal of Photography, Sept. 21 and 28, 1923, pp. 518, 601.

⁴ Visual Education, April 1923, p. 108.

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Two Bell and Howell Cameras, 40, 50, 75 mm. lenses, Thalhammer iris. Jean Trebaol, Jr., 7042 Stilson Street, Palms, Calif. Telephone 761-243.

diameter and weighing approximately 1,000 pounds around which a single closed loop of film, 288 pictures in length, is wrapped. An 8 hp. motor is required to drive the mechanism. The optical system consists of a ring of 40 matched lenses mounted in a rotating disc which is geared to the drum so that film and lenses pass the aperture at the same speed.

The drum is of sufficient width to take two films side by side and two rotating lens systems makes it possible to obtain stereoscopic high speed records. The whole machine weighs 4 tons; the illumination of the subjects is accomplished by the concentration of searchlight beams or magnesium flares. The apparatus is being used for scientific investigation.

A high speed camera developed at the Bureau of Standards takes pictures at the rate of 1500 per second.⁵ Six lenses are employed. It is being used to study the flight of bullets and large projectiles.

As a means of doubling the field of vision a new camera⁷ uses two lenses acting in the same plane embracing an angle of views. These adjacent pictures are projected to a 30-foot width screen by a twin projector.

A daylight loading camera⁸ for standard film uses reels of 50-foot capacity. Focusing

is accomplished by viewing a large image through a tube in the back of the camera. The full lens opening is f.2.5 and a shutter of tubular design is employed. Duraluminum is used for a camera of English manufacture⁹ operated by a small electric motor which receives current from a standard storage or special portable battery. Several adjusting indicators are provided.

Among the camera attachments introduced is a focusing telescope finder¹⁰ which gives a clear view of the entire field with a magnification of five diameters. By changing the optical system a 12-times magnification can be obtained. The images are erect and normal. Another focusing device¹¹ consists of a prism mounted in the camera shutter movement, and register leaf mechanism, and a special magnifier attached may be clearly seen. This arrangement permits focusing directly on the subject through the film.

In addition to the cameras and projectors for non-professional use described recently in

5 Motion Picture News, Feb. 2, 1924, p. 536.

6 Motion Picture News, Feb. 2, 1924, p. 536.

7 Scientific American, Feb., 1924 p. 105.

8 American Cinematographer, April, 1923, p. 25; Motion Picture News, March, 24, 1923, p. 1276.

9 Photographic Journal (London), Feb. 1923, p. 64.

10 American Cinematographer, Feb. 1923, p. 15.

11 American Cinematographer, Nov. 1923, p. 23.

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papers before the Society,¹² a new equipment¹³ for amateur and home use has been introduced which weighs only 4 1-2 pounds and which is very compact, measuring only 3x6x8 inches. It uses the 16 mm. width film from which a direct positive is made. The projector weighs 9 pounds and when folded fits into a case 8x11x11 inches in size. Illumination is furnished from a pre-adjusted, 200-watt 50-volt lamp burned in series with an air-cooler rheostat weighing only 2 ounces. Still or motion pictures may be shown. A 9 to 1 intermittent movement is employed.

Color Photography

Although a leading producer and director has recently aired his objections to colored motion pictures on the grounds of high cost, distraction from the action by the color, lack of artistic production to date, and eye strain, effort to further develop this art continues unabated,¹⁴ and there has been marked interest during the year in both color photography and projection. Not only has there been a considerable amount of experimental work done, but some of the developments have been made available for theatre projection. A five-reel feature using the Technicolor process has been widely shown during the year, and the color effects were well received by theatre patrons. It is announced that other feature pictures will shortly be produced using this process. Colored inserts appeared in a number of pictures, one of which showed scenes taken under the water in conjunction with the Williamson apparatus.¹⁵

A method of color photography recently announced¹⁶ utilizes film embossed on the back with minute lenses. The diaphragm of the camera lens is divided into three color segments. Its principle of operation is described as follows: When the photograph is taken through the back of the film the lens elements project on the emulsion images of the three color segments. In development the positive is produced by reversal, and when the film is projected with the same three-color segment filters in the projection lens, a color picture is obtained.

Successful demonstrations have been made in England¹⁷ of a colored motion picture method called the Cinechrome process. It

¹² Transactions of the Society of Motion Picture Engineers, May 7-10, 1924, p. 225.
¹³ American Cinematographer, Jan. 1924, p. 16.
¹⁴ American Photography, Jan. 1923, p. 14.
¹⁵ Motion Picture News, Feb. 23, 1924, p. 900.
¹⁶ Science, Technique & Industries Photographique, Feb. 1923, p. 12.
¹⁷ British Journal of Photography Colored Supplement, Feb. 1, 1924, p. 5.

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is fundamentally a red-green, two color process, the two main images are formed side by side on a double width film on a silver ruled glass grating, that part of the image falling on the silver strips being reflected and that part of the image falling on the unsilvered strips being transmitted. The single lens takes therefore two simultaneous pictures thus eliminating parallax and color fringes. The pictures are projected at normal speed from double width positives.

A recent exhibition in England¹⁸ of two-color films made by the C. Friese-Greene process showed in rapid motion scenes with figures, slight confusion of picture, but the color renderings of draperies were successful and essentially true. In open air views the faulty rendering of blues of nature was reported quite noticeable. Greens and reds were excellent. Fringing effects were undetected. For the exposure, panchromatic negative stock is required costing 1 1-2 cents per foot extra but ordinary positive stock may be used for printing; an additional operation being necessary at a cost of less than one cent per foot. The camera requires a rotating disc attachment which may be fitted into most cameras. An exposure aperture of f.8 in bright sunlight is sufficient at a speed of 22-24 pictures per second. Artificial lighting requires 15 per cent more light than is needed for monochrome work. Development is best accomplished in darkness and printing is done on the ordinary machine, the extra processes adding a 10-15 per cent increase in the time required for finishing.

Condensing Lenses

Of especial interest in connection with improvement in condensing lenses, as well as for other use, is the announcement¹⁹ of the commercial development of clear fused quartz. The very low temperature-expansion coefficient permits this material to be subjected to quick temperature changes without cracking; quartz condensing lenses used with the high intensity arc lamps show no breakage even after several months use. The low light absorption of quartz (about 1-5 that of glass), the low expansion and contraction (1-16 that of platinum), and its ability to pass ultraviolet light, are its important characteristics.

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¹⁸ British Journal of Photography Colored Supplement, Apr. 4, 1924, p. 16.
¹⁹ Light, July 1924, p. 6, Motion Picture News, May 24, 1924, p. 2528.



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Focus	Standard mount	Focussing mount
1 3/8 inches	\$40.00	\$47.00
1 9-16 inches	40.00	47.00
2 inches	43.00	50.00
3 1/8 inches	51.00	58.00
4 inches	64.00	71.00
4 3/4 inches	72.50	82.50

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jection of light have been published²⁰ during the year in the form of a series of articles by a well known engineer and physicist. These cover light reflection from spherical, parabolic and other polished surfaces, as well as refraction by lenses, for different types of light sources.

Film

The use of direct positives as a means of reducing the cost of motion picture projection for the amateur has been discussed before the Society,²¹ and general interest obtains in this process abroad as well as in this country. Experiments²² on a reversal process for film conducted at the Technical High School for Photography at Munich employ positive stock exposed ten times normal (1-35 of a second at f.1.4). The exposed film is developed in a caustic soda pyrocatechol developer, bathed in a sodium sulphite solution, bleached in an acid permanaganate solution and cleaned in sodium bisulfite. After hardening in a plain chromealum bath the film is redeveloped in a weak metolhydro quinone developer in strong light. Another German reversal film and process produces either black and white or browntone positives.

In France direct positives for amateur projectors have been made²³ by employing positive film, using very large aperture lenses. In sunshine an aperture of f.6 was necessary. On cloudy days f.2.5 apertures are reported to give good results. The thin evenly coated film employed is given a special chemical treatment. Another direct process²⁴ recently marketed uses an outfit consisting a light weight motion picture camera and tripod, film frames, frame holder, for film winding, developing and washing, and other accessories. The entire operation is adapted to standard cameras.

For the preservation of film a liquid wax²⁵ has been introduced for which both renovating and sprocket holes waxing advantages claimed. Another German process²⁶ is claimed to eliminate film scratches. Still another process has also been introduced which may be attached to any standard projector.²⁷

Announcement was made in England of a

20 General Electric Review, Feb. 1923, and issues following.

21 Transactions of the Society of Motion Picture Engineers, May 7-10, 1923, p. 246.

22 Kinotechnik, May 25, 1923, p. 264; Oct 20, 1923, p. 477.

23 Bulletin de la societe francaise de photographie, Sept. 1922, p. 261.

24 Kinematographic Weekly Supplement, Dec. 7, 1922, p. iii.

25 Motion Picture News, May 31, 1924, p. 2702.

26 Motion Picture News, July 5, 1924, p. 108.

27 Motion Picture News, Jan. 16, 1924, p. 774.



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General

When the necessary precautions are used successful motion pictures can be obtained in the Artic regions at temperatures as low as 65 degrees Centigrade below zero.²⁹

An electrically operated orchestra director has been developed which automatically signals to the conductor those things he should know to synchronize the music with the projected picture.³⁰ Should the film break, the apparatus automatically stops. A principal advantage claimed is that it is not necessary for the director to keep shifting his eyes from the music stand to the picture.

Illuminants

The past year has shown increasing interest in the development and use of reflector arcs. While this department is not as active here as it is abroad, there are several types of reflector lamps on the market. Experience has shown that automatic control is essential for these units and several such controls have been developed, some working on the constant feed principle and others using arc voltage control. The proper field for these lamps is still indefinite, but their most efficient operators appears to be in the small and medium sized theatres, for which material savings in current are claimed in comparison with the use of standard types of these lamps. There are several types of these lamps on the market in England, Germany and other European countries. To obtain closer current regulation than is possible with the average resistance, a vernier tandem unit is advocated for use with these arcs.³¹

These reflector lamps are essentially low current units operating at from 15 to 25 amperes. Carbons are ordinarily mounted in the optical axis, the negative carbon passing through the center of the reflector. No condensers are ordinarily used, the light by the projector being directed to the film and objective lens. One exception is a unit developed in Germany which uses a large mirror in conjunction with a single plano-convex condensing lens.³²

28 Photographic Journal, April 1924, p. 188.

29 American Cinematographer, Aug. 1923, p. 8.

30 Motion Picture News, Feb. 9, 1924, p. 70.

31 Kinematographic Weekly, Dec. 13, 1923, p. 70.

32 Moving Picture World, Aug. 18, 1923, p. 589, Aug. 25, 1923, p.

672. Motion Picture News, Aug. 18, 1923, p. 809, Kinematographic Weekly, Sup. Nov. 9, 1922, p. 4, and Dec. 14, 1922, p. 4, Motion Picture News, March 22, 1924 p. 1354.

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In this country the incandescent lamp projecting systems are being employed in increasing numbers. The aspheric condensing lens systems³³ are now generally employed, the increased amounts of light obtained with them having extended their field of application to all except the largest theatres.

A rotary arc lamp for motion picture projection has been tried out in a London theatre.³⁴ This arc lamp contains an annular watercooled negative electrode of copper. The positive carbon is held centrally in the hole of the annular negative. Magnetic flux across the arc causes the negative spot to whirl rapidly around on the inner edge of the negative ring but the crater face remains steadily illuminated and entirely unobstructed by any negative shadow. As there is no negative carbon, the lamp house and lens holder can be made very compact.

It has been reported that more rapid deterioration of the film has been experienced with the reflector arc lamp, and investigations have been conducted in Germany³⁵ on the relation between temperature and illumination at the aperture for condenser and reflector arc lamps; both a platinum bolometer and a thermocouple were utilized with reported accuracies of plus or minus two per cent. The relation between current consumption, screen brightness and temperature of the film gate were made available in graphical form. The opinion has been advanced from another source that ultra-violet light reaching the film may be an important factor.

Laboratories and Apparatus

A density meter has been developed³⁶ which makes use of the photometric cell instead of the eye for reading the opacity of a silver deposit. The device utilizes the principle of subjecting the cell alternately to two beams of light, one having passed through the medium whose opacity is required and the other through a standard optical wedge whose position is so adjusted, that the photoelectric current remains unchanged during the substitution of one beam for another, to avoid the inconsistent behavior of the selenium cell.

A new film splicing machine³⁷ has a cutter, scraper and joiner on one base plate. A single down stroke of the lever serves to cut and scrape the film. When the lever is pressed

down only half way the film is cut without being scraped. Another machine³⁸ for developing, fixing, washing, tinting, drying and polishing either negative or positive film, is used in Germany. The machine has a capacity of 20,000 feet of film per day and requires only two men to operate.

A portable motion picture finishing apparatus³⁹ has been developed which fits into a case less than three feet square when packed for shipment. The apparatus apparently consists of an apron for winding the film in the form of a spiral and a number of shallow circular tanks for containing the solutions. A similar apparatus was developed in this country in 1918.

Japanese advices report Professor Kyogi Suyehito of Tokio Imperial University has perfected a new method of taking flashlights of very short duration under water for still or motion pictures.⁴⁰ By the new Japanese process mercury is drawn through a hair-fine bore of a glass tube, serving the same purpose as the filament of the modern lamp. When a low voltage is turned on, the mercury is heated to the explosion point almost instantaneously, and as the tube bursts a brilliant mercury arc light is produced for a fraction of a second or so, then dies. Instantaneous photography of metal vibrations, rolling of model ship hulls from beneath the surface of water lined tanks, etc., etc., are predicted as possible under better result producing conditions by this Japanese scientist's invention.

A new lighting unit for studios has been developed and has given excellent results in diffused lighting. This unit⁴¹ consists of a high intensity arc mounted in the center of a large 5-foot faceted concave reflector. The reflector has a diffusing surface of a special material which is designed to prevent eye burn and the unit though powerful has proven useful and comfortable in the studios. The high intensity arc has also appeared in the studio in a smaller form than the original 150-ampere studio lamp. It is much more actinic than the ordinary carbon arc spotlight.

Announcement has been made of the development of another system of studio light control. A one-switch control makes it possible for one man to control all the lights on

33 Transactions of the Society of Motion Picture Engineers, May 1-4, 1922, p. 80, and Oct. 1-4, 1923, p. 126.

34 Kinematographic Weekly, Sept. 15, 1922.

35 Kinotechnik, April 14, 1923, p. 175.

36 Photographic Journal, April 1924, p. 189.

37 Kinematographic Weekly Supplement, Nov. 30, 1922.

38 Motion Picture News, Dec. 9, 1922, p. 2958.

39 Kinematographic Weekly, March 20, 1924, p. 76.
British Journal of Photography, 65; 379, 1918.

40 Motion Picture News, Nov. 10, 1923, p. 2284.

41 Motion Picture News, Sept. 15, 1923.

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Projectors

An automatic projector has been introduced in England for the projection of one-thousand-foot reels of film.⁴² In appearance the unit resembles a grandfather's clock with the picture showing where the clock face would ordinarily be. After projection of the film, which occupies about twenty minutes, re-winding is accomplished in about three minutes while a still picture is shown. It is expected that the device will be used largely for advertising purposes. Another projector of English design uses a 2-blade flat disc shutter between the aperture and condenser close to the film at the gate.

A new intermittent movement design⁴³ embodies an improved lubricating system, a more convenient method of adjustment, and a double bearing on the intermittent shaft. Another design uses the three-branched Maltese cross principle; it is claimed that from 40 to 75 per cent increase in screen illumination can be obtained and that so-called

scintillation is materially reduced. Change in the shutter design is necessary. Flicker elimination is the objective sought by a German inventor who moves the light beam in synchronism with the film.⁴⁴

A continuous projector⁴⁵ recently announced utilizes a revolving ring of lenses and a second fixed system of lenses the middle ring of which is in optical connection with the projector lens outside of the ring. The film moves continuously in step with the revolving ring of lenses. It is said that flicker is absent even at a projection speed of three pictures per second.

⁴⁴ Scientific American, Jan. 1923, p. 29.

⁴⁵ The American Photographer, Jan. 1924, p. 38.

(Continued next month)

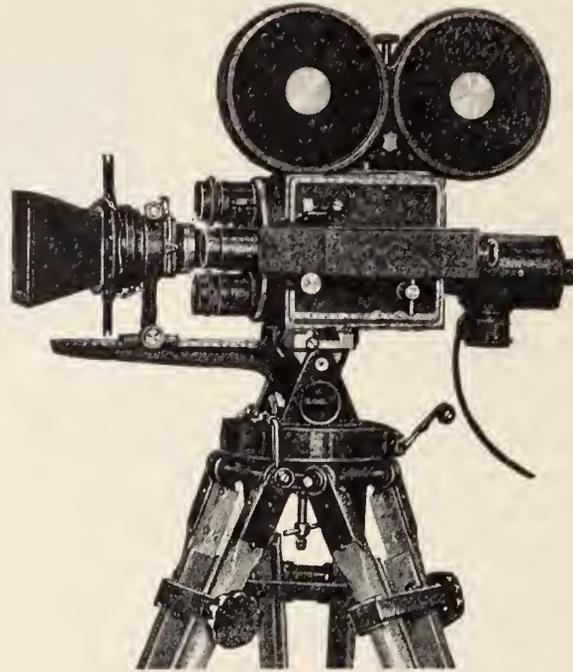
Victor Milner, A. S. C., is busily engaged with the filming of "The Wanderer," which R. A. Walsh is directing for Famous Players-Lasky. Vic has some massive scenes in this production, and, during the past month, called in many of his fellow A. S. C. members to get all the angles on some of the big sequences.

* * *

Faxon Dean, A. S. C., is engrossed with the filming of his latest Fox production.

⁴² New York Tribune, April 7, 1924.

⁴³ Motion Picture News, June 20, 1924, p. 3112, and Moving Picture World, June 20, 1924.



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Very sincerely,

Robert Palmer

American Cinematographer

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This Month



A. S. C. HOLDS ELECTION OF OFFICERS FOR 1925

LIGHT SOURCES

By Earl J. Denison

PUBLISHED IN HOLLYWOOD CALIFORNIA

Releases

April 5, to April 16, 1925

TITLE	PHOTOGRAPHED
O. U. West	Billy Ivers
Tainted Money	Allen Thompson
Gold and Grit	Irving Ries
The Way Of A Girl	John Arnold, member A. S. C.
Declasse	Tony Gaudio, member A. S. C.
The Bridge of Sighs	John Mescall
Percy	J. R. Diamond
On the Go	Ray Ries
Men and Women	L. Guy Wilky, member A. S. C.
The Burning Trail	Gilbert Warrenton, member A. S. C.
School for Wives	Joe Ruttenberg and Jack Zanderbroeh
Grass	Ernest Schoedsack
My Son	Wm. O'Connell
Man and Maid	Chester Lyons
Waking Up The Town	Paul Perry, member A. S. C.
His Supreme Moment	Arthur Miller
The Wizard of Oz	H. F. Koenekamp, member A. S. C.
The Charmer	James Howe
Proud Flesh	John Arnold, member A. S. C.
I Want My Man	James Van Trees, member A. S. C.
Lilies of the Streets	Edward Paul and Chas. Davis
The Night Ship	Jack MacKenzie
A Kiss in the Dark	Alvin Wyckoff
Madame Sans Gene	George Durand
Tides of Passion	Wm. S. Adams
Spook Ranch	Harry Neuman
Recompense	David Abel, member A. S. C.
Code of the West	Lucien Andriot
The Mad Dancer	Not credited
White Fang	John Leezer; King Gray, member A. S. C. , and Glen Ganoe
Speed	King Gray, member A. S. C. and Orin Jackson
Forbidden Cargo	Silvano Balboni
Adventure	C. Edgar Schoenbaum
That Devil Quemado	Ross Fisher, member A. S. C.
Across the Deadline	Jack Bardaracco

American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

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Light Sources

Article Four

By Earl J. Denison

Four Different Kinds of
Light Sources Considered
by Projection Authority

There are four different light sources now available for motion picture projection, namely:

- The carbon arc;
- The tungsten filament lamp, (commonly called Mazda);
- The high intensity arc;
- The reflector arc.

While these light sources vary in brilliancy, temperature and quality of light, each will give excellent results when properly installed and handled. Considerable care and thought should be given to the selection of the light to insure best screen results, together with low operating cost.

THE PURE CARBON ARC

Practically all the light from a pure carbon arc emanates from the incandescent positive crater. Incandescence is a function of temperature and therefore, in order to obtain a light source of maximum brightness, a substance must be used which can be maintained at the highest possible temperature. In an electric arc, between pure carbon electrodes the surface of the tip of the positive electrode is maintained at temperature of over 3700 degrees centigrade. The carbon surface, when heated to this point, gives forth about 160 candle-power for every square millimeter of its surface. When such a carbon arc is forced by, let us say, doubling the current the brilliancy is not increased proportionately as might be expected. Instead, the carbon is consumed faster without any material increase in crater temperature. Therefore it is useless to force a carbon arc beyond a certain point.

Every projectionist is thoroughly familiar with this type of light. Not only is it the most widely used light, it is also the most flexible, being suitable to about 75 per cent of the motion picture theatres, and adaptable to a range in amperes from 25 to 100. However, the carbon arc is the most expensive to operate and the most difficult to handle. This type of arc requires constant care, and holds the world's record as a condenser breaker.

THE TUNGSTEN FILAMENT LAMP (MAZDA)

The Mazda unit for projection consists of a lamp house with 900 watt incandescent tung-

sten filament lamp condenser, spherical reflector, and transformer for stepping down line voltage to lamp voltage. This type of light was brought out about 10 years ago but did not find much favor with the projectionists at that time because it was put on the market before it had been developed sufficiently to make it practical for theatre installation. In the last year, the Mazda unit has been perfected to such an extent that it is fast replacing the carbon arc where length of throw is not prohibitive. It is the opinion of the writer, as well as the opinion of a large number of projectionists and engineers, that the Mazda lamp for projection is the ideal light source.

Advantages

It has many advantages over every type of arc lamp. Of course, the optical system of a projector is directly responsible for screen illumination and definition of the picture, and as I will deal with that subject in another article. I will only point out some of the advantages of the tungsten filament incandescent light over the carbon arc.

The Mazda unit is economical in operation, the standard lamp being 900 watts, 30 volts, 30 amperes. This reduces the current consumption at least 50 per cent and with the Bausch and Lomb relay condenser system will equal, in screen brilliancy, a 60 ampere carbon arc. There is absolutely no fluctuation in the light, thereby eliminating shadows and reducing shutter flicker to a minimum.

There are no complicated and cumbersome electrical apparatus. It is perfectly clean—no lamp house to clean or carbons to handle.

The light rays have a soft, warm quality that brings out the photographic quality of the picture.

100 Hours

The lamps are guaranteed for 100 hours and, if properly handled, will last much longer. The lamps do not deteriorate in brilliancy, but a sudden jar is apt to break the filament when hot. Sometimes the filament sags or marks, causing shadows on the screen. The Mazda unit is simple in operation and requires no handling except to change lamps, and this is accomplished in a few seconds

(Continued on page 18)

A. S. C. Holds Election of Officers for 1925-6

Board of Governors Chosen for Like Period. Scott Is New President.



Milner, Clark, Wilky, Glennon and Boyle Are Other Officers at Head of A. S. C.



HOMER SCOTT
President



VICTOR MILNER
First Vice-President



DANIEL CLARK
Second Vice-President

At the election of officers for 1925-26, Homer Scott was elected president of the American Society of Cinematographers; Victor Milner, first vice president; Daniel B. Clark, second vice-president; L. Guy Wilky, third vice-president; Bert Glennon, treasurer; and John W. Boyle, secretary.

The Board of Governors elected for the same period includes Bert Glennon, Victor Milner, John W. Boyle, H. Lyman Broening, Gaetano Gaudio, Gilbert Warrenton, George Schneiderman, Homer Scott, L. Guy Wilky, Fred W. Jackman, Daniel B. Clark, Charles Van Enger, Norbert Brodin, Paul P. Perry and Alfred Gilks.

The retiring A. S. C. officers are Gaetano Gaudio, president; Gilbert Warren-

ton, first vice-president; Karl Brown, second vice-president; Homer Scott, third vice-president; Charles Van Enger, treasurer; and Victor Milner, secretary.

Homer Scott

Homer Scott, the president-elect, is a veteran cinematographer in Southern California production matters. In the earlier days he was associated with Famous Players-Lasky at the period of inception of that organization. Later he was prominently identified with submarine cinematography having made "What Women Like," starring Annette Kellerman. Subsequently he began a long association with the Mack Sennett studios, having filmed, among other productions, "Heartbalm," "Molly-O" and "Suzanna."

Victor Milner

Victor Milner, first vice-president, started in the field of cinematography in the pioneer era in New York City, he having been one of the first news cinematographers with Pathe, prior to which, however, he had been a projectionist. Among the productions he has photographed are "Fugitive from Matrimony," "Haunted Shadows," "The White Dove," "Uncharted Channels," "Behind Red Curtains," "The Double Standard," "Half a Chance," "Her Unwilling Husband," and "Dice of Destiny" for J. D. Hampton; "One Hour Before Dawn," "When We Were Twenty-one" and "Felix O'Day," with H. B. Warner; "Human Hearts," directed by King Baggott, and other Univer-



L. GUY WILKY
Third Vice-President



BERT GLENNON
Treasurer



JOHN W. BOYLE
Secretary

sal features; "Thy Name Is Woman" and "The Red Lily," both Fred Niblo productions; "Her Night of Romance," with Ray Binger, "Learning to Love," starring Constance Talmadge for Joseph M. Schenck productions; "East of Suez," starring Pola Negri and directed by R. A. Walsh for Paramount; and "The Spaniard, starring Ricordo Cortez and directed by R. A. Walsh for Paramount. Milner at present is at work on "The Prodigal Son," which Walsh is directing for Paramount.

Dan Clark

Dan Clark, second vice-president, has long been associated with Tom Mix in the filming of the Fox productions starring Mix. Among these features have been "Up and Going," "For Big Stakes," "The Fighting Streak," "Romance Land," "Just Tony," "Do or Dare," "An Arabian Night," "Catch My Smoke," "Three Jumps

Ahead," "Modern Monte Cristo," "Journey of Death," "Tempered Steel," "The Heart Buster," "The Last of the Duanes," "Oh You Tony," "The Deadwood Coach," "Dick Turpin," and "Riders of the Purple Sage."

L. Guy Wilky

L. Guy Wilky, third vice-president, for the past several years has been chief cinematographer for William de Mille productions for Paramount. Among these vehicles have been "Midsummer Madness," "The Lost Romance," "What Every Woman Knows," "The Prince Chap," "Conrad in Quest of His Youth," "Clarence," "The Bedroom Window," and "The Fast Set."

Among the more recent productions he has photographed for Paramount are "New Lives for Old," and "The Man Who Fights Alone;" and, several years ago, "The Tree of Knowledge" and "Jack Straw,"

with Robert Warwick, for the same company. Before joining Famous Players-Lasky, Wilky had spent three years with Lubin, photographing for Romaine Fielding; a year with Bessie Barriscale whom he filmed in "Two Gun Betty," "A Trick of Fate," "Joslyn's Wife" and "The Woman Michael Married;" one year with Louise Glaum whom he photographed in "An Alien Enemy," "A Law unto Herself," "Shackled" and "The Goddess of Lost Lake;" and a year with the American Film Company at Santa Barbara. He also was with J. Warren Kerrigan whom he filmed in "A Man's Man" and "The Turn of a Card;" and with Thomas H. Ince for whom he photographed "Her Mother Instinct," "The Girl Glory" and "Free and Equal," all featuring Enid Bennett.

Bert Glennon

Bert Glennon, treasurer, is affiliated with Famous Play-
(Continued on Page 15)

E. Burton Steene, Akeley Expert, Comes West

A. S. C. Member, Long Located in New York City, Treks to Film Capital.



Ace Cinematographer with Extensive and Varied Experience in U. S. and Europe.

E. Burton Steene, A. S. C., has arrived in Hollywood from New York City, and will make his permanent headquarters in Hollywood, he having brought his Bell and Howell and Akeley camera outfits with him. Steene is a well-known Akeley specialist, his services having been in wide demand in the East.

For the past ten years, Steene has made New York City his cinematographic headquarters, he having resisted the urge which carried his fellow cinematographers of the pioneer years to Southern California. But a pleasure trip to the Southland last fall captivated the confirmed New Yorker with the result that he returned to his beloved Gotham, wound up work already contracted for, and then hied himself to the land of the famous climate.

Versatile

Steene is known as one of the most versatile cinematographers in the profession, he not only being an ace in regular production matters but having a long list of special assignment work to his credit in the nature of travel and industrial productions which he not only photographed but directed.

Passports Always Ready

His efficiency on difficult assignments, which entailed long journeys to out-of-the-way places, gained him an enviable reputation in the East where he became known as the cinematographer who



E. BURTON STEENE, A. S. C.

“always carries his passports with him.” By force of long habit, the A. S. C. member had his passports tucked away among his valuables when he arrived in Hollywood recently.

Three years ago Steene made a memorable trip to Europe during which he was engaged in advisory and supervisory capacities on cinematographic matters by Europe's largest companies. In Berlin, he was retained to supervise the installation and production of the first picture for the Potsdam Film Corporation, and could have signed a long term contract with either of two companies who sought his services, but the A. S. C. member elected to return to his activities in the East.

Steene, however, did re-

main in Berlin long enough to take advantage of a lucrative offer to make an aerial picture in which his abilities that have made him a foremost Akeley specialist showed to remarkable advantage. On the same production, Steene was retained to install modern lighting systems for the German company. The same trip in Europe took the A. S. C. member through England, France, Italy, Serbia, Montenegro, Albania, Greece, Turkey, Russia, Belgium, Holland, Denmark, Austria and Slovakia.

War Service

During the World War, Steene was with Brigadier General Charles F. Lee, Royal Air Force, in command of the British Air Mission, as cinematographer, and made instructional productions, including “How to Fly,” which was given wide exhibition among student aviators. The A. S. C. member worked with five different pilots, four of whom, including General Lee, were subsequently killed. Steene had many narrow squeaks himself but managed to come through alive, always with the action recorded on the celluloid.

With this background, Steene has become an outstanding expert with an Akeley. Immediately before leaving New York City for Hollywood, Steene made a month's trip to Cuba where he was associated with Henry Cronjager, A. S. C., in the filming of “Wildfire.”

Report of S. M. P. E. Progress Committee

(Continued from last month)

In Germany interest has recently been shown in the measurement and elimination of excess heat at the film gate.⁴⁶ A specially devised film gate employs a fluid cell containing water or a solution. The formation of bubbles is prevented by cooling by means of the pipe in the cell through which water is circulated. It is claimed that with arc lamps the film could be stopped for still projection without burning the film. A blower system has also been employed to keep the cell solution cool. With projectors employing of an air current between the lamp and condenser is proposed to reduce the heat reaching the film and condenser lens.⁴⁷ A thin piece of transparent mica inserted between the light source and condenser or refused silica glass are also suggested, but forced ventilation is an essential feature.

A new film rewinder⁴⁸ employs 6-inch diameter hubs which are used in both the feed and take-up boxes. The upper box is horizontal, with a rotating booth, and the film feeds from the inside roll to the upper sprocket by a centrifugal pressure; the speed of the rotating feed plate is controlled by means of a revolving helix acting on a friction disc. After projection the large core of the lower roll is removed and the entire roll transferred to the upper box. A new nonrewinding magazine has been developed in this country, which may be attached to any standard projector.⁴⁹

A safety device designed to prevent burning of film whenever the film breaks or is burned out at the gate, drops a shutter directly in front of the film gate and at the same time spots the motor. It also functions should the film loops become shortened due to stripped holes.⁵⁰

Effects

In order to effect saving and production costs a device has been perfected for making realistic night scenes in the daytime. This device consists of an attachment for any standard make of camera, used in conjunction with a special coloring solution with which the finished negative is treated.⁵¹ Although no particulars are given the method undoubtedly



Data on New Features
Gleaned from Every Part
of Globe. Important Summary

consists of photographing through a red filter on to a panchromatic emulsion sensitive to infra red. Such emulsions can be prepared by bathing in dicyanin, kryptocyanin, etc.

A comparison of the number of motion picture theatres in the British Isles with those in the United States shows that this country has considerably more in proportion to the population. For the generally accepted figure of about 14,000 theatres in the United States there is in this country one theatre for every 8,000 people. There are 40,073 motion picture theatres in the British Isles, one for every 11,009 people. London with a population of over 700,400 has only 385 theatres, or one for every 18,200 people.⁵²

A very extensive⁵³ survey of the motion picture industry has been conducted by the Babson Statistical Organization; Rowland Rogers, head of the department of Photoplay Production of Columbia University; and Motion Picture News. Calculations have been made on the basis of 14,000 exhibitors. Three articles giving the results of the survey were published; the first contains statistics covering the size of theatres and number of days a week open, number of employes, and prices of admission. The second article gives information concerning the program, the number of reels per program, the character of the program besides the feature, kind of music, etc. The third article contains a percentage expression of the answers to a question relating to present business of the exhibitor compared to past, seasonal receipts, opinions on foreign films and the influence of varying feature pictures on the attendance.

Figures published for 1921 give the number of establishments engaged in the production of motion pictures in the United States as 127, employing 10,659 persons, whose product is valued at \$77,397,000.⁵⁴

Figures for the year ending March 1923 show that only about two-thirds of the footage of unexposed negative was imported in 1923 it was dutiable as compared to the year ending March 1922 when it came in duty

(Continued on page 9)

46 Kinotechnik, Feb. 20, 1924, p. 39.

47 Kinematographic Weekly, Jan. 18, 1923, p. iv.

48 Kinematographic Weekly Supplement, April 19, 1923, p. iv.

49 Motion Picture News, Jan. 16, 1924, p. 774.

50 Motion Picture News, Nov. 18, 1922, p. 2576.

51 American Cinematographer, Nov. 1923, p. 5.

52 Motion Picture News, Nov. 24, 1923, p. 2444.

53 Motion Picture News, Nov. 18, Nov. 25, and Dec. 2, 1922, pp. 2527, 2644, 2772.

54 Motion Picture News, Dec. 23, 1922, p. 715.

Harold Wenstrom Is Chosen Member of A. S. C.

Sterling Cinematographer Is Chosen for Roster of the A. S. C.



Work on Many Cosmopolitan Productions Included in Wenstrom's Laurels.

Harold Wenstrom has been elected a member of the American Society of Cinematographers, according to an announcement from the Board of Governors.

Wenstrom was photographing Sidney Drew comedies at the time he entered the navy during the recent war in 1917, and became photographer with the Bureau of Navigation during 1917 and 1918.

Following the signing of the armistic in 1919, he became a cinematographer with the Metro Pictures Corporation, for which organization he filmed "The Best Luck," directed by Ray Smallwood, and "The Hope," directed by Herbert Blache.

His reputation as a sterling



HAROLD WENSTROM, A. S. C.

cinematographer won him a connection with Cosmopoli-

tan in 1920 with which organization he has continued to date. During this affiliation he has been associated in the filming of the following productions: "The Wild Goose," "Proxies," directed by George Baker; "The Young Diana," directed by Robert Vignola; "The Beauty Shop," directed by Edward Dillon; "When Knighthood Was in Flower," directed by Robert Vignola; "The Face in the Fog," directed by Alan Crosland; "The Go-Getter," directed by E. H. Griffith; "Under the Red Robe," directed by Alan Crosland; "The Great White Way," directed by E. Mason Hopper; "Janice Meredith," directed by E. Mason Hopper; and "Zander the Great," directed by George Hill.

free. The values of cameras imported⁵⁵ almost doubled for 1923.

Stereoscopic

Efforts to obtain stereoscopic motion pictures have claimed the attention of a number of inventors and others in the industry. One director it is reported is making a feature picture using a camera of English development for which stereoscopic effect is claimed.⁵⁶ A new projector for theatres⁵⁷ uses a film made from a negative taken with a camera containing two lenses the same distance apart as the average human eye. The two pictures are projected alternately and rapidly on a screen with a double projector. Viewing is accomplished by means of a small apparatus placed in front of each spectator which consists of a circular aluminum casing inside of which a motor driven fan blade rotates at 1500 r.p.m. in synchronism with the shutter blades of the projector. Another de-

vice uses two lanterns with an oscillating shutter, the pictures being viewed through corresponding synchronous shutters. A new adaptation of the anaglyphic method of viewing is also reported⁵⁸; no special eye-glasses are used.

Still another method of projecting stereoscopic motion pictures comprises, (1) a special camera using film on which the individual pictures are twice as wide and one and one-half times as high as those on standard film; (2) a special projector, and screen, the latter is 21 1-2X40 feet in size, in front of which is strung a "breaking surface" compound of several miles of thread. This breaking surface is claimed to give relief to the pictures and to avoid angular distortion. All prints are to be made by projection.

Studios

Among the new lighting units developed for studio lighting is an arc lamp spotlight

(Continued on page 15)

⁵⁵ Motion Picture News, Aug. 25, 1923, p. 926.

⁵⁶ Motion Picture News, July 26, 1924.

⁵⁷ Scientific American, Jan. 1923, p. 5.

⁵⁸ Motion Picture News, Nov. 18, 1922, p. 2574.

The Editors' Lens - - - - focused by FOSTER GOSS

- ¶ As this issue goes to press, we have seen nor heard no word from Mr. F. H. Richardson, whose mis-statements were decisively spiked in the April number of the *American Cinematographer*. For Mr. Richardson's own sake, it would seem that the less he has to say, and the more careful he is in saying it, the better off he will be.
- ¶ Unless Mr. Richardson displays more acumen than he has in the past, it is very possible that he will have all sorts of fanciful versions, printed or otherwise, of the bad situation into which his rashness has precipitated him.
- ¶ Because he has seen fit to deviate from the truth, any further misrepresentations from Mr. Richardson will serve merely to enmesh him further. Had this publication been as fractious as Mr. Richardson allows himself to be, it would have long since taken him to task; the letter, which was reproduced in the last issue, was not the first that came here from the oracle of projection. But in the past the source was considered, and the outbursts were allowed to go by unchallenged.
- ¶ When, however, Mr. Richardson took it upon himself to misrepresent the activities of this publication, it was time that his immunity no longer be tolerated and the situation was handled accordingly. He should know now that we won't succumb to threats.
- ¶ If Mr. Richardson will forget himself long enough to see himself as others see him, he will economize and conserve on his utterances, and be the gainer therefor.
- ¶ But if rave Mr. Richardson must, about this publication, let him—and he will hear more from us.

Standard Speeds

- ¶ The American Society of Cinematographers has gone on record as advocating the retention of the normal rate of sixty feet per second as the camera taking speed.
- ¶ In a letter to the Society of Motion Picture Engineers, copies of which were sent to the exhibitor and producer organizations, John W. Boyle, secretary of the American Society of Cinematographers, outlined various reasons as to why the present standard should be kept. Those who have studied the projection situation reach the common conclusion that the only way to prevent projection speeds from becoming more excessive than ever, is not to allow taking speeds to increase accordingly.
- ¶ There is no doubt that the Society of Motion Picture Engineers will go on record as favoring a standard projection speed which is somewhat in excess of the taking speed of sixty feet per minute—projection experts agree that some such ratio between taking and projection speeds have been found to produce the most ideal results.
- ¶ If this ratio is maintained, as they claim it must be, the result of running up taking speed will be, in turn, to boost the projection speed. The further results are evident: more film to be raced through the projectors in the same amount of time with the consequent damage to film and mechanism; increased cost of film consumption and lights; and a myriad of other contingencies.
- ¶ If the normal speed of taking is allowed to be increased at this time—a rate which has been found to be correct by experience over a period of many years—then the precedent is set for more changes in the future—thereby making possible a long procession of taking speeds chasing projection speeds, or projection speeds trying to keep ahead of taking speeds.



Karl Brown, A. S. C., is filming James Cruze's latest production for Famous Players-Lasky.

* * *

L. Guy Wilky, A. S. C., is back in Hollywood from New York City where he journeyed for the last William de Mille production.

* * *

Robert Doran, A. S. C., has completed the photographing of his latest comedy for Hal Roach.

* * *

King Gray, A. S. C., has returned from Portland, Ore., where he photographed a Moomaw feature.

* * *

Walter Griffin, A. S. C., is believed to be the only A. S. C. member capable of disputing John Boyle's record of the long-term ownership of one automobile. King Gray is authority for the statement, and Walter confirms it himself, that the latter bought a Buick six when Griffin's son attended kindergarten—the younger Griffin is now a high school student, and father is still driving the old faithful Buick. Walter has just treated it to a new coat of paint and a new top, and says that he is going to drive it until it wears out—which is highly problematic, considering that it had already run more than 15,000 miles when he bought it from Frank Lloyd, the director, and further, that it now has attained a venerable mileage in excess of 125,000.

* * *

John W. Boyle, A. S. C., is, however, a close rival to Griffin as any one, who knows how long John has been driving his Interstate, will testify. Boyle has just bought a Nash sedan but, like the old colonel who gave a life-time home to the horse that galloped him around in his dashing youth, John still has a place in his garage for his Interstate which, unlike the horse, continues its usefulness without running up the feed bill.

Harry Perry, A. S. C., has returned from the big snows at Ranier where he filmed location scenes on the Sol Lesser production which features Gunnar Kasson, famous "musher," and Balto, the lead dog in the heroic dash to Nome.

* * *

Reginald E. Lyons, A. S. C., has returned from San Diego, where he was on location with Marshall Neilan's Goldwyn company. Reggie caught some prize aeroplane shots of parachute jumps. Reggie made eleven flights in De Haviland planes of the Marine Corps, and took many of the scenes at the speed of 125 miles per hour while the planes were at an altitude of 2500 feet.

* * *

Victor Milner, A. S. C., is entering the final stages of the cinematography on "The Prodigal Son," a Paramount picture directed by R. A. Walsh.

* * *

George Schneiderman, A. S. C., has begun filming John Ford's current production for Fox. This is the director-cinematographer combination that is responsible for the remarkable work in "The Iron Horse."

* * *

Cupid seems to be hovering around the Frank Lloyd Productions these balmy spring days. And especially intimate with the cinematographers. A few months ago Norbert F. Brodin, A. S. C., first cinematographer, was married during the filming of "The Silent Watcher" and recently Dewey Wrigley, second on Mr. Lloyd's current production, "The Winds of Chance," slipped away from the set long enough to be married to Miss Elsie Fisher of the wardrobe department. Rev. Neal F. Dodd performed the ceremony. A few weeks ago Daniel Mulholland, property master, and Paul E. Seckler, chief electrician, became benedicts and Ruth Clifford, actress, became Mrs. Cornelius before the last Lloyd production was completed.

On the New Board of Governors

Included on the new Board of Governors, are the following A. S. C. members, whose photographs are reproduced below. The Board also includes all the officers of the American Society of Cinematographers.



FRED W. JACKMAN, A. S. C.



CHARLES J. VAN ENGER, A. S. C.



GEORGE SCHNEIDERMAN, A. S. C.



PAUL P. PERRY, A. S. C.



GAETANO GAUDIO, A. S. C.



GILBERT WARRENTON, A. S. C.

George Benoit, A. S. C., is preparing to photograph his latest production with Hunt Stromberg.

* * *

Gilbert Warrenton, A. S. C., has finished filming Edward Mortimer's latest production for Fox, and has begun photographing "Seven Days," an Al Christie feature, direct-

ed by Scott Sidney, the cast including Mabel Julienne Scott, Lillian Rich, Hallam Cooley, William Austin, Creighton Hale, Eddie Gribbon, Rose Gore, Tom Wilson and Lillian Tashman.

* * *

Hans Koenekamp, A. S. C., is filming the latest Larry Semon production.

Good photography plays no small part in making a picture popular. The public demands it—exhibitors expect it.

EASTMAN NEGATIVE FILM

— does justice to the cinematographer's skill. It has uniformity, latitude, speed— each is of photographic importance.

And Eastman Positive Film carries all the quality of the negative through to the screen. Your negatives deserve to be printed on it.

Eastman Film is identified by the words "Eastman" and "Kodak" in black letters in the film margin.

EASTMAN KODAK COMPANY
ROCHESTER, N. Y.

A. S. C. ELECTS OFFICERS

(Continued from page 6)

ers-Lasky as chief cinematographer for Paul Bern productions. Previous to being assigned to Bern, Glennon was chief cinematographer for Cecil B. De Mille, among whose productions he photographed "The Ten Commandments," "Triumph" and "Changing Husbands." Previous to going with De Mille, the A. S. C. member was chief cinematographer for George Melford productions, he having filmed "You Can't Fool Your Wife," "Java Head," "Ebb Tide," "The Woman Who Walked Alone" and "Burning Sands." Before he became identified with Famous Players-Lasky,

Glennon had been cinematographer on many productions for Universal and the National Film Corp. Among the Paul Bern productions he has photographed are "Open All Night," "Worldly Goods," "Tomorrow's Love," and "The Dressmaker from Paris."

John W. Boyle

John W. Boyle, secretary, has a cinematographic career that harks back to the period of production in New York City before Southern California became a power in the film world, he having been secretary of the old Cinema Camera Club of New York. For many years he was with Fox where he photographed many of the

best known Theda Bara features. In recent years he has filmed many Goldwyn productions including those of King Vidor and other prominent directors. Among his recent vehicles have been "Wild Oranges" and Rupert Hughes' "Excuse Me." Prior to joining Goldwyn, Boyle made an extensive cinematographic trip to the South Seas. Boyle went to Italy with the original "Ben Hur" company, he having been chief cinematographer for Charles Brabin on that production. On the expiration of his contract with Goldwyn with the filming of "Excuse Me," Boyle became connected with the F. B. O. studios where he is at work at present.

REPORT OF PROGRESS COMMITTEE

(Continued from page 9)

which has as its principal feature an adjustable device to regulate the feeding of the carbons.⁵⁹

The positive carbon is rotated at two revolutions per minute. A high current, high intensity arc lamp⁶⁰ for studio use produces a maximum candlepower of 100,000 or sixteen times that of the ordinary flaming arc.

Clay figures as actors for animated cartoon photography have been employed.⁶¹ Blue clay, free from gloss and not too wet, has been found best for this work.

Flat white and aluminum painted reflectors are generally used for the control of shadows in both studio and outdoor photography. A new reflector⁶² has been introduced in England which is prepared by coating a corrugated cardboard with silver foil covered with a transparent air proof varnish. High efficiency and lack of the objectionable features of metal mirrors are claimed for the reflector.

An innovation in motion picture photography that is expected to create considerable interest has been introduced in a recent pro-



A Fijian traffic officer, Suva, Fiji. Photograph by Len H. Roos, A. S. C., Educational Division, Fox Film Corporation.

⁵⁹ American Cinematographer, July, 1923, p. 13.

⁶⁰ American Cinematographer, April 1923, p. 14.

⁶¹ American Cinematographer, June, 1923, p. 7.

⁶² Kinematograph Weekly, Sup. Dec. 14, 1923, p. iii.

duction.⁶³ The new method was used in the lavish cabaret scenes, which had a water landscape in the background. In the foreground was a scrim stretched taut across the dancing floor. Upon this netting was painted a deep sea scene in rich colors. When the powerful studio lights were leveled on the scrim, the background of the set was blotted out. When these front lights went out the dance hall came into view, the floor being seen for the first time. When these lights went out the dancers were in silhouette, and the backdrop appeared to be pushed miles and miles away. The result was an interesting study in perspective and composition.

Another development has been made for this same purpose which recently has proved very successful. This consists in the actual construction of the upper parts of the set in miniature and placing them nearer the camera than the full lower portion of the set. This has not yet been used to much extent but in certain cases has proven deserving of more attention and development. One excellent example was the miniature of an elaborate cathedral ceiling with carved vaulting and pendants.

The use of a 90-foot steel boom with the camera platform constructed at its extremity is an innovation in filming large sets from almost any position in three dimensions.⁶⁴

A new method of taking close-ups during production has been successfully developed in a California studio. The method consists in equipping an extra camera with a special wide angle telescopic lens so that the camera may be set at the same distance from the set as the regular camera which is recording the normal action. These close-up shots not only save time in being taken simultaneously with the normal, but also give perfect continuity of action and expression when cutting from one to the other.

The technique and use of "glass work" is becoming rapidly improved and more widespread in studios in this country, both in the east and west. The "glass work" consists in photographing a scene through a large piece of plate glass some distance in front of the camera. The lower portion of the scene in which all action occurs is constructed as a set in the studio. The upper portion of the scene is painted on the plate

glass so that through the camera lens the painted portion is accurately superimposed on the true set and the division is not apparent. A fine example of this work is the Notre Dame cathedral in the picture of "The Hunchback of Notre Dame." This development is greatly enhancing the apparent size and grandeur of studio sets and will probably be used to even greater extent in the future.

A novel method of obtaining wave motion effects for close-ups in ship-board sets has been devised. It consists of a universally pivoted lever mounted low on a floor stand. One leg of the camera tripod is set into the short arm of the lever. The long arm of the lever is then moved up and down and sideways by hand, thus twisting and raising and lowering the camera to simulate wave action.

Talking Cinematography

In addition to the De Forest and Tykociner methods for reproducing the voice or music



The Maori way of greeting a friend (rubbing noses). This native girl's name is Rangi. She is a native of Whakarewarewa, New Zealand. The handsome chap on the left is Len H. Roos, A. S. C.

⁶³ Motion Picture News, Sept. 15, 1923, p. 1356.

⁶⁴ Scientific American, March 1924, p. 169.

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in synchronism with the projection of pictures which have been described in papers read before the Society⁶⁵ other methods introduced include an apparatus,⁶⁶ the operation of which is described as follows:

Light from an arc or gas-filled electric lamp is sent toward two discs revolving in opposite directions; the first disc has a series of holes along its edge, each of which transmits a strip of the image while the second disc has a serrated edge, formed of spokes which receives the light from the first disc, and passes it in flashes of audible frequency which are focused on a light sensitive selenium cell. The serrated disc overcomes the lag difficulties of the cell. Amplification and transmission of the impulses is then accomplished in the usual way. A similar double disc arrangement is used for the receiver except that a series of quick acting lamps wired to a commutator replace the holes in the sending set disc.

Another device⁶⁷ employs a recording instrument which uses a special Nernst filament lamp as its amplifier.

Fifteenth Anniversary of Rothacker Enterprises Held

The Rothacker organizations are celebrating the fifteenth anniversary of the founding of the first Rothacker motion picture enterprise by Watterson R. Rothacker in Chicago in 1910.

From the humble beginning when Rothacker rented desk space on the "Loop," Rothacker's affairs have grown until they include the big Rothacker plant in Chicago as well as the Rothacker-Aller Laboratories in Hollywood.

The past year saw a particular triumph in Rothacker's career as it marked the completion of "The Lost World," which First National produced by special arrangement with Rothacker. It was the latter's initiative which brought the fantastic Doyle story to the screen.

Faxon Dean, A. S. C., has concluded the cinematography on Maurice Elvey's current production for Fox.

* * *

Bert Glennon, A. S. C., has gone to Arizona on a lengthy location trip for the latest Paramount production he is photographing.

⁶⁵ Society of Motion Picture Engineers Transactions, May 7-10, 1923, pp. 61, 78 and 90.

⁶⁶ Exhibitors Herald, April 14, 1923, p. 87.

⁶⁷ British Journal of Photography, May 25, 1923, p. 319.

LIGHT SOURCES

(Continued from page 4)

with the aid of the special lamp setter which is standard equipment. It is very important that lamp reflector and condenser be kept perfectly clean and properly adjusted at all times.

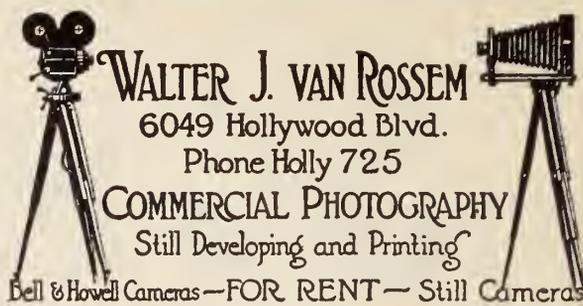
HIGH INTENSITY ARCS

The high intensity arc is a comparatively recent development as a light source for motion picture projection. It is a modification of the Sun Light Arc, (high intensity) now used in practically all the studios.

The positive carbon used in the high intensity lamp is so constituted that when burned at the *proper* current, it forms a deep crater. It is rotated to keep the crater uniform. The special flame material enters the arc entirely from the bottom of this deep crater where the impregnated core is exposed to the arc. The negative carbon is so arranged that the negative flame sweeps across the positive crater in such a manner that the light-giving vapor from the positive core is confined and compressed in the crater. By properly confining this vapor in the crater by means of the negative flame, the brilliancy of the vapor is greatly increased and we obtain brilliancies ranging from 500 to 900 candlepower per square millimeter. These are figures which were hitherto unknown.

Automatic Operation

The high intensity arc operation is entirely automatic, and will deliver over twice the amount of illumination compared to the ordinary carbon arc using the same amount of current. One can readily see that the high intensity arc is very economical in operation. It is also claimed that the actinic or ultra-violet quality of the light is the ideal light for projection. This I do not agree with, because it is a known fact that this particular quality in the light washes out certain tints in the film and plays havoc with natural color photography. The high intensity produces a steel blue light (actinic) which is necessary to good photography, but it is a different proposition, once the positive print has been developed, fixed, and is in a projector. However, the Bausch and Lomb Optical Company claim to have completely eliminated this objectionable feature with their relay condenser system which mixes the red and blue colors in the light beam and evenly distributes them at the aperture.



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It is common belief that the light rays from the high intensity arc contain more heat than those from the ordinary arc. In the transactions of the Society of Motion Picture Engineers, it is stated that the higher the absolute temperature of the light source, the shorter the predominating wave lengths and, therefore, the cooler the light. Consequently, high temperature arcs result in the least film burning at equal screen candle-power.

There is no doubt that with the correction of the few minor faults in the high intensity arc it will be the ideal projection light, particularly in theatres with excessively long projection distances.

REFLECTOR ARCS

The reflector arc is the newest development as a light source for motion picture projection. It does not seem to have found much favor with projectionists so far, probably because it is a radical departure from the usual optical set-up. the reflector arc, the condensers are eliminated and a concave reflector is used to collect the light and concentrate it at the aperture plate. The big claim made by the manufacturers of reflector arcs is that a 20 ampere reflector arc will equal a 60 to 75 ampere ordinary carbon arc, this being due to the fact that the reflector arc utilizes all the light emanating from the source. They also claim the field is perfectly clear and evenly illuminated, and the light has a pure white quality.

The only objections I can see in an arc of this type are:

First, accuracy in grinding reflector;

Second, difficulty in maintaining focus of reflector; and

Third, difficulty in maintaining proper arc length.

No doubt these lamps will be perfected, and should be ideal for the small theatre using 40 to 50 amperes.

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**A. S. C. Advocates Holding
60 Ft. per Minute Taking Speed**

John W. Boyle, secretary of the American Society of Cinematographers, sent the following letter to L. C. Porter, Society of Motion Picture Engineers, on the subject of camera taking speeds:

Society of Motion Picture Engineers,
Harrison, New Jersey.
Attention Mr. L. C. Porter.

Gentlemen:

Replying to yours of March 30th and April 15th respectively regarding our opinion as to the correct camera speeds, we wish to state that this matter has been discussed from time to time among our members and it is the consensus of opinion of our Society that the correct camera speed is sixteen pictures per second or sixty feet per minute. This speed has been used for years by practically all members of the profession, slower speeds only being resorted to, to secure certain comedy and dramatic effects. Over-speeding has only been used where certain directors have attempted to combat the excessive projection speeds which exhibitors have adopted to "turn over their audiences" in the shortest possible time. We are opposed to any taking speed in excess of sixty feet per minute for the following reasons:

1. Sixty feet per minute is sufficiently fast enough to produce smooth action under normal conditions;
2. Faster taking speeds than sixty feet per minute require that much more light to be used on sets, thereby increasing eye strain of actors. The use of additional electrical equipment, electricians and electrical energy increases cost of production, to say nothing of the disadvantages to the cinematographer in securing balanced lighting, it being a known fact that better lighting effects are obtained where it is possible to use a minimum of light;
3. Faster speeds than sixty feet per minute require the use of additional negative and positive footage, thereby increasing the cost for raw stock as well as the added expense of laboratory work—longer titles, etc.;
4. In recent years the leading manufacturers have improved their products, whereby we have obtained lenses with greater speed. These improved lenses make it possible to use less light and secure very pleasing effects. However, if we are compelled to in-

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BRUSSELS		BERLIN
		
VIENNA		BUDAPEST
		
ROME		GENEVA
		
MADRID		CAIRO
		
LISBON	ATHENS	
		
JERUSALEM	ALGIERS	
		
	ETC.	
		
	ETC.	

crease our taking speed we have the equivalent of the old methods—sixty feet per minute with the F.3.5 lenses.

We are glad that you have adopted eighty feet per minute as a standard projection speed and trust that you will be able to secure the adoption of this speed by the exhibitors, it having been our experience that productions photographed at sixty feet per minute can be projected at eighty per minute with satisfactory results.

We would suggest that your committee adopt some standard for "projection lights;" that is, an "arc intensity" of so many amperes for a given screen area and length of throw. Of course, we realize that different theatres require special equipment but certainly something can be done to obviate the necessity of making special prints for exhibition in the key cities as, we understand, is the case of some productions.

We hope that we have answered your questions, and if we can render further assistance along these lines, please call upon us.

Sincerely,
(Signed) John W. Boyle,
Secretary.

**S. M. P. E. Spring Meeting to Be
Held in Schenectady this Month**

The spring meeting of the Society of Motion Picture Engineers will be held May 18th, 19th, 20th and 21st, at the Hotel Van Curler, Schenectady, N. Y., according to an announcement from J. C. Kroesen, a member of the Board of Governors of the Society.

A tentative program of papers is as follows: "Machine Development of Negatives and Positive Film;" a paper by F. H. Richardson of a historical character; a paper by T. K. Peters on motion photography; "Static Marking on Motion Picture Film;" "An Improved Sensitometer Sector Wheel;" "Student Psychology;" "Educational Motion Pictures;" a paper by Roger M. Hill, U. S. Army motion picture service; "A New Reflectometer," by Dr. Frank Benford; "Artistic Utilization of Light in Photography of Motion Pictures;" "Manufacture of Special Motion Picture Lamps;" and "Colored Lighting Effects in Connection with Exhibition of Motion Pictures."



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Following are the focal lengths and prices:

Focus	Standard mount	Focussing mount
1 3/8 inches	\$40.00	\$47.00
1 9-16 inches	40.00	47.00
2 inches	43.00	50.00
3 1/8 inches	51.00	58.00
4 inches	64.00	71.00
4 3/4 inches	72.50	82.50

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International Congress of Photography to Meet in Paris

After a lapse of fifteen years an International Congress of Photography is to be held this year, June 29 to July 4, in Paris. The last congress was held in Brussels in 1910, and was a very successful meeting, attended largely by representatives from all nations.

The Congress will be divided into four sections: (1) Scientific; (2) Technical and artistic; (3) Historical and documentary; (4) Technique of cinematography (in connection with the Congress of Cinematography). An historical exhibition of photography and a centenary celebration of the beginning of photography will be held during the Congress.

At the request of the International Committee of the Congress, an Organizing Committee in the United States has been formed, the members being: F. F. Renwick, Dr. W. D. Bancroft, W. H. Manahan, E. J. Wall, Dr. H. E. Ives, Professor R. W. Wood, and Dr. C. E. K. Mees, chairman.

The Congress is especially anxious to obtain papers relating to the branches of photography with which it deals from workers in the United States. Offers of such papers can be communicated to C. E. K. Mees, Eastman Kodak Company, Rochester, N. Y., who will forward them to the secretary of the Congress or they can be sent direct to M. G. Labussiere, 5 rue Brown-Sequard, Paris, XV. The secretary is anxious to know at once what contributions will be available, though it is not necessary that the whole paper should be sent to him. The title and a brief abstract should, however, be forwarded at once.

Harold Hurley and Film Expert Speak before A. S. C. Open Meeting

Harold Hurley, a member of the publicity department of the West Coast Studios of the Famous Players-Lasky Corporation, spoke before the last open meeting of the American Society of Cinematographers on the subject of publicity as it related to the cinematographer. Mr. Hurley's talk was arranged by Victor Milner, A. S. C.

Gustav Dietz, an authority on panchromatic film, addressed the same meeting, and projected tests of panchromatic work. Paul Perry, A. S. C., arranged Mr. Dietz' lecture.



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New Features Announced on Latest Models of DeBrie Cameras

A current announcement carries the news of two new model De Brie cameras, these being a new De Brie high speed camera and the De Brie Parvo regular speed camera.

Innovations and improvements on these models required several years to perfect, it is stated, the new high speed model having a direct focusing device incorporated into it. The actual image is reflected through the lens. A speed indicator is also a recent addition, showing the number of pictures per second that are being taken. Various focal length lenses may be easily fitted and interchanged.

240 Per Minute

The new high speed camera will take 240 pictures per second—15 times the normal speed with results that are stated to be as steady as if the normal rate of 16 per second were used.

Model "K"

The Parvo camera, which is the De Brie model "K," is the newest creation in the regular De Brie camera. Among other features, it embodies an increased length of dissolve to 4½ feet, a counter which shows both the footage taken and the number of turns of the handle, as well as the number of single pictures taken. This has been built flush with the camera and does away with the large glass which, on the earlier models, was readily broken. In changing the lens, one screw is turned to bring the proper focusing and diaphragm scales together, due to a new method of gearing together both focusing and diaphragm bars. In the pressure gate is a new device which prevents the scratching of film.

Motor

The new camera may be used either with motor or six volt storage battery on any ordinary 110 volt circuit without unnecessary fittings.

The new cameras are being displayed by the Motion Picture Apparatus Company, 110 West 32nd St., New York, the sole agents in the United States and Canada for De Brie apparatus.

"Black Cyclone," the latest production of Fred W. Jackman, A. S. C., is ready for its premiere in New York City, according to word received from the East.

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Charles Stumar, A. S. C., is photographing "Where Was I?," starring Reginald Denny and directed by William Seiter at Universal City.

* * *

H. Lyman Broening, A. S. C., has concluded preparations and has begun the filming of the latest production to be made by J. P. McCarthy.

* * *

David Abel, A. S. C., is receiving congratulations on his cinematography in the Warner Bros. production, "Recompense."

Charles G. Clarke, A. S. C., has begun work on "Without Mercy," a George Melford production for Metropolitan Productions. The vehicle will be released through the Producers Distributing Corporation. Among those who will appear before Clarke's camera are Dorothy Phillips, Vera Reynolds and Conway Tearle.

* * *

Floyd Jackman, A. S. C., filmed "Black Cyclone," the latest Fred Jackman production that is to be given its premiere at the Capitol theatre in New York City shortly.



Native Maori girls making poi balls (used in "poi dance"), and weaving baskets. Photograph by Len H. Roos, A. S. C.



The famous beach at Waikiki, from the steps of the Moana Hotel. Photograph by Len H. Roos, A. S. C.



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the splendid service we received from our
eight Bell & Howell cameras which have
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They have stood up perfectly
and have given 100% results.

This means much in a production
of this kind.

Thanking you, I am,

Yours very cordially.

FN:SP



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- Abel, David—with Warner Brothers.
 Arnold, John—with Metro-Goldwyn-Mayer Picture Corp.
 Barnes, George S.—with Cosmopolitan.
 Beckway, Wm.—Europe.
 Benoit, Georges—with Hunt Stromberg Productions.
 Broening, H. Lyman—
 Boyle, John W.—with Wesley Ruggles, F. B. O. Studios.
 Brodin, Norbert F.—Frank Lloyd Productions, First National, United Studios.
 Brotherton, Joseph—
 Brown, Karl—with James Cruze, Famous Players-Lasky.
 Clark, Dan—with Tom Mix, Fox Studio.
 Clarke, Chas. G.—
 Cowling, Herford T.—Room 216-29 So. La Salle St., Chicago, Ill.
 Cronjager, Henry—with Famous Players-Lasky, New York City.
 Dean, Faxon M.—
 Doran, Robert S.—
 Dored, John—Riga, Latvia.
 Dubray, Joseph A.—with Peninsula Studios, San Mateo, Calif.
 DuPar, E. B.—with Warner Bros.
 DuPont, Max B.—
 Edeson, Arthur—with Sam Rork Productions, United Studios.
 Evans, Perry—
 Fildew, Wm.—
 Fischbeck, Harry A.—with Famous Players-Lasky, New York City.
 Fisher, Ross G.—with A. J. Brown Productions, Russell Studio.
 Gaudio, Gaetano—with Norma Talmadge, Joseph Schenck Productions; Metro-Goldwyn Studios.
 Gilks, Alfred—with Famous Players-Lasky.
 Glennon, Bert—with Paul Bern, Famous Players-Lasky.
 Good, Frank B.—
 Gray, King D.—
 Griffin, Walter L.—
 Guissart, Rene—Paris, France.
 Haller, Ernest—with Henry King, United Studios.
 Heimerl, Alois G.—
 Jackman, Floyd—with Fred W. Jackman Prods.
 Jackman, Fred W.—directing Fred W. Jackman Prods., Hal Roach studios.
 Jennings, J. D.—
 Koenekamp, Hans F.—with Larry Semon.
 Kull, Edward—with Universal.
 Kurrle, Robert—with Edwin Carewe, United Studios.
 Landers, Sam—
 Lockwood, J. R.—
 Lundin, Walter—with Harold Lloyd Productions, Hollywood Studios.
 Lyons, Reginald—
 MacLean, Kenneth G.—with Fox.
 Marshall, Wm.—with Carlos Prods.
 McCord, T. D.—with First National.
 Meehan, George—with Henry Lehrman, Fox.
 Milner, Victor—with Famous Players-Lasky.
 Morgan, Ira H.—with Cosmopolitan.
 Norton, Stephen S.—F. B. O. Studios.
 Overbaugh, Roy F.—New York City.
 Palmer, Ernest S.—with Fox.
 Perry, Harry—with B. P. Schulberg Productions.
 Perry, Paul P.—
 Polito, Sol—with Hunt Stromberg Productions.
 Ries, Park J.—
 Rizard, George—New York City.
 Roos, Len H.—with Fox Film Corp., (N. Y.) (Educational Div.) in Australia.
 Rose, Jackson J.—with Universal.
 Rosher, Charles—with Mary Pickford, Pickford-Fairbanks Studio.
 Schneiderman, George—with Fox.
 Scott, Homer A.—
 Seitz, John F.—with Rex Ingram, Europe.
 Sharp, Henry—with Douglas Fairbanks, Pickford-Fairbanks Studio.
 Short, Don—
 Smith, Steve, Jr.—with Vitagraph Studio.
 Steene, E. Burton—
 Stumar, Charles—with Universal.
 Stumar, John—with Universal.
 Tolhurst, Louis H.—"Secrets of Life," Microscopic Pictures, Principal Pictures Corporation.
 Totheroh, Rollie H.—with Charlie Chaplin, Chaplin Studio.
 Turner, J. Robert—with Fox.
 Van Buren, Ned—
 Van Enger, Charles—with Ernst Lubitsch, Warner Brothers.
 Van Trees, James C.—with First National.
 Warrenton, Gilbert—with Christie Productions.
 Westrom, Harold—New York City.
 Whitman, Philip H.—with Famous Players-Lasky, New York City.
 Wilky, L. Guy—with William de Mille, Famous Players-Lasky.
 Edison, Thomas A.—Honorary Member.
 Webb, Arthur C.—Attorney.

Meetings of the American Society of Cinematographers are held every Monday evening. On the first and the third Monday of each month the open meeting is held; and on the second and the fourth, the meeting of the Board of Governors.

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I am not too extravagant in my praise when I say it has assisted me greatly in my productions and I expect still finer results on my future pictures.

Most Sincerely,

DZ-dk

American Cinematographer

Published by the American Society of Cinematographers, Inc.



In This Issue :



Proper Screen Presentation—By L. E. Cuffe

**A. S. C. Member Visits King of Barwons—
By Len H. Roos, A. S. C.**

**Critics Laud Fred W. Jackman's Production
Assistant Cameramen's Club Is Founded**

PUBLISHED IN HOLLYWOOD CALIFORNIA

RELEASES

April 26, 1925, to June 1, 1925

TITLE	PHOTOGRAPHED BY
Playing With Souls	Hal Mohr
Sackcloth and Scarlet	Robert Kurrle, member A. S. C.
The Open Trail	Harry Neuman
Go Straight	Harry Perry, member A. S. C.
The Crowded Hour	J. Roy Hunt
Marriage in Transit	G. O. Post
Tearing Through	Not credited
The Gambling Fool	King Gray, member A. S. C.
Chickie	J. C. Van Trees, member A. S. C.
Reckless Courage	Ray Ries
She Wolves	Not credited
Riders of Mystery	Bert Longenecker
The Night Club	Peverell Marley
Friendly Enemies	Chas. G. Clarke, member A. S. C.
The Prairie Wife	J. R. Diamond
The Fool	Joe Luttenberg
Soul Fire	Roy Overbaugh, member A. S. C.
Wings of Youth	Ernest Palmer, member A. S. C.
Daughters Who Pay	Edward Paul and Charles Davis
Zander the Great	George Barnes and Harold Wenstrom, members A. S. C.
The Miracle of the Wolves	Not credited
Speed Wild	Billy Tuers
Ridin' Thunder	Harry Neuman
The Texas Bearcat	Lauren Draper
The Kiss Barrier	Ernest Palmer, member A. S. C.
The Shock Punch	William Miller
The Sporting Venus	David Kesson
Alias Mary Flynn	Silvano Balboni
Sell 'Em Cowboy	Wm. Nobles
The Talker	Arthur Edeson, member A. S. C.
The Fighting Sheriff	Allen Siegler
Border Intrigue	Walter Griffin, member A. S. C.
Black Cyclone	Floyd Jackman, member A. S. C.
Welcome Home	Karl Brown, member A. S. C.
The Teaser	George Barnes, member A. S. C.
The Crackerjack	Charles Gilson
Her Husband's Secret	Norbert Brodin, member A. S. C.
Easy Money	Ross Fisher, member A. S. C.
The Beautiful Sinner	Not credited.
The Meddler	Gilbert Warrenton, member A. S. C.
Baree, Son of Kazan	Steve Smith, Jr., member A. S. C.
The Fighting Demon	Wm. Marshall, member A. S. C.
William Tell	Not credited
My Wife and I	Not credited
Everyman's Wife	Not credited
The Price of Pleasure	Not credited
Any Woman	Ernest Haller, member A. S. C.
My Neighbor's Wife	Jos. Walker
Just a Woman	Not credited
Old Home Week	Alvin Wyckoff
Lena Rivers	Not credited
I'll Show You the Town	Charles Stumar, member A. S. C.

American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

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PROJECTION

Conducted by Earl J. Denison

Proper Screen Presentation

By L. E. Cuffe

High Intensity Arc is Considered. Careful Projection Repays Manager.

(NOTE—This article was written by Mr. L. E. Cuffe, who is in charge of projection at the Famous Players-Lasky West Coast studios. We will be very pleased to use any suitable article on projection from anyone connected with the industry.—Earl J. Denison.)

This is a subject that up to the present has had practically no development. Let us stop for a moment and realize what developments have taken place in the other branches of the motion picture industry, how thousands of dollars are spent on beautiful sets, research, high-salaried directors, the very best technical men and actors to produce a wonderful photoplay; and then the extensive cost of perfect machinery and skilled technical men and labor that is required in the finishing of this product so that an exhibitor may receive the very best article that money and skill can produce. Think of the enormous amount of money that is tied up in the production. It is then sold to an exhibitor—he pays, perhaps, a high rental and in turn puts it into the hands of (which is often the case) a man or projectionist that has very little technical knowledge of film.

The beautiful photography of the present day has taken years of constant experience and research to bring it up to this stage. The average projectionist perhaps looks at his screen six or seven times during the projection of the same number of reels. The manager knows little or nothing about projection, and the man he is paying to project his expensive program is either ruining him or making money for him. However, the manager doesn't realize this, and because his box office receipts fall off he thinks that his programs are very poor. He hasn't stopped to realize that perhaps it might be his presentation that is effecting the decline in his box office receipts; he is not educated to know good projection; he doesn't realize that the screen is the medium from which all the money in the industry is derived; he doesn't realize that his screen is too bright, too dull, that the screen is dirty, that his house is lighted wrong or that the mechanical condition of his machine is poor. The picture is jumpy and, perhaps, out of focus. His box office receipts will tell him all this if he is not educated to proper screen presentation. What is the result of all this? Nothing more than that it is the screen, the projected picture that brings the money to the industry. Everything finally and absolutely depends upon the projection of the individual picture on the screen to bring out those qualities that are so nearly lifelike and real, and to bring out that value that has been put into the production. When the man-

agers realize the secret of putting on their screens all that is actually in the film, then their box office receipts will directly correspond with the value that is in the picture.

This subject has been discussed in the past, but nothing of any real importance has followed. Recently a paper was read before the members of the Society of Motion Picture Engineers dealing with the difficulties of arriving at any standardization of screen brightness. However, at the end of this paper there was nothing arrived at in regard to any particular standard of screen brilliancy. In fact, it merely cited a number of different elements which would enter into the making of a standard—very difficult and of little use. I agree that there are so many valuable factors that it is a difficult problem, but I feel that by proper treatment an exceedingly great improvement upon the present conditions can be brought about.

For an example, the writer recently visited theaters in this vicinity and as far as he has been able to figure out there are no two houses alike in either screen brilliancy, auditorium illumination or class of screen used. For such reasons it has been impossible to make a picture look anywhere alike in these different houses. The answer to this is readily seen when we analyze the following which illustrates the exceedingly abnormal and varied conditions.

In two different theaters, both screens of the **same material and size, same optical systems in projectors**, same light source of equal amperage, and projecting prints of standard quality, in one house the throw is 185 feet—and in the other is 65 feet. It is plainly seen why the same print looks exceedingly different on the two screens.

This brings us to the point of what is most needed today for proper screen presentation. What is proper screen brilliancy? We all have pretty fair ideas, but what theater manager, what projectionist, who have been used to poor picture presentation, could say that they knew what screen brilliancy is necessary for a standard print, made and judged under standard conditions, so that it will look right during projection.

This lack of knowledge is one cause for the condition that exists on the west coast, where a standard print is supposed to look the same in all theaters. I have personally found a variation in the screen readings anywhere from

(Continued on Page 16)

A. S. C. Member Visits King Clyde of Barwons

By Len H. Roos,
A. S. C.

Aged Ruler Rents Film
Concession to Throne
to Swell Royal Coiffers.



Left—A close-up of King Clyde

Above—Len H. Roos, A. S. C., with the Camel driver at Bourke, N. S. W.

The only Black Opal mines in the world are located at Lightning Ridge, N. S. W., about 800 miles northwest of Sydney and completely off the railroad. They can be reached only by car and as my Australian assistant (surname Marshall, commonly called "Bill") claimed that the contraption he fondly calls a motor car would do the trip without trouble, we started off bright and early on Friday, March 27.

'Out-back' Country

We spent Saturday night at Nyngan, the beginning of the "out-back" country, where the picture theater is open every Saturday night at the Town Hall. A boy with a bell goes about the town and tells the inhabitants what's on. This is not the only advertising done by the theater, however, as they had one three-sheet and one one-sheet displayed in front of the Town Hall with wire netting covering them.

Goats and Paste

This is what one might term protective advertising, as the netting prevents the town goats from eating the paper to get at the sweet paste.

Power is developed by a small super-Diesel engine, and as nearly all the theaters in the country use mirror-arcs, they get a fairly good light on the screen with this small plant. The admission price is three shillings and three pence (about 78c) for the "chairs." The benches are cheaper. This



Hitching the camels at Bourke

is for the usual two features, a news and a comedy.

I don't think they figure any of the charge is for the music; at any rate, they should not. The best seats in Australian theaters are upstairs; at least, that is their opinion. Personally I am not sold on this idea yet and continue to watch the program from the lower floor.

Kangaroo Country

Sunday we ran close to kangaroos towards evening, but it was too late to photograph them, so we kept moving and reached Bourke Sunday night. We spent Monday working. Bourke is the starting place for the camel trains. About 18 camels form a train and haul freight into the interior on immense wagons. It takes 14 days to travel 174 miles with 10 tons of freight. The motor trucks will soon have this business, I think.

Outland Projection

The "Arcadia" theater at Bourke had a super-Diesel plant and a Powers projector with the grimmest lens I have ever seen and a shutter so out of time that it might be better off the machine. We cleaned the lens and adjusted the shutter with the result that the audience commended the projection in such a complimen-

tary manner that the manager wanted me to make a personal appearance—we left immediately for the hotel.

Old King Clyde

Brewarrina is 60 miles east of Bourke and it was near here that I was introduced to King Clyde, King of the Barwon Blacks. His Royal Highness gets the kingly salary of one shilling per week (24c) for kinging, so the ten shillings I gave him for exclusive cinematographic rights for the day no

doubt found their way into the royal treasury. King Clyde speaks very good English, doesn't remember how old he is, and, taken altogether, has a fairly soft job being king.

Black Opal Mines

We made the 105 miles from Brewarrina to Walgett in good time and found this town a real up-to-date country place. Thursday we left for the Black Opal mines at Lightning Ridge and got an interesting picture. The temperature was 114 degrees in the shade and as the accompanying photograph shows, there is very little of the said shade. One goes down the mine seated on a small piece of board attached to a thin steel cable for a distance of 60 feet. The shaft is about four by six feet and it not braced in any manner. As the small rectangular opening grows smaller on the way down one begins to doubt their good sense in attempting the descent. They have been known to cave in. At the bottom of the shaft you crawl into the drifts on your stomach. At least it was cool down there. Black Opals are, I think, the prettiest gems in the world and the more one handles them the more attached one becomes to their brilliant and ever-changing colors. I



Ros' assistant, William Marshall (not Billy Marshall of the A. S. C.), with a "Goanna."



King Clyde shares his throne with Len H. Roos, A. S. C., and enjoys an aging Yankee joke

was so taken with some I was shown that I dug down into the funds I am hoarding to purchase a Rolls-Royce to take home with me, and purchased some of the gems picked for the Wembley Exhibition. We finished at Lightning Ridge and drove north to Angledool, seven miles from the Queensland border.

Colorful Plumage

Toward evening in this country the air is filled with birds of brilliant colors. Every

kind of parrot and cockatoo is to be seen, as well as small birds with every color of the spectrum showing in their plumage. A short distance from Angledool we met a Goanna and after a great deal of work we got him out of a tree and photographed him. He is a poisonous reptile and I think Bill showed a great deal of nerve in handling him. The Goanna is protected by the government, as it destroys rabbits and other pests.

We made the trip back to Sydney without anything of interest happening, except that we burned out a big end bearing three times and finally took out the piston altogether and came the last 200 miles on five cylinders. Just as soon as I can get a new trip planned, we will leave for the interior again; this time for a long trip, for in spite of the heat, the bad drinking water, the mosquitoes and a thousand other pests, it is a wonderful country.



Camels and wagons ready for a trip into the interior.

Critics Laud Fred W. Jackman's Production

"Black Cyclone" Receives
Plaudits in Los Angeles
and New York Reviews.



Cinematography is Also
Praised. Floyd W. Jack-
man, A. S. C., Photographed.

BLACK CYCLONE," directed by Fred W. Jackman and photographed by Floyd Jackman, both A. S. C. members, has taken the critics by storm in its initial exhibitions at the Capitol Theatre, New York, and at the Rialto, Los Angeles, as is indicated by the following excerpts from reviews on the Jackman production which is being released by Hal Roach through Pathe.

"Black Cyclone" is eclipsing even the successes of Fred Jackman's production of Jack London's "The Call of the Wild," and his "Rex, King of Wild Horses," which also starred Rex, and were photographed by Floyd Jackman, A. S. C. It will be noted that the reviews are as elaborate as to the cinematography in the Jackman production as they are for the direction itself:

The excerpts follow:

Mordaunt Hall, New York Times—

The wild horses in "Black Cyclone" will not have to drag people to the Capitol this week, as the presence of these animals on the screen will undoubtedly make the journey to this theater a willing and pleasant one. "Black Cyclone" is an admirable picture which has been directed with studious ingenuity, and although horses are seen in the principal roles, there is never a dull instant in the narrative, which possesses its full quota of suspense and some delightful incidental comedy.

The manner in which the horses have been handled for the different scenes makes one forget that a camera was anywhere near at the time the scenes were photographed. One sees so much that is surprising, when one stops to think it over, that after a while one is so absorbed that it appears to be perfectly natural to witness stallions in the characters of a hero and a villain, a mare as a heroine and a mangy burro filling the comedy role.

The long shots as well as the medium ones are most compelling. In certain instances one wonders how the producers are ever going to catch the horses. . . .

We are informed that thousands of acres of Nevada's plains and hills supply the background for this picture, which was directed by Frederick Wood Jackman. It is presented by Hal Roach who also mapped out the story.

* * *

New York Sun—

As refreshing and invigorating as the wind which swept the plains where it was photographed is "Black Cyclone," now being unwound at the Capitol with Rex, the William S. Hart of the equine kingdom, as its four-footed star.

Rex is the flashing ebony horse that raced through the reels of "The King of Wild Horses" last season. He is a fine figure of an animal, a dashing, dynamic piece of horseflesh, and his performance in "Black Cyclone" reveals that he has made steady strides, or gallops rather, as an actor.

There are beautiful pictures of a herd of wild horses galloping over the plains in "Black Cyclone," pictures that are marvels of composition.

* * *

Harlow J. Peters, New York Telegraph—

If there were such a thing as a National Film Library whereby pictures of lasting worth could be placed, one shelf would surely be kept for Hal Roach's production for Pathe release of "Black Cyclone," which opened yesterday at the Capitol. "Black Cyclone" is the second starring appearance of Rex, the King of the Wild Horses, and again he proves that he not only has a fine screen personality, but is an actor of no mean power.

In this mechanical age pictures like "Black Cyclone" are simply invaluable in giving the cityite and the farmer who keeps horses only as something to drag ploughs with an impression of this majestic animal as he was created, and as he looks at his best. The camera shots of Rex and the other wild horses are simply magnificent; they are tremendously thrilling.

In fact, the whole picture is one thrill after another, with horse fights, long runs, and human doings mixed in.

* * *

Harriette Underhill, New York Herald-Tribune—

The happiness, trials and dangers of these horses were far more interesting than the usual human love pictures. And

(Continued on Page 18)

Camera's Part in Record Industrial Project

Cinematography Preserves
Perpetual History of Job
of Moving Mountains.

By Lurline Lyons

Cinematographer Ever Pre-
sent on Enterprise Requir-
ing 25 Years to Finish.



Left—Camera and films were "mushed" thirty miles over mountain tops on a sled drawn by a team of Alaskan dogs through snow which, drifted twenty feet deep, was otherwise impassable.

Right—Albert C. Smith, cinematographer, on great industrial project. (Photos by Smith.)

Film, projector and camera have come to play an important part in the ranks of the greatest permanent construction army of which history gives account. In its achievements, as it is accomplishing the world's largest construction project, the cinematographers have created a new sphere of the world's activities.

Among the towering peaks of the High Sierras of north-eastern portion of Fresno county, California, where the Southern California Edison Company is spending some fifteen or twenty million dollars more than it cost to build the Panama Canal, for harnessing the wild mountain torrents to the electric generator, I have been watching the new uses for the motion picture, which were never dreamed of in the pioneer days of pictures.

For Posterity

Up there among the peaks and cataracts and the canyons deep in the forests of pine and cedar, an army of workmen, which numbers at times as high as 10,000 men, has been toiling on the job since 1912, and it will not be completed until 1935 at the earliest. In this gigantic electric project, which has attracted the attention of engineers and scientific men all over the world, the cinematographer has preserved in thousands of feet of film every detail of the expenditure of millions upon millions of dollars. These films are now the wonderful book from which the engineers of the world read of the latest and most marvelous achievements of our country in the conflict of man with the forces of nature. It is this collection of films which will show the engineers who are now studying the problems of harnessing the waters of the Balkan

mountains in Europe and those of the Himalaya in Asia, just how the engineers of California go about it to perform the task that makes the building of the Panama Canal look insignificant.

For Amusement

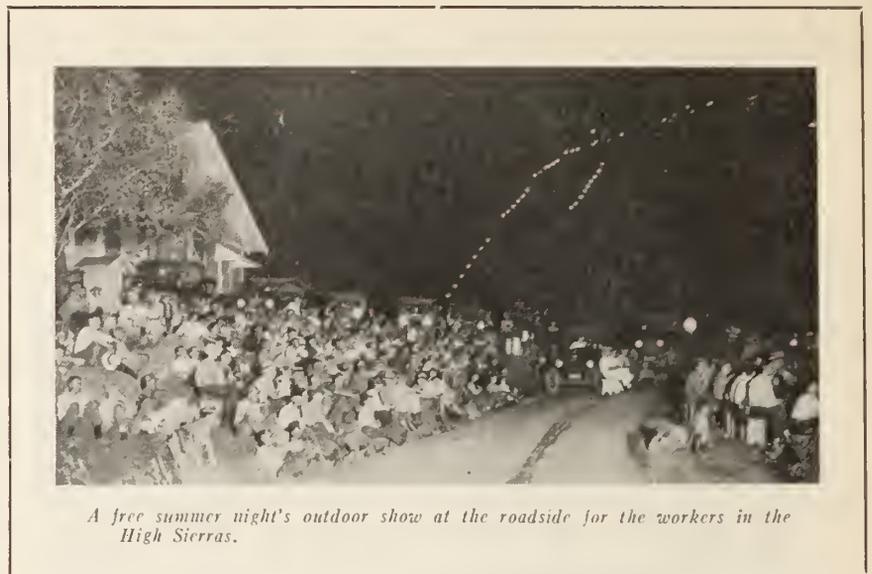
It is not only the filming of the work of impounding mountain rivers and making them into a chain of glistening lakes that lie embedded among the great peaks of the Sierra Nevadas; of building the greatest hydro-electric powerhouses west of Niagara Falls and of the key achievement—the construction of the fourteen-mile Florence Lake Tunnel under the Kaiser Range, which was completed last February—that the motion picture has been a factor in the famous project. A vast construction army of thousands of men spending years in the isolation of mountain camps have the same human desire for amuse-

ment that enters into the lives of those of us who reside in cities.

While the Southern California Edison Company was building its two titanic powerhouses in the San Joaquin canyon, and while the hard rock miners were gouging a fifteen-foot bore beneath the base of the great Kaiser mountain, there were some twenty camps of workmen scattered over the seventy-five mile construction front of the project. Once, and sometimes twice, a week in each of these camps the company provides a free motion picture performance for the workmen. A portable projector and a light automobile made the tours of these camps on regular schedules and gave the men an exhibition almost identical with those seen in motion picture houses in the cities and towns. It consisted of a news reel, a comedy and a drama and in many instances these films were shown in the mountain camps while they were yet running on their second release in the cities and often before they had been shown in the small towns of California. Some of these exhibitions were given in the open air during the warm summer nights.

Camera Outfit on Sleds

Once last winter when I accompanied a party of Edison officials which made the last and final inspection of the Florence Lake Tunnel, the



A free summer night's outdoor show at the roadside for the workers in the High Sierras.

cinematographers' outfit and films were conveyed 30 miles over mountain tops on a big sled drawn by a team of Alaskan dogs over a road drifted 20 feet deep with snow and impassable for horses.

Unique Subject Matter

When the Southern California Edison Company began the active phase of its Big Creek-San Joaquin River construction project, it employed Albert C. Smith, an old-time cinematographer, to film every big feature of the work. Mr. Smith's films show pictures such as have never been obtained before and can never be obtained again. Among them is the filming of the construction of gigantic dams across canyons, depicting the surging waters of mountain

streams welling up to the brink and forming beautiful lakes; of the first waters of rivers diverted miles from their original course, plunging through tunnels; of the placing of the heaviest machinery that has been constructed by the great foundries of the east and of all the human interest life centering about the activities of thousands of men engaged in pushing to completion a project which will supply enough electricity to multiply by three the present population of the Southwest.

In the Primitive

As a member of the party of newspaper writers who climbed the High Sierras during the latter part of February and made their way through storms and snowdrifts in order to be the first to go through the great Florence Lake Tunnel, I witnessed what impresses me as one of the most remarkable events in the whole history of the film. One mile below the dome of the great Kaiser mountain and three miles from each of the portals from which work was commenced on the Florence Lake Tunnel, a fully equipped electric light studio was improvised by Mr. Smith so that the dramatic picture of the last blast which completed the longest tunnel in the world could be filmed with every modern lighting device that enters into the equipment of

(Continued on Page 15)



During the long winter months, the film programs are held inside company halls

Truthful Advertising of Re-issued Pictures



National Vigilance Com-
mittee Sums Up Effects of
Misleading Film Billing.

This publication has always opposed misleading film advertising, and therefore considers interesting the following bulletin which has been issued by the National Vigilance Committee, of the Associated Advertising Clubs of the World:

Back in motion picture history, not so many years later than the nickelodeon era, the scenario departments of producing companies, both in the United States and in foreign countries, supplemented their current materials by preparing screen versions of classic literature. Hardly a famous author, from Homer to Kipling failed to have some part of his writings filmed and screened. For the time at which they were produced many of these were good pictures made but a few years ago have chosen. But when these are advertised today the following facts should be kept in mind by the distributor and the exhibitor:

A tremendous change takes place with each year in the quality of cinema photography, make-up, costuming, and the thousand details comprising modern production. Continuities have also moved with the times. The public knows this. Accordingly, a number of producers who have in their film vaults excellent pictures made but a few years ago have chosen to have the entire stories re-scenarized, re-enacted and re-photographed in order to maintain the high standard of their programs and those of their exhibitor patrons. Others, whose pictures have comprised actions too colossal for such re-production, have advertised the re-issue of such subjects as and for pictures which had been successfully exhibited at a previous date and were now being revived because of their great popularity. "Quo Vadis," "Cabiria," "The Birth of a Nation," "The Miracle Man" and "The Four Horsemen" are a few of the pictures which have been frankly offered and advertised by distributors and exhibitors as re-issues. The right of the public to know what it is buying has been respected and the good will of distributor and exhibitor promoted by advertising honesty.

Once more the trend of producers is toward classic or well-known authors and famous stories. Think of a big story and there is every likelihood that some producer has filmed it within the year or is engaged in filming it. Today such productions are lavishly made. A number of them have been filmed abroad in order to obtain actual and not plaster and papier mache settings. In order that the exhibitor may do the business with these pictures which will enable him to realize a fair profit,

his bookings of these releases is aided and backed up by enormous campaigns of national advertising so that an advance demand is created for his showing.

Nearly every time a big current production of such a story is announced some film of a similar subject matter or title is exhumed from the vaults or from the kerosene circuit or the non-theatrical field and offered to exhibitors apparently for the purpose of cashing in upon the reputation of the new picture. Vitagraph's "Black Beauty" production was closely followed by the resurrection of an old Edison release. Fairbanks' "Three Musketeers" publicity encouraged a group of film adventurers to advertise in a highly misleading and confusing manner an old film made by the late Tom Ince from the Dumas novel. Both of these exploitations were held unlawful by the Federal Trade Commission, acting in the public interest. More recently a state-right release of the old "temperance" stage play "Ten Nights in A Bar Room" was paralleled by the re-marketing of a film-vault relic of the same name. The nation-wide advertising of the Famous Players-Lasky Corporation for "The Ten Commandments" was simulated for a reassembled old non-theatrical picture entitled "Ater Six Days." Coincident with the nation-wide advertising of the Fox Film Company's "Dante's Inferno," a new and elaborate production, we find the advertising of a film of the same name made in Italy. This foreign picture was first released in the United States prior to the entry of many present day exhibitors into the theater business.

There is no legal reason why an exhibitor may not book and screen these film-vault relics if he wishes to do so. But if he exhibits them without disclosing affirmatively that they are re-issued pictures, he is throwing away the good will of his patrons. Ask the exhibitors who advertised "The original Black Beauty," "Douglas Fairbanks (and) The Three Musketeers," and the man who used Fox Film Company mats to advertise the Milano "Dante's Inferno" what such tactics cost him in the long run. One way to keep a theater out of the list of those houses which are forever changing hands is to advertise every booking truthfully and completely. Even the small merchants in our towns and villages are learning what older advertisers have found from sometimes bitter experience—that advertising the whole truth pays a dollars and cents dividend. Sound principles of advertising are not alone applicable to goods, wares and merchandise. They apply to the sale of

The EDITORS' LENS . . . focused by FOSTER GOSS

¶ Let's leave behind for a couple of moments the incessant worries and bickerings of the workaday film world and wander to the seclusion of California's High Sierras, and contemplate what motion pictures are doing on the top of the United States. Let's forget for the time being the vexations about story and star, costumes and exposures, box-office conditions and so on—and take note of what pictures are accomplishing where public appeal is not given a thought in production and where, on the other hand, regular features and short subjects are exhibited under the mountain stars without charge for admission.

¶ On other pages of this issue, there is given in a practical way an account of how cinematography is serving a company with imaginative officials—but let us pause here and pay tribute abstractly to the invention that is so versatile in its application as to make such service possible. With never a thought of exploitation, exhibition or public appeal, there are being made pictures which, as soon as the image is exposed, immediately become an invaluable record, a veritable visual library for future study.

¶ We wonder what people of the contemporary age would give to see workmen carrying materials and laying them in place for the great wall of China several centuries ago, of the artisans at their duties on the construction of the great pyramids, or on the buildings of ancient Greece and Rome? Those might have been uninteresting "industrial" pictures in their day, but what of the present?

¶ While we do not say that our descendants are going to be extraordinarily interested in the manner in which a hydro-electric system was constructed in 1912-1935, yet we do say that a comprehensive film report of a gigantic enterprise such as this will be a matter of information and definite precedent for engineers, not necessarily of the remote future, but for those of this era who may have the good fortune to be participating in similar undertakings during our own lives.

- ¶ Cinematography deserves a wider use in the industrial and commercial world than it now has. The idea should be abandoned that the invention of motion pictures is to serve only for entertaining purposes. Although, for various reasons, a long stretch of years was required before printing became a necessity rather than a novelty, the fact remains that typography has done incalculably much to accelerate the progress of the world. Let's not wait so long before we put cinematography to work to hasten the trend of the world, industrially and commercially, besides allowing it to entertain from Boston to Bombay. It will prove a capable, willing and intelligent employe.
- ¶ Strangely enough, in addition to this progressive application of motion pictures in the land of altitude, films are brought into play in their accepted roles—that of amusing and entertaining, many evenings each month being given over to programs, free of charge, for the employes. There is something to ponder over in this—as we believe that any of the old-timers, who were identified with mining projects in the same mountains, could testify. The situation of assembling scores of men in faraway fastnesses was no different then than now—men don't change inherently over a period of 75 years.
- ¶ We are told that the old mining camps weren't duplications of an earthly heaven. In fact, with gambling and what not for entertainment, they are supposed to have run in quite the opposite direction. However, the men worked hard and they had to have something for relaxation and entertainment, they tell us in justification. But the men on this gigantic construction job work just as hard, are living in the same outdoors as their grandfathers did. Yet they are not troubling themselves, their families and their employers with wholesale shooting, gaming and drinking for entertainment and recreation.
- ¶ What's the reason—could it be such a thing as the proper use of motion picture programs?

Unrivaled

In the important photographic qualities that cinematographers look for—uniformity, latitude, speed—Eastman Negative Film is unrivaled.

It does full justice to the photographer's skill.

And Eastman Positive Film carries the quality of the negative through to the screen.

Eastman Film is identified by the words "Eastman" and "Kodak" in black letters in the film margin.

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

Jay Robert Turner Chosen A. S. C. Member



New Member Has Wide Experience on William Fox and Many Other Productions

(Continued from Page 10)

Jay Robert Turner has been chosen a member of the American Society of Cinematographers, according to an announcement from the Board of Governors.

Turner has been a cinematographer at the Fox Studios in Hollywood for the past six years. He filmed all of the special Clyde Cook comedies, including the feature, "Skirts."

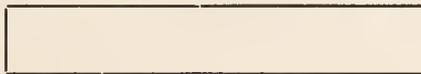
He filmed three specials with Lupino Lane, including the five-reeler, "Friendly Husbands."

He photographed a series of ten two-reelers directed by Jack Blystone, as well as a five-reeler directed likewise by Blystone.

He then shot a series of sixteen monkey comedies, with "Max," "Moritz" and "Pep."



Jay Robert Turner, A. S. C.,



His latest feature is the Fox production, "Darwin Was Right."

the best studios in Hollywood. It was a novel and weird sight to enter this great underground cavern drilled through the solid granite of centuries and find in its very heart a bank of high-powered electric lights and to see a battery of cinematographers filming the final act in the strang drama of giant powder and dynamite.

Not To Be Duplicated

These priceless films can never be duplicated for now the mighty San Joaquin river has been diverted 45 miles from its course and flows smoothly under the base of a mountain through a course which took five years to gouge out.

Yes, I have seen many wonderful acts staged in the studio and on location, but I never expect to see again the taking of so strange a picture as that one—a picture of an event which will go down in history as one of man's greatest triumphs over the blind forces of nature.

ON BOARD OF GOVERNORS



H. Lyman Broening, A. S. C.



Norbert F. Brodin, A. S. C.



Henry Sharp, A. S. C.

The American Society of Cinematographers' Board of Governors numbers among its members Norbert F. Brodin, H. Lyman Broening and Henry Sharp. Sharp was chosen to fill the term of Gaetano Gaudio, who was obliged to forego his duties on the Board because of the press of personal business affairs.

Proper Screen Presentation

(Continued from Page 4)

3.5-foot candles to 20-foot candles. It is an impossibility under these conditions to present a picture and get proper values. Ignorance regarding projection on the part of the managers allows high intensity arcs to be used where they mean ruination to the picture—as often is the case where another manager believes he will save by a Mazda equipped machine where the conditions are not satisfactory for this style of illumination, but demand a different sort.

Let us compare the three sources of illumination of the present time, considering at all times the optical conditions are the very best for each case, and see the effect on a standard print:

The High Intensity Arc

In 80 per cent of the houses using this as a source of illumination, the picture has been terribly over-lighted and usually has a very bad glare in the center of the screen, which in turn is very tiring on the eyes. Directly outside this hard, glary, blue-white spot in the center of the picture are visible all the colors of the spectrum from time to time as the image of the carbon revolves. This results in a print of standard exposure having a center that is completely washed out and over-lighted. All the soft tones and shadows are lost and a terrific hard, high-light predominates; and then to the outside and either side of the screen, the brightness gradually falls off to a lot of hard colors alongside this glare. Due to the color of this light, beautiful soft color dyes and tones, that are really beautiful under normal conditions, are all washed out, leaving neither black nor white nor a color—with the consequence that when the producer goes to view his production it appears entirely different from what he had looked at under normal conditions.

Another thing that has been found with the use of this style of arc is that the color on the film itself is bleached out in the center, leaving a print that is different and lighter in color in the center than the rest of the surrounding film. Then when the next exhibitor receives the print—an exhibitor who is using a standard carbon arc—he cannot understand the unevenness in the color of the print.

The very thing for which the theater was built, the presentation of motion pictures, is the least considered. Little do they care, it seems, whether the machines are supported from a rope and let down through the ceiling—just so long as they get something on their screen when it comes down. Gentlemen, think this thing over, check up on the number of theaters and it will be astounding just where the majority of projection rooms are located.

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Instead of being at right angles and level with the center of the screen, as so very few are throughout the country, you will usually find it away at the back and top of the house. It is, therefore, necessary to use a tremendous amount of light to get anything on the screen, but, alas, the very thing we pay to go in to see is so badly distorted, so badly lighted, that we all come out thinking it was a terrible picture. So, summing the high intensity arc up, we find that it came into prominence due to the lack of thought given the most vital part of a theater, the projection room; and, until they build theaters correctly, we shall have to put up with these abnormal and ridiculous picture presentations.

The standard carbon arc, on the other hand, if handled correctly, will give all the light that is necessary. An even screen may be maintained without any particular glare spots, and due to the light itself being somewhat softer, the projected picture becomes softer in its gradation of tones, and, therefore, is much more soothing to the eye. The real value of the quality of the photography is brought out—a better quality of depth is maintained, and instead of hard, glary high-lights, the desired soft tones are maintained.

For the smaller house and properly arranged projection room, the Mazda source of illumination has come into prominence. It is proving the most satisfactory of all lights. It is not only less expensive to operate but a

screen of absolute even brightness can be maintained with all the light that is necessary. Due to the evenness of this light we get a perfectly illuminated picture on the screen, which in turn reproduces the exact values of high-lights and shadows that were actually there at the time of photographing. This alone increases the relief and so we get a greater sense of depth to our picture. However, this class of projection hasn't proven so popular—which is due to the lack of men in the field who do understand it. It is most essential that a man be perfectly familiar with the laws governing optics in order to get this quality out of this Mazda projection.

At the studio we use nothing but Mazda projection. We maintain a standard screen illumination of between 6.5-7 foot candles, using screens of absorbing qualities and perfectly straight projection angle. All of our prints from the laboratory are judged on this basis. Every morning all our screens are tested for screen brilliancy and if one is found to be up or down at a stated amperage through our lamps, that amperage is increased or decreased accordingly until our standard of 6.5 foot candles is arrived at. By keeping all the screens at this standard, a print may be run in any of the projection rooms and it looks exactly the same.

The time is not far off before we shall be able to go into any theater and there see the same class of projection, but a great deal of

pioneer work has to be done. The sooner the theater managers realize how essential this is to proper screen presentation, the sooner will they realize that a man with proper technical knowledge of projection can correct these conditions, for money spent on the proper handling of the picture means money in the box office.

Truthful Advertising and Re-issued Pictures

(Continued from Page 11)

amusement just as much as they do to dry goods, hardware or furniture.

The theater owner who demonstrates to his patrons that they can always depend upon what they read in his film advertising, will attract and hold the regular, repeat patronage which is the backbone of picture house prosperity.

Critics Laud Fred W. Jackman's Production

(Continued from Page 8)

when Rex galloped up and allowed the man hero, whose horse had fallen under him, to mount him and save the heroine our excitement knew no bounds.

"Black Cyclone" is a mighty interesting picture. . . .

* * *

New York World—

The maintenance of this semblance of vicious freedom in three horses trained so remarkably to their tasks seems no small achievement. . . . For any with even the vaguest kind of friendly feeling for horses the picture can be generously recommended.

* * *

Variety—

An astounding film is "Black Cyclone," and one sure to cause a raft of talk before it gets far. With horses playing the leading roles and sustaining the principal interest, this one is full of laughs, thrills, drama and suspense. They don't come much nearer to filling the entertainment order. It is the second in which Rex has appeared, the first being "King of the Wild Horses."

It's a happy ending that brought a storm of applause.

The way these horses perform is little short of miraculous. Every move is life-like, natural and registers. That goes for Rex, Lady and The Killer, the latter being an especially mean-looking rascal, while Lady is a fine light mare. The humans in it don't have much to do but do it nicely.

"Black Cyclone" is a film to make movie history. Its achievements made in America are none the less important, for its vigorous and pulsing story, carried forward with directness and a minimum of footage, fairly shrieks aloud to those who ask for better films.



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* * *

New York Daily Mirror—

"Black Cyclone" swooped into the Capitol yesterday for a week's melodramatic stay, starring Rex, the "wonder horse," in a story written by Hal Roach, expertly directed by Fred Jackman.

This is the most notable production we have seen in many a day. It's intriguingly different.

If you go to the Capitol only to see Guinn Williams race Black Cyclone bareback up hill and down dale, you'll get the thrill of a lifetime.

* * *

New York Evening Post—

Altogether "Black Cyclone" is one of the most entertaining pictures we have seen for some time. It is not only a photographic feat, but also a moving drama of life in the wilds. The horse actors could give lessons to many a movie actor, with gratifying results. It is a relief to get away from the stereotyped "Western" rubber stamp for a change.

* * *

New York American—

A horse, superb in beauty and human in his interpretation of emotions that guide the human race. . . . The grace and intelligence of this animal shows up a lot of the simperings and sophistications of various human actors. Rex is not only a creature to be loved by all lovers of magnificent horseflesh. He can teach us something. "Black Cyclone" gets across to man, woman and child. . . .

* * *

New York Evening Journal—

The picture is well directed and told with a swing and charm to it all that is delightful, and the Nevada hills and plains are gorgeously photographed. There are also in the cast a pack of wolves, a rattlesnake, a bear, a tiger and a comedy burro that should have had a bigger role.

* * *

New York Graphic—

. . . affords something approximately new and novel in the way of a film production. . . . more than well worth seeing. In fact, you owe it to yourself to see "Black Cyclone" at the Capitol. It is a cinema treat.

* * *

New York Telegram—

. . . Rex certainly does as much heavy rescue work as a team combined of

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* * *

"Danny," Film Daily—

"Roxy" over the radio: "Black Cyclone" (Hal Roach production, Pathe Release) is the best picture I have seen in five years. Well, well! Anytime "Roxy" goes that far it means something. For many believe "Roxy" the premier showman of America. So we are going to see what "Roxy" raves about. And utter a few thinks of our own.

* * *

Orlando Northcutt, Los Angeles Express—

If you have a hankering to see a motion picture that is out of the ordinary and one that is packed with romance and thrills, glance at "Black Cyclone" at the Rialto. It is a truly remarkable film.

Rex, who performed so creditably as the equine hero of "King of the Wild Horses," is cast as the principal character in "Black Cyclone" and he carries the honors with the aplomb of a matinee idol.

Fred Jackman, who directed, has done one of the finest bits of directing the screen has to offer. The patience he must have exercised to gain the effects that appear in the finished picture is unusual.

The battle between Rex and the Killer, the fight with a pack of wolves trailing the nearly exhausted Lady, the stampede of the wild horses are photographic and dramatic highlights of a film that will unquestionably prove one of the greatest box office successes of the season. It is an animal picture far above the average.

Unprogramed but worthy special mention is the comedy relief, the Pest, a moth-eaten little burro with a cynical expression. He is a clown by right of birth. The introduction of this fellow is a clever bit. "Black Cyclone" deserves the highest praise one can visit upon it.

* * *

Los Angeles Evening Herald—

. . . the production is well put on and interesting throughout. . . .

CLUBBING OFFER

Subscribed for separately, Camera Craft and the American Cinematographer will cost a total of \$4.50 per year. As a special clubbing offer, both magazines may be had at a total price of \$3.40 per year.

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**French Preparing for Big Film
Production Program; Plans Given
By Rene Guissart, A. S. C.**

(Special Dispatch to the American Cinematographer)

PARIS, France, June 1.—At the present time there is in evidence quite a bit of production in Parisian studios. There seems to be a determined effort to get results; and, to this end, the best talent available is being used, even to the extent of enlisting those well-known in American production matters.

Edward Jose, the American director, is making a feature production from one of the most widely-read novels by Pierre Benoit, the famous French writer of "Atlantide." Betty Blythe is the star. They are on location in Palestine.

Jacques Bizael, formerly with Marshall Neilan, is the cinematographer on the Jose feature. Henri Meneissier is the art director. He was with Nazimova in America, and was art director for "Madame Sans Gene," which, starring Gloria Swanson, was made here.

Another big production, "Napoleon," is getting under way, and it is expected that two years will be required to make it. Abel Gance is directing.

McCormicks in Paris

John McCormick, western representative of First National, and Colleen Moore (Mrs. McCormick), have been in Paris for the past several days. Both are very fond of Paris, and Miss Moore is having a busy time visiting the Parisian shops. They will go to London before they return to America.

**E. I. E. S. to Hold Meetings in
A. S. C. Quarters in Hollywood**

The Electrical Illuminating Engineers' Society will hold its future meetings in the A. S. C. assembly rooms, twelfth floor, Guaranty building, Hollywood, according to an announcement from R. E. Delaney, secretary of the engineers' society.

This is by special arrangement with the American Society of Cinematographers, which was represented in the making of the arrangements by a committee composed of Gilbert Warrenton, A. S. C., and John W. Boyle, A. S. C.

The A. S. C. headquarters will become the official address of the Illuminating Engineers and will be assumed before the latter part of June. The E. I. E. S. is at present located at 1103 N. El. Centro, Hollywood, which was also the temporary quarters of the American Society of Cinematographers and of the **American Cinematographer** last year pending the completion of the A. S. C. offices in the Guaranty building.



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Carl Zeiss, Jena, have perfected a new lens—a Tessar, with a working aperture of f:2.7.

Combining the well known Carl Zeiss quality with the greatly increased light gathering power of f:2.7 means an objective for motion picture photography that is revolutionary—a lens that will produce results under the most adverse conditions.

Following are the focal lengths and prices:

Focus	Standard mount	Focussing mount
1 3/8 inches	.. \$40.00	\$47.00
1 9-16 inches	40.00	47.00
2 inches	43.00	50.00
3 1/8 inches	.. 51.00	58.00
4 inches	.. 64.00	71.00
4 3/4 inches	.. 72.50	82.50

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Assistant Cameraman's Club Is Founded; New Members Sought

The "Assistant Cameramen's Club" has been formed with a membership among the assistant cameramen in Hollywood, and, by special arrangement with the American Society of Cinematographers, the organization is holding its meetings in the A. S. C. assembly hall, 12th floor, Guranty building.

The idea of the assistants' club was conceived by Dan Clark, a member of the American Society of Cinematographers, who discussed the matter with his assistant, Rollin Platte, with the result that the new club was thereafter launched.

Charter members of the club include Rollin Platte, Jack Marta, Burnett Guffey, Milton Gold, Max Cohen, Will Walling and Stanley Horsley.

The following officers have been elected for the coming year: Gregg Toland, president; Burnett Guffy, first vice president; William Rheinhold, second vice president; Rollin Platte, treasurer; Will Walling, secretary, and Steven Bauter, sergeant-at-arms.

Membership in the organization is expected to attain 25 within the next several days. Information is available from Gregg Toland, Constance Talmadge unit, United Studios. All assistants are invited to join.

A. S. C. Members Make Film Record of Shrine Convention Festivities

A. S. C. members rallied to the support of the motion picture-electrical pageant at the recent Shriners' Convention in Los Angeles and filmed the gigantic electrical parade and events held within the Los Angeles Coliseum.

L. Guy Wilky, A. S. C., was in charge of arrangements for the A. S. C. Wilky worked in co-operation with Lou Ostrow, business manager of the pageant, and with Harry Brown and Frank Murphy, who, members of the Electrical Illuminating Engineers' Society, were responsible for the impressive electrical achievements which made the pageant a success.

Faxon Dean, Alfred Gilks, John W. Boyle and E. Burton Steene, all A. S. C. members, photographed the parade along the line of march, while King Gray, A. S. C., and Floyd Jackman, A. S. C., filmed the pageant within the Coliseum.

L. Guy Wilky, A. S. C., and Gilbert Warren, A. S. C., photographed the special sketch, "A Motion Picture Company on Location," which Fred Niblo directed before the throngs in the Coliseum.

Ira Morgan, A. S. C., is photographing "The Mystic," a Tod Browning production, at the Metro-Goldwyn-Mayer studios.



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John W. Boyle, A. S. C. to Film
 "Viennese Medley" for First National

John W. Boyle, A. S. C., will be chief cinematographer on the First National special feature, "Viennese Medley," which will go into production on June 15, under the personal supervision of June Mathis.

Boyle has already begun his First National connection, his resignation as cinematographer on J. Leo Meehan's production of Gene Stratton-Porter's "Keeper of the Bees," having been regretfully accepted by Meehan.

"Viennese Medley" will be directed by Curt Rehfeld, formerly associated with Rex Ingram. It is worthy of note that, of the members of the staff on the production, the following have sojourned in Vienna within the past several years: Miss Mathis, Rehfeld, Silvano Balboni, Boyle, Arthur Martinelli and Rene Guissart, A. S. C., who recently completed special scenes taken in the European city for the feature.

A. S. C. Member Successful in
 Difficult Assignment in Europe

Rene Guissart, A. S. C. has finished an important assignment for First National Productions, for whom he secured invaluable shots in Vienna, where he worked for a period of three weeks immediately after his arrival in Europe recently. Before proceeding to Vienna, Guissart remained only one day in Paris, where he has established headquarters for an extensive European, English and African cinematographic service.

The A. S. C. member encountered rigid governmental regulations in Vienna, but, due to his thorough knowledge of European film production and customs generally, he was able to cope successfully with the difficulties, and, in so doing, obtained for American films what doubtless would have been impossible to get otherwise. To do this Guissart improvised special automotive transportation, and, in addition, was able to procure the use of a police aeroplane for aerial shots over the city.

New Protective Optical Lens
 for Excessive Illumination

A new and darker shade of protective optical glass based on the well known Crookes formula, perfected in Germany, has been received by the Marshutz Optical Co., of Los Angeles. The new glass, known as No. 4 Crookes, is said to be especially valuable to persons exposed to the excessive illumination common to motion picture work, desert or marine exposures, according to Dr. S. G. Marshutz, the optometrist who secured the glass from Germany for the motion picture clientele.

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Harry A. Fischbeck, A. S. C., is with Famous Players-Lasky at the Paramount Long Island studio, photographing D. W. Griffith's production of "Sally of the Sawdust."

* * *

Charles Van Enger, A. S. C., has concluded the cinematography for a George Hill production for Warner Bros.

* * *

Fred W. Jackman, A. S. C., is away on an extensive tour throughout the West to gather material and scout locations for his latest production which he is to direct for Hal Roach release through Pathe.

* * *

Charles Rosher, A. S. C., has concluded the photography on "Little Annie Rooney," and is ready for preparations on the next Mary Pickford feature.

* * *

Jackson J. Rose, A. S. C., is at work on the latest feature to be photographed by him at Universal City.

* * *

Ernest Palmer, A. S. C., has finished shooting "East Lynne," an Emmett Flynn production for Fox.

* * *

Victor Milner, A. S. C., who has just completed the filming of R. A. Walsh's production of "The Wanderer" for Famous Players-Lasky, has signed a contract for a period of two years with Paramount.

* * *

J. D. Jennings, A. S. C., is filming Mrs. Rudolph Valentino's first production. Nita Naldi is featured and Thomas Buckingham is directing.

* * *

Dan Clark, A. S. C., is all primed to jump back into his cinematographic harness again, now that Tom Mix has returned from his triumphant tour to Europe and through the East.

* * *

Norbert F. Brodin, A. S. C., has at last returned from location in Canada where he was quartered for so long on location on Frank Lloyd's latest production, "Winds of Chance."

* * *

John W. Boyle, A. S. C., has returned from location at Santa Barbara where scenes were photographed for J. Leo Meehan's production of the late Gene Stratton-Porter's "The Keeper of the Bees."

Ernest Haller, A. S. C., is photographing "High and Handsome," a Garson production starring Maurice Flynn.

* * *

George Schneiderman, A. S. C., is filming "Thank You," a John Ford production for Fox.

* * *

Tony Gaudio, A. S. C., is still busy on the cinematography of "Graustark," the latest Joseph M. Schenck production starring Norma Talmadge.

* * *

John Arnold, A. S. C., is filming King Vidor's production, "The Big Parade," at the Metro-Goldwyn-Mayer studios.

* * *

H. Lyman Broening, A. S. C., has finished "Fighting Justice," a Harry J. Brown production, directed by Al Rogell and featuring Billy Sullivan, at the California Studios. Lyman at present is filming a Gardner production, directed by Jack McCarthy, at the California studios.

* * *

The sad news comes to Hollywood that Herford Tynes Cowling's father passed away in Virginia last month.

Cowling has returned to Chicago from Suffolk, and is again at work on the film which he brought back with him on his most recent trip around the world.

* * *

John W. Boyle, secretary of the A. S. C., addressed the open meeting of the American Society of Cinematographers on Monday, June first, on the subject of his cinematographic experiences in Europe.

Boyle rounded out a year of motion picture activity on the other side of the Atlantic as chief cinematographer with Charles Brabin and June Mathis on "Ben Hur," and supervised the building of laboratories and the installation of studio equipment for the production.

Boyle's lecture was a source of great interest to all members present.

* * *

At the A. S. C. meeting of May 18th, J. A. Ball, of Technicolor Motion Picture Corp., exhibited a reel of film involving a new process in preparation, this being handled by the Technicolor organization.

Faxon Dean, A. S. C., gave a lecture at the same meeting on magenta side arc diffusers. A general discussion followed the talks of Mr. Ball and of Mr. Dean.



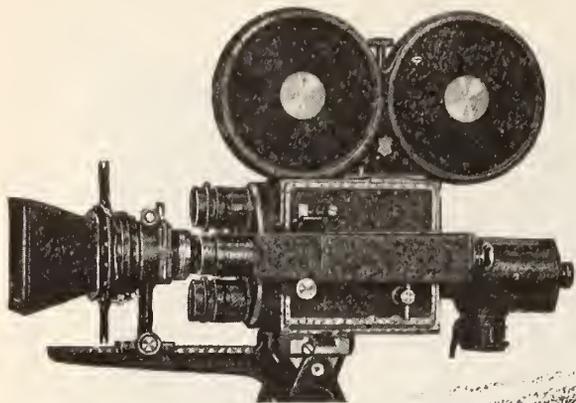
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December 9, 1924.

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Hollywood, Calif.

Gentlemen:

I am sending you herewith a photograph of
First National cameramen, taken shortly before
we left Hollywood.

The cameramen are (Left to Right): Cliff Thomas,
James Van Trees, Roy Carpenter, Joe Macdonald,
Ned Connors, T.D. McCord.

Yours very truly,

Fred Stanley,
Director of Publicity.

FS.J

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American Cinematographer

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In This Issue :



A. S. C. to Issue Annual of Cinematography
Gaetano Gaudio, A. S. C., Becomes Director
Optical Systems for Projectors—By Earl J. Denison
New Automatic Motion Picture Camera—
By A. P. Hollis

PUBLISHED IN HOLLYWOOD CALIFORNIA

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June 7, 1925, to June 28, 1925

TITLE	PHOTOGRAPHED BY
The Crimson Runner	Sol Polito, member A. S. C.
The Bandit's Baby	Ross Fisher, member A. S. C.
The Man Without a Conscience.	David Abel, member A. S. C.
The Little French Girl	Hal Rosson
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Wildfire	J. Roy Hunt
Scandal Proof	Not credited
Are Parents People?	Bert Glennon, member A. S. C.
Siege	Charles Stumar, member A. S. C.
The White Monkey	R. J. Bergquist
Tearin' Loose	Not credited
If Marriage Fails	Not credited
Don Q	Henry Sharp, member A. S. C.
Eve's Secret	H. Kinley Martin
The Adventurous Sex	Geo. Peters
The Necessary Evil	Geo. Folsey
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Anything Once	Chas. Murphy
The White Outlaw	Wm. Noble
Silent Sanderson	Sol Polito, member A. S. C.
Smooth as Satin	Silvano Balboni
The Making of O'Malley	Not credited
The Peak of Fate	Not credited
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Enemies of Youth	Not credited
The Human Tornado	Al Siegler and Lew Breslow
The Iron Man	Edward Paul
Lost—A Wife	L. Guy Wilky, member A. S. C.

American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

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PROJECTION • Conducted by Earl J. Denison

Optical Systems For Projectors

Article V

Various Optical Systems
Are Discussed. Merits of
Each Are Pointed Out.

Until recent years very little importance was attached to the optical system of the projector. Consequently, projection generally suffered a great deal optically. Fortunately, in the last few years, projector and lens manufacturers, as well as projectionists and theater managers, have come to realize that good, if not perfect, lenses are absolutely essential to high class projection.

Objective Lenses

Today lenses made by American manufacturers are second to none in quality and workmanship. There are several makes of high grade lenses on the market, but care and intelligence should be used in making a selection to insure the proper system for every setup. Sharpness, flat field, brilliancy, luminosity are the four essential qualities of an objective. A good objective must have sufficiently free diameter to accommodate the light beam. The lens tube or barrel should be well mounted in a substantial jacket, and closely and accurately fitted with a smooth and sensitive focusing arrangement, the spiral focusing arrangement being superior to the rack and pinion type.

While all the better grade lenses are free from astigmatism, chromatic and spherical aberration, it is well to test for these defects. A lens with astigmatism will not focus on vertical and horizontal lines. A lens with spherical aberration will have a different focus for central and marginal rays. This fault is commonly called "fade out" and is more noticeable in lenses of less than 4 in E. F. Chromatic aberration in a lens causes each color of the spectrum to have a different focus.

Testing

The only practical way for the projectionist to test lenses is through actual projection. A lens may be delivering everything but luminosity which would be due to two things—too small a free diameter or poor quality of glass. It is very hard to detect a slight variation in brilliancy with the naked eye and on the face of it may not appear of sufficient importance to go to the trouble of testing. However, economy in operation is one good reason, and another is that the film can be as easily over-lighted as under-lighted. The fact that the light passes through the film before it does the objective makes it well worth while finding out whether or not the lens is receiving and projecting the proper amount of light to the screen. I am at a loss to understand why

so many really high class projectionists continue to use excessively high amperage, utterly disregarding photographic quality. Photography simply consists of lights and shadows and between the high lights and deepest shadows are gradations that can positively be washed out if too much light is used.

Last night I saw a million-dollar picture in a theater that cost a million. There was an elaborate prologue and orchestra—and thirty cents worth of projection. So much light was used that the people in the picture looked as though they had used chalk for makeup. The center was a beautiful white circle with the edges nice and brown. The photographic quality of the picture was absolutely lost.

The only correct and accurate method of determining proper screen brilliancy is direct reading in foot candles at the screen.

Condensing Lenses

The history of condensing lenses is very much like that of objectives, the difference being that condensers are still far from perfect. The foremost authorities claim that condensers are correctly located in the optical train. It is a well known fact, however, that condensers have been almost a constant thorn in the side of projection until the past two or three years. Recently, considerable improvement has been made in condensers. The function of condensers is to gather as much light as possible, emanating from the light source, and concentrate it on the aperture of the projector as efficiently and economically as possible. Chromatic and spherical aberration, together with breakage, pitting and discoloration, etc., are some of the things that had to be overcome in order to have condensers that would sell from 50 cents to two dollars. The condensers generally used for projection are molded (not ground) and the best grade still comes from France. The condenser subject has been very well treated and practically every projectionist is familiar with condenser conditions and troubles, and any one of the several leading optical companies will be glad to furnish expert information on the subject.

However, I want to point out several of the condenser combinations now being used. Previous to the introduction of the Mazda and high intensity lights, the plano convex and meniscus were the only condensers used in projection. It was thought the meniscus type

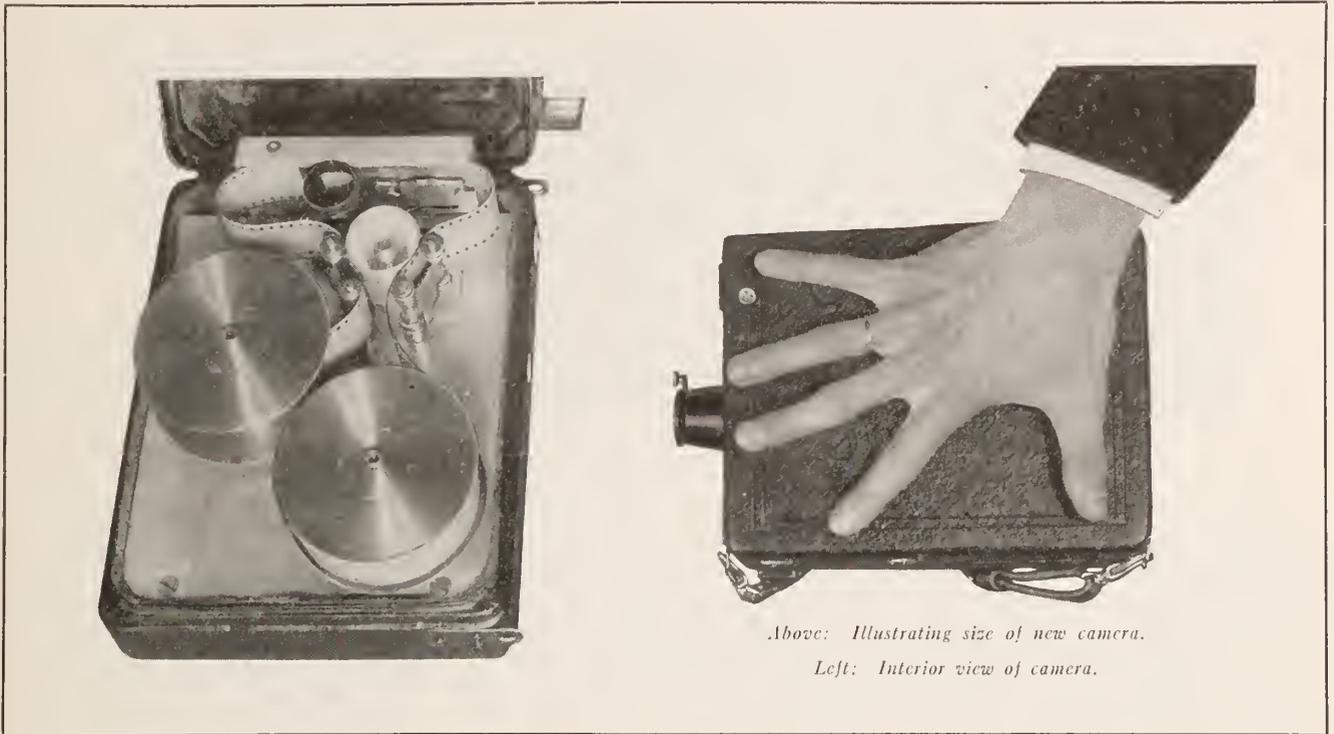
(Continued on Page 15)

New Automatic Motion Picture Camera

Spring Motor Is Source of Instrument's Operating Power. No Tripod Required.

By A. P. Hollis

Light Weight Is Striven For. Camera May Be Spanned by Width of Hand.



Above: Illustrating size of new camera.

Left: Interior view of camera.

A new automatic motion picture camera, operating with a spring motor, will soon be placed on the market. The camera is announced as promising a more adequate performance for cinematographers wishing a light, handy instrument for special service.

The new camera is being manufactured by The De Vry Corporation of Chicago, makers of the De Vry Portable Motion Picture Projector.

The specifications of the De Vry Automatic Camera include a 100-foot film loading capacity, with a 40-foot release, at each pressure of the button. No tripod is needed—although the universal screw socket for one is provided. It is designed as a hand camera—the whole box may be spanned by a man's hand. The weight is 8½ pounds, which is an important feature.

Pressed Steel Case

The case is of pressed steel,

in the new leather finish and is intended as a handsome addition to the tourists' indispensables. However, it is built for rough duty and for any amount of abuse.

The mechanism is a unit construction securely attached to this pressed steel case. The intermittent is of hardened tool steel and the bearings are bronze. Likewise all shafts are made of tooled steel operating in bronze bearings, and all gears are of machine cut steel. The idlers lock in place, assuring positive engagement of film, so that losing of the loop has been completely eliminated. As soon as the case is opened every detail of the film feeding mechanism is exposed to view. Mr. DeVry has striven for maximum simplicity in the matter of threading and accessibility. The speed is controlled by an automatic governor of the centrifugal type, securing uniformity, but permitting variation when desired.

Standard Devices

The entire metal construction insures absence of static and complete protection from climatic influence. While the camera is designed for straight motion photography, without the tricks and other accessories of the studio type, it is equipped with the standard mechanical devices of the professional camera.

There is a hand crank for trick work (stills), and three view finders: (1) direct view on the film for accurate focusing, close-ups, etc.; (2) direct view finder on top for fast work; and, (3) right angle view finder for ordinary use, whereby detective and other emergency pictures can be made direct from the hip. The footage indicator reads in feet and meters. The lens is standard F 3.5.

Light Weight

On account of its small size and light weight this camera

(Continued on Page 13, Col. 3)

Cinematography Now In Transitional Stage

Important Productions Stimulate Public Interest in Thoroughness of Camera Art.



Difference *between* How Work Is Done and Who Executes that Work, Is Shown.

THE position of cinematography, and hence of the cinematographer, in the existing production situation is a transitional one. For some seasons past, cinematography has been something more than just a series of moving photographs. The time has passed when the chief aim was to record motion photography that would really show, and show clearly, more or less, on the screen. With the advancing perfection of the profession—or art, if you will—cinematography was recognized to be capable of possessing varying degrees. It was realized that it could be other than either bad or acceptable. It was observed that certain types of camera work were adaptable to particular kinds of action, whether dramatic or comedy.

So the director came to specify the sort of cinematography that he wanted. It had to be more than clear reproduction of action on the screen.

Having emerged from the prehistoric morass, as it were, and assumed forms of its own, cinematography, in its own progress, became the gauge, if not the leader, of motion picture production generally. Its improvements and inventions made possible more authentic and more entertaining photoplays; until now creations which were regarded as impossible of materialization are brought to the screen with startling faithfulness and completeness.

Still, with all this, the cinematographer has remained something of a non-entity. True, it is generally known that there must be some one who takes care of the actual making of pictures—of course, the smallest part about making motion pictures is the mak-

(The following article, written by the editor of the American Cinematographer, appeared in the annual Studio Number of the Exhibitors Herald.—Note.)

ing of the pictures. But this attitude is changing.

It must change. The public, if its ever-present curiosity is respected at all, cannot and will not continue to go to view productions that are sheer pictorial marvels, and not wonder at least who is responsible for them. The more pictures like "The Ten Commandments," "The Thief of Bagdad," and "The Lost World" that are released, the greater will be the eventual curiosity of the trade, if not the public, as to who is responsible for such cinematographic creations.

Mind you, it is not stated that the foregoing will come to pass today or tomorrow, for

there are still such archaic prejudices which give the gospel that it is very mischievous policy to let anyone know anything about aught or anybody in the scientific, technical or cinematographic phases of the industry—for the reason that (if it is a reason) to do so would be to detract from interest in pictures generally. Such fears, however, fail to take cognizance of the difference between how a thing is done and **who did it**. What the cinematographer is interested in is the discontinuance of the tendency to cover up, if not to minimize, his achievements with the robes of the glory of someone else.

By the force of his own accomplishments which more and more will command intelligent (and that means inquiring) attention, the cinematographer is transcending his obscurity of the past. The period of passage, as with the directors several years ago, seems to be here now.

Rudolph Valentino Buys Debrie Camera for Own Personal Use

Rudolph Valentino has bought a Debrie camera for personal use, according to an announcement from the Motion Picture Apparatus Company, New York City, sole Debrie agents in United States and Canada.

That Valentino is enthusiastic over the new camera is evinced by the letter from him which the Motion Picture Apparatus Company is featuring in its advertisements.

Valentino's Debrie has been fitted with a Hoefner Iris, which is personally manufactured by Fred Hoefner in Hollywood. Hoefner is

well known as a precision mechanic, specializing on motion picture work. Others who have recently purchased the Hoefner iris are the Bell and Howell Company and H. Sartov.

A. S. C. to Hold "Ladies Night"

With Dinner Dance on July 18th

"Ladies Night" of the American Society of Cinematographers will be observed with a dinner dance at the Green Mill, Culver City, on the night of July 18th.

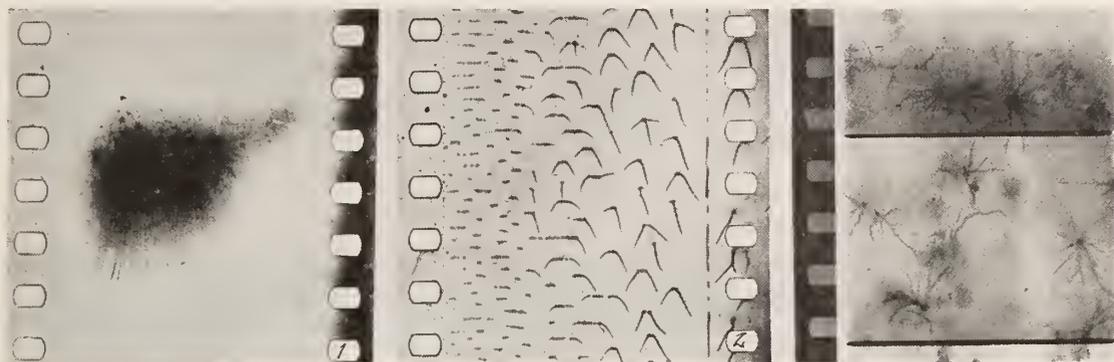
Reservations may be made by A. S. C. members for themselves and guests any time prior to five p. m., Thursday, July 16th, at the A. S. C. offices, Guaranty Building, Hollywood.

Static Markings on Motion Picture Film

Data as to their Nature,
Cause, and Methods of
Prevention.

By **J. I. Crabtree**
and **C. E. Ives**
(Research Laboratory
Eastman Kodak Company.)

From Transactions, Society
of Motion Picture
Engineers.



Figures 1, 2 and 3.

In motion picture photography the word "static" has a somewhat flexible meaning since it is used as a contraction for both "static electricity" or a "static discharge," and "static markings" produced on a developed emulsion by an electrical discharge at the surface or within the emulsion previous to development.

Although much information has been published on the nature of the markings produced by a spark discharge at the surface of a photographic plate,¹ very few data are available regarding the static markings produced on motion picture film during handling.

In the early days of the motion picture industry static trouble was feared both by cinematographers and laboratory workers, but as a result of improvements in manufacture, negative film of today has a relatively slight tendency to give static while our knowledge of methods of preventing static on positive film in the laboratory is such that static markings result only from incorrect handling. In spite of this, static markings are occasionally seen on the screen in the present day theatre, especially on news reels, which indicates a need for a better knowledge of the subject on the part of some workers.

It is the purpose of this article to record the experience gained in the Research Laboratory of the Eastman Kodak Company relative to the nature, cause, and methods of preventing static markings during the handling of motion picture film.

The Static Discharge

If a non-conductor such as glass, sealing wax, hard rubber, or a dry nitrocellulose film

is rubbed with an insulated dry substance, which may even be a conductor, the surface of the non-conducting material becomes charged with static electricity. In this sense, the term "static" indicates that the electricity "remains on" the substance.

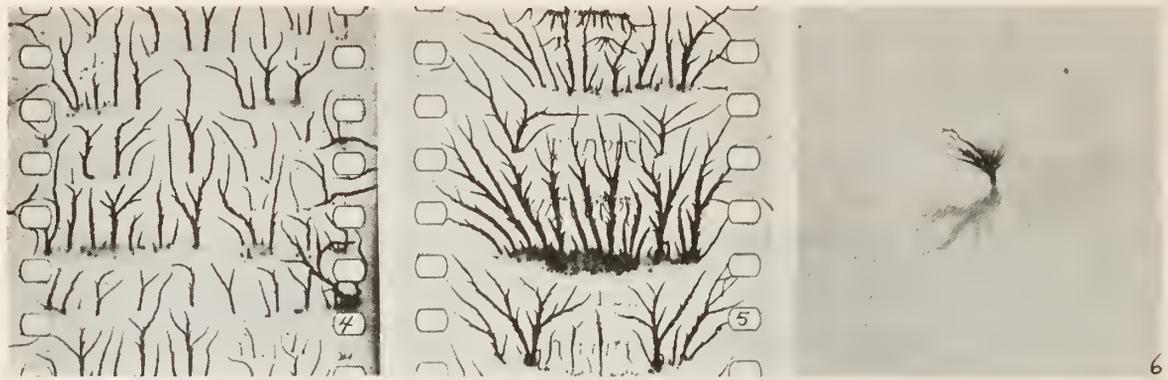
Precisely how the electricity is produced is not known but in the light of modern knowledge it may be assumed that the friction results in the removal of an electron from the atoms of one of the materials rubbed leaving it positively charged. It is generally stated that the sign of the charge generated by friction depends on the nature of the material rubbed and of the rubbing substance, although it is possible to charge a glass rod either positively or negatively by rubbing it very slowly or quickly with the same material. A substance may also become charged by virtue of being in close proximity to a second charged body when it is said to be charged by induction, while mere separation of two substances or variation of the distance between them may change their electrical potential.

A static electrical charge is of high potential, though the quantity may be small, and is fairly evenly distributed over the surface of a flat conductor but more or less unevenly in the case of a non-conductor depending on the uniformity of the generation. In other words, on a non-conductor such as film base the charge remains where it was generated unless it is subsequently removed in one of the following ways:

(a) By making the air a conductor by ionization (see later).

(b) By passing a strip of tinsel or some other conducting brush which is "grounded," across the charged surface.

1. "Figures Produced on Photographic Plates by Electrical Discharges," by U. Yoshida, *Memoirs of College of Science of Kyoto Univ.* 1916, Vol. 2, p. 105.



Above: Figures 4, 5 and 6.

Below: Figures 7, 8 and 9.



Since the earth is a good conductor of electricity and is considered electrically neutral, if the surface of a charged body is placed in electrical contact with it a flow of electricity takes place either from the earth to the charged body, or vice versa, until it is at the same potential as the earth when it is said to be discharged. Such a body in electrical connection with the earth is said to be "grounded."

(c) By placing a series of grounded metallic points in proximity with the charged surface.

(d) If the charge reaches a certain critical value and a substance at a lower potential is placed near it, an electric spark jumps across the air gap and the non-conductor becomes more or less discharged over a limited area. Discharges in the manner of "a," "b," and "c" are termed "silent" while "d" is known as a "disruptive" discharge, and is of the nature of lightning which omits heat and light and is capable of performing mechanical work.

Motion picture film consists of a nitrocellulose (or acetyl cellulose) base coated with a gelatine emulsion and unless specially treated, in the dry state both surfaces under suitable conditions will accumulate an electrical charge.

Under certain conditions motion picture film is seen to glow slightly in the dark when rubbed with the hand or when subjected to

other friction, but frequently on development no static markings are visible. A distinct spark, however, which is both visible and audible invariably affects the emulsion and produces a latent image of definite pattern.

It is an open question whether static markings are a result of the photographic effect of light rays from the discharge or whether they are a result of the direct effect of the spark on the silver halide grains in the emulsion in which case the markings would be closely related to abrasion marks, or those produced by mechanical stresses. Experience has shown that the speed of the emulsion has not as great an effect on the intensity of the static markings produced by a given discharge as might be expected.

Factors Affecting the Quantity of Static Electricity Produced on Motion Picture Film.

In motion picture work, electrical excitation of motion picture film is largely produced by rubbing. The quantity of electricity produced depends upon the following factors:

1. The Electrical Conductivity of the Substance Rubbed

A. The Conductivity of the Film Base.

If a good conductor of electricity such as a metal is insulated and subjected to friction,

New Lenses and Film Introduced In Past Year

Progress in Science and Manufacture Quickly Utilized by Cinematographers.



Advancements that Are Established Are Quickly Absorbed for General Film Usage.

CINEMATOGRAPHY has made great strides in the past and, in so doing, has blazed the trail for the progress of the industry as a whole; but, at the present time, if current indications are to be regarded as the criterion, it is on the threshold of even greater accomplishments. Productions like "The Lost World," which was completed during the past year, "The Thief of Bagdad" and "The Ten Commandments" offer proof of the fact that, by no means, has the curtain been entirely unrolled on what the ultimate in cinematography is to be.

Here and there, note those who observe closely, there are tendencies to use more freedom and to take greater hazards in the cinematographic aspects of production, with the result that pictures such as "The Lost World" are materialized.

And it is significant that whenever these demands have been made on cinematography—and that means on the cinematographers themselves—the profession has not been found wanting; but, instead, has raised its plane even higher—thereby thrusting the frontier of film production farther in advance than ever. True, it is, that this figurative frontier soon becomes as densely populated (in the form of productions made along the pattern of the pioneer)—as densely populated as an actual frontier, but that is nothing more than another testimonial of the flexibility of cinematography, a testimonial to its facility in almost immediately absorbing every forward step in the calling, no matter how revolutionary it may be.

The last twelve months have been particularly marked by the advent of new models of cameras and improved lenses,

(The accompanying article, written by the editor of the American Cinematographer, was published originally in the annual Directors Number of the Film Daily.—Note.)

with the consequent enrichment of picture making. Panchromatic film has come into wide use, there even being some companies which are concentrating almost exclusively on this form of stock. While naturally the bulk of improvements have their origin in this country, various innovations have bobbed up abroad, some of which give promise for practical things and some of which do not. However, Europe seems to be emerging from the lethargy, which was induced by and which hung over from the war, and it is conceivable that persistent efforts are being made to bridge the gap that heretofore has existed, cinematographically even more than otherwise, between domestic and foreign films.

Since its founding, the

American Society of Cinematographers has held up the torch for progress in motion photography and its efforts have met with great success—as successful in fact as the cinematography of 1918, when the A. S. C. was organized, is different from that of 1925. It is an interesting circumstance that "The Ten Commandments," "The Thief of Bagdad" and "The Lost World," mentioned in the foregoing as outstanding productions, cinematographically, were all photographed by A. S. C. members.

"The Ten Commandments" is the work of Bert Glennon, A. S. C. "The Thief of Bagdad" was photographed by Arthur Edeson, Philip H. Whitman and Kenneth MacLean, all A. S. C. members. "The Lost World" was filmed by Arthur Edeson, Fred W. Jackman, Homer Scott and J. D. Jennings, all of whom are A. S. C. members. In fact, First National induced Fred W. Jackman, director of "Black Cyclone" and other Hal Roach features, to leave the field of directors temporarily, so that his abilities could be availed of on the intricate phases of "The Lost World."

Arctic Expeditions Take Goerz

Stock on Trips to Polar Lands

The Amundsen and the MacMillan naval expeditions both carried Goerz raw stock in their Arctic exploration trips, according to an announcement from Ferdinand Schurman, president of the Fish-Schurman Corporation, sole distributors of Goerz raw stock.

John Arnold, A. S. C., has been signed on a long term contract at the Metro-Goldwyn-Mayer studios. Arnold has been identified with the Metro organization, since its establishment on the West Coast. For several years he photographed every feature in which Viola Dana appeared, this arrangement terminating only when Miss Dana left the Metro fold to free-lance.

The EDITORS' LENS . . . focused by FOSTER GOSS

A. S. C. to Publish Annual of Cinematography

Work to Be Innovation in Cinematographic Field. Will Contain Invaluable Material.



Intensive Plans for Annual Have Been in Formulation over Period of Two Years.

- ¶ The American Society of Cinematographers will issue an annual of cinematography, according to an announcement by the A. S. C. Board of Governors.
- ¶ The annual is planned to be an innovation in the cinematographic and allied fields, and will be replete with editorial contents which will make it indispensable to all who have even the remotest interest in cinematography. The publication will be of a practical nature, designed as a perpetual aid to cinematographers and to those whom they represent in production matters. According to the present outline, invaluable reference material will be between the covers of the annual, which is to be a volume that is workable three hundred and sixty-five days of the year.
- ¶ In order that the annual may be made an integral part of the *American Cinematographer* at no extra expense to the subscribers of the magazine, it will be combined with and take the place of the October number of this publication.
- ¶ After much consideration which has extended among A. S. C. members for no less a period than the past two years, it was decided that the American Society of Cinematographers provided the ideal source for such an innovation to emanate from, the Society being as it is the representative organization of the world's cinematographic geniuses. The annual offers another medium through which the constructive work, which the A. S. C.

has always sponsored, may be spread through even greater channels.

- ¶ Innumerable surprise details will be included in the annual—details which involve by far too many innovations to attempt to enumerate at this time. In short, the annual is to be the most ambitious project that the A. S. C., as publishers of the *American Cinematographer*, has undertaken to date.
- ¶ The American Society of Cinematographers has written letters to Cecil B. De Mille and to two motion picture publications, calling attention to the fact that published articles attempted to lay the credit for the filming of Mr. De Mille's "The Ten Commandments" to some one other than Bert Glennon, who, a member of the American Society of Cinematographers, was chief cinematographer on the important feature.
- ¶ Apparently the story, brief as it was, came from a common origin of publicity, and no doubt was the result of an inadvertency somewhere down the line. However, full credit is so rarely given the cinematographer that a really deplorable condition results when that credit is confused with that of some one to whom it does not belong.
- ¶ Inasmuch as Mr. Glennon has done such a remarkable piece of work on his part of "The Ten Commandments," the A. S. C. feels that it should leave no stone unturned in seeing to it that that credit is given to Mr. Glennon wherever possible—and that it is accorded him and not to some one to whom it does not belong. In the future, even more than in the past, the A. S. C. will be vigilant in such matters on behalf of its members who have worked hard and diligently to attain their ranking in the profession.

Assistants' Club Honors A. S. C. Members

All A. S. C. Members Made Honorary Members of Assistant Cameramen's Club.



Assistants' Fold in Healthy Increase. Instructive Meetings Every Week in Hollywood.

Entering the third month of its existence, the Assistant Cameramen's Club gives promise of a prosperous future; the membership list is constantly mounting and continues to increase at each meeting.

These meetings are held weekly in the assembly rooms of the American Society of Cinematographers, Guaranty Building, Hollywood. All A. S. C. members have been elected honorary members of the Assistants' organization, and are invited to be present at any of the meetings.

During the past month, Homer Scott, Dan Clark, Robert Doran and Victor Milner, all members of the A. S. C., have addressed the assistants on various cinematographic subjects. For the coming month other interesting talks have been arranged. One of the prime objects of the club is to sponsor an exchange of ideas and to stimulate discussions on cinematography among the members, all of whom will thereby benefit. Aside from the benefits outlined in the foregoing, the club presents numerous practical advantages, inasmuch as it offers a point of centralization where experienced assistants are available to cinematographers and producers. The membership entrance requirements of the club are such that only experienced assistants are permitted to join.

Many of the members, in fact, have had extensive experience on the second camera, while almost all count still work among their qualifications. Information concerning the available list of the assistants may be obtained through the A. S. C. offices in the Guaranty Building.

All of the larger studios are

OFFICERS OF ASSISTANT CAMERAMEN'S CLUB

Gregg Toland,
President.

Burnett Guffey,
Vice President.

William Reinhold,
Vice President.

Max Cohen,
Secretary.

Roland Platt,
Treasurer.

Steven Bauter,
Sergeant-At-Arms.

Headquarters at the American Society of Cinematographers offices, 1219-20-21-22 Guaranty Building, 6334 Hollywood Boulevard, Hollywood, Calif.

represented among the membership of the assistants, who, however, number many who work with free-lance cinematographers.

* * *

Notes of Interest Among the Assistants

Robert Rhea, of the Famous Players-Lasky camera department, was initiated last week. Latest reports are that he is convalescing and will be able to get back on the job soon.

* * *

Bill Walling was seen on the beach last week making pub-

Dan Clark, A. S. C., who conceived and put into motion the idea of the Assistants' Club.

licity stills of George O'Brien. This is a good angle—pick out an actor that is a publicity hound and make every day a vacation.

* * *

The secretary claims that he has already derived much benefit from the assistants' club. Before joining, he could typewrite only with one finger. Now he can use two—at the same time.

* * *

It is announced that the initiation fee will be advanced shortly. Those who wish to join are urged to do so at once, and thereby avoid the increase.

* * *

Three members of the Tom Mix company, Roland Platt, Griffith Thomas and Curtis Fetters were present at the last meeting, and report that they are busier than ever since Mix has returned from Europe.

* * *

As H. Lyman Broening, A. S. C., is wont to remark when contemplating the activities of Day and Night Productions, Inc.: "Come on, let's go. We started this picture yesterday. We've worked all day; we've worked all night; we've shot 94 scenes, and still we're three days behind."

* * *

While working on location several days ago, Burnett Guffey had the misfortune to slip and fall, striking his head on the corner of a reflector and sustaining a painful scalp wound. Some of the remarks, which were overheard among the company, suggested that Burney's close relation to the bovine family was all that saved his skull from being fractured. Be that as it may, Burney was back on the job the next day as per usual.

Tony Gaudio, A. S. C. Becomes Director



A. S. C. Member Starts
Direction of First Pro-
duction with Big Cast.



Gaetano Gaudio, A. S. C., who is directing special feature production with big cast.

istic interest in advancing talent, is watching closely the results of Gaudio's entrance into the directorial field.

Gaudio is a veteran among cinematographers, his experience dating back to the pioneer days in New York City. He has long been regarded as an ace in the profession, and, for the past several years, has been chief cinematographer for the Joseph M. Schenck productions starring Norma Talmadge.

The highest honor at the disposal of the cinematographers was accorded Gaudio when he was elected president of the American Society of Cinematographers for the year 1924-1925.

* * *

Victor Milner, A. S. C., will next photograph "Lady Luck," a Paramount production per-



Alice Lake, who stars in feature that is being directed by Gaudio.

Gaetano Gaudio, a former president of the American Society of Cinematographers, has entered the field of directors.

Gaudio is directing a Waldorf special feature production, with a cast including Alice Lake, Gaston Glass, Alma Bennett and Tom Ricketts. Sam Landers, A. S. C., is photographing.

Gaudio's direction of the Waldorf production does not interfere with his relations with Joseph M. Schenck productions. He continues as chief cinematographer for Norma Talmadge as heretofore, and will film her next feature.

Friends of Tony, however, state it is only a question of time before the A. S. C. member turns his entire attention to direction, although his arrangements with the Schenck organization require that he continue to photograph Norma Talmadge vehicles as already scheduled. It is said that Schenck, with his character-

Hollywood Transplanted In Parisian Hostelry

(Special Dispatch to the American Cinematographer)

By Rene Guissart, A. S. C.

PARIS, France, July 1.—The lobby of the Hotel Crillon Place de la Concorde here has assumed all the aspects of Hollywood, since numerous film celebrities who are in Paris at present are making the hotel their headquarters.

Jack Pickford, Nazimova, Betty Blythe, John McCormick and Colleen Moore (Mrs. McCormick), Jack Dempsey and Estelle Taylor (Mrs. Dempsey) have all been here within the past month.

It is stated here that Jack Pickford may make a production while abroad.

The Betty Blythe company is back from location in Palestine, where it was for some time.

sonally directed by R. A. Walsh. The cast will include Buster Collier, Greta Nissen, Marc McDermott and Lionel Barrymore.

* * *

Reginald Lyons, A. S. C., has been on vacation at Big Bear Lake, prior to beginning photography on the next Buck Jones production for Fox.

* * *

New Automatic Motion Picture Camera

(Continued from Page 5)

is announced as a boon to the news reel man, for whom it may be an inseparable companion, and to theater men desiring to add the local appeal to their programs. Of course, it has a special appeal to tourists, sportsmen, athletes, school, church and lodge members. The price is surprisingly low for an instrument of this quality. Considering the highly tempered and tooled metals of which this camera is made, and the precision of its construction, with ordinary care it should last a life time, the manufacturers announce.

Nothing else will do

Constant uniformity, abundant latitude, ample speed, are the qualities that cinematographers demand of negative film—nothing else will do.

Superiority in all three qualities is the requirement at Kodak Park where Eastman Negative Film is made — here again nothing else will do.

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

Optical Systems for Projectors

(Continued from Page 4)

would improve conditions (and no doubt would if they could be properly used), but they did not last long. The standard 4½-in. diameter plano convex is still used generally with the pure carbon arc. The tungsten filament light presented another condenser problem as it was found that with plano convex condensers there was required very fine and almost constant adjustment of lamp and reflector to keep filament shadows out of the screen.

This trouble was finally eliminated by introducing a new unit, using a single prismatic or corrugated condenser which necessitated bringing the lamp very close to condenser within about 7 inches of the aperture. This type of condenser gives a very uniform distribution of light.

Recently a new condenser system for Mazda has been introduced which uses plano convex condensers, but the rear or collecting lens has a larger diameter. These condensers require a special mount.

I have been told by a number of projectionists that this system is superior to all other for Mazda and shows a big gain in light. The writer recently witnessed a demonstration of a new Mazda unit (now being perfected), which delivered 16-foot candles on an 18-foot screen at 140 feet. It was accomplished entirely by a new optical system. A standard 30 volt, 30 amp, 900 watt lamp was used.

The high intensity arc seems to have presented the greatest condenser problem of all. It appeared almost impossible to get rid of the steel blue ghost in the center of the screen with plano convex condensers. Very recently the Bausch & Lomb Optical Co. brought out a relay condenser system that has a small condenser at or near the aperture. They claim this system so mixes the red and blue colors and distributes them that the ghost is entirely eliminated. I suggest that every projectionist having ghost trouble with high intensity arcs investigate this condenser system.

The answer to this article is—be sure that everything else is right; then check your optical system.

CLUBBING OFFER

Subscribed for separately, Camera Craft and the American Cinematographer will cost a total of \$4.50 per year. As a special clubbing offer, both magazines may be had at a total price of \$3.40 per year.

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pay cash. Write Bert Glennon, A. S. C.**



Frank B. Good, A. S. C., who is making preparations for the filming of the next Jackie Coogan production on which, as heretofore, he will be chief cinematographer.

Frank B. Good, A. S. C., Getting Ready to Film Next Coogan Picture

Frank B. Good, A. S. C., will resume his position as chief

cinematographer for Jackie Coogan productions with the beginning of the latest feature starring Jackie Coogan under the new contract at the Metro-Goldwyn-Mayer studios.

Good has been chief cinematographer on all the important Coogan productions for several years. Among these features have been "A Boy of Flanders," "Long Live the King," "Little Robinson Crusoe" and "The Rag Man." The forthcoming Coogan vehicle will be based on a story written by Willard Mack. Good has just finished the filming of two productions starring Elaine Hammerstein and Dorothy Revier, respectively.



Floyd Jackman, A. S. C., who is chief cinematographer on the productions directed by his brother, Fred W. Jackman, A. S. C. Critics are also praising Floyd's part of the success in "Black Cyclone".



Static Markings on Motion Picture Film

(Continued from Page 8)

an electrical charge is generated which distributes itself more or less evenly over the surface, depending on its shape, and if the metal is grounded by connecting to the earth, the whole of the charge flows away. In view of this tendency of the electricity to distribute itself over the conductor, it is difficult to generate a charge of sufficiently high potential to produce a disruptive spark on discharging. In the case of a non-conductor the charge remains where it was generated and if grounded at any one spot it is discharged only locally.

Therefore, if the conductivity of a substance is increased it has less tendency to develop a high potential locally, that is, there is a close parallelism between the electrical conductivity of a substance and the propensity for it to give static discharges. This relation is seen in the comparative tendency of a dried film of gelatine emulsion, motion picture negative film base, and ordinary nitrocellulose base, to generate static electricity. The surface electrical conductivity of the materials is roughly in the order given and the tendency to produce static in the inverse order.

Although a strip of comparatively dry gelatine emulsion will generate static, the quantity produced is so slight as compared with that produced under the same conditions on the film base as to be of negligible importance in practice, so that it is usually only necessary to consider the film base.

By special treatment of the film base its conductivity may be increased to such an ex-

tent that its tendency to generate static is very much less than the untreated base.

Since gelatine and a gelatine emulsion are much better conductors than film base it would be expected that double coated motion picture positive film such as is used in subtractive color photography, and gelatine backed film such as non-curling roll film would have a much less tendency to generate static than untreated nitrocellulose film base, and this has been found to be the case. The film conductivity can also be increased and its tendency to generate static thereby decreased by increasing the moisture content as described later.

B. The Conductivity of the Rubbing Substance.

If the rubbing substance is a good conductor and is grounded, the charge is removed as quickly as it is formed. It is important, therefore, from an anti-static viewpoint, that any substances which come into contact with motion picture film should be good conductors such as metal, while non-conductors such as hard rubber and glass should be avoided. Modern camera and motion picture machinery manufacturers have recognized this fact and are now constructing sprockets, rollers and camera gates as far as possible of metal.²

2. The Amount of Friction.

In a given apparatus the greater the friction between the film and the parts of the apparatus the greater is the quantity of static

² "Static Trouble with the Kinematograph and Means for Its Elimination," by A. S. Newman, Phot. Jour., June, 1923, p. 262.

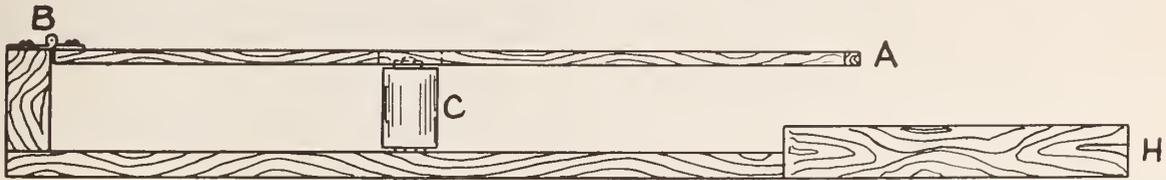


Figure 10.



Figure 11

Below: Figure 12, Roll Holder for Rack Winding.



Side Elevation.

liable to be produced. The degree of friction is determined by the roughness of the rubbing surfaces, the pressure applied and the relative speed of travel of the two surfaces. Therefore, in the camera and printer gates, the pressure should be a minimum and all parts should be as smooth as possible. In certain camera gates where the emulsion presses against the metal tracks more or less of the film emulsion tends to scrape off and accumulate as a hard mass on the gate, preventing the free travel of the film. In such a case there is a great tendency for static markings to be produced. By slightly lubricating the tracks with oil or grease as described later such gate trouble is avoided and static is eliminated. High speed of movement of the film is also responsible for static trouble when making slow motion pictures in the camera and when printing at an excessively fast rate, though with Eastman negative film, camera static even under such severe conditions is rarely encountered. In the case of printer static either the film should be humidified further or the speed of the printer reduced.

3. The Conductivity of the Air.

Dry air is one of the best known insulators of electricity. However, certain substances such as radio-active compounds, a red-hot wire or a flame are capable of ionizing the air and making it a conductor. If a charged body is placed in such a conducting atmosphere it tends to discharge by virtue of neutralization of its charge by the oppositely charged gas molecules and electrons in the ionized air attracted to it. For a similar reason, ionized air tends to prevent the accumulation of a charge on a substance during excitation by friction. The ionizing effect of a flame or a radio-active substance can be demonstrated by placing a charged electroscope close to them when it will be discharged immediately. Some camera workers have utilized the ionizing effect of a flame by

fitting a small alcohol lamp below the camera and conducting the products of combustion into the camera chamber. In addition to the ionizing effect of the flame the products of combustion of the alcohol contain water vapor which humidifies the film and renders it a better conductor of electricity.

In the printing trade it is also customary to remove the electrical charge from the sheets of paper traveling through the press by passing them immediately over the surface of a gas flame.

Radio-active compounds are of questionable value in preventing motion picture static because of the expense involved in producing sufficient ionization, while the emanation fogs a photographic emulsion.

Another method of ionizing air is by means of X-Rays. The air in the vicinity of an X-Ray tube is strongly ionized and a charged electroscope placed in the vicinity is immediately discharged. In order to test the anti-static effect of such ionized air an electric fan was arranged so as to blow the air in the vicinity of an X-Ray tube to a spot several feet away in a direction at right angles to the path of the X-Rays, and attempts were made to excite the base side of a strip of motion picture positive film placed in the air current but without success. On cutting off the current from the tube the film was easily excited. This experiment would suggest the possibility of inserting an X-Ray tube in the airducts of a motion picture laboratory, though it is questionable whether the scheme would be practical on account of the large tube currents necessary to produce sufficient ionization, and the danger of fogging sensitive photographic materials by the X-Rays unless carefully screened.

Humidification of the air is a sufficient and practical means of increasing the film con-

(Continued on Page 18)

ductivity and has proved effective and satisfactory in practice.

¶ *The Effect of Humidification on the Propensity of Motion Picture Film to Static Markings.*

Dry air is capable of absorbing or taking up a certain critical quantity of water in the form of water vapor at any particular temperature and atmospheric pressure, when it is said to be saturated. The higher the temperature the greater is the quantity of water vapor which the air is capable of holding, that is, the concentration of water vapor in warm saturated air is greater than in cold air. If warm saturated air is cooled, moisture condenses out, leaving the air saturated at the lower temperature.

The percentage of moisture in air at any particular temperature as compared with the quantity which it would hold if it were saturated is termed its relative humidity. Raising the temperature of air, therefore, lowers the relative humidity providing no water is present for the air to absorb, and vice versa.

Relative humidity measurements are usually made by a hygrometer, a suitable form of which consists of a wet and dry bulb thermometer. The bulb of the wet thermometer is surrounded with an absorbent material such as a silk wick which dips into a vessel containing water. The evaporation of this water tends to cool the bulb and since the rate of evaporation depends on the dryness or relative humidity of the air, the difference in reading between the wet and dry thermometers is a measure of the relative humidity of the air. It is important when using a hygrometer to place it in such a position that a representative sample of the air circulates over it. By reference to tables supplied with the instrument the relative humidity is obtained. Some hygrometers rely on the expansion and contraction of a strand of horsehair in dry and moist air, but these are not always reliable.

If motion picture film is placed in an atmosphere at any relative humidity there is an exchange of moisture either from the film to the air or vice versa until equilibrium is reached. That is, dry film in a moist atmosphere absorbs water, while moist film in a dry atmosphere loses water.

The transfer of moisture either from the air to the film or vice versa requires time and takes place comparatively slowly.

Since the tendency of film to give static markings depends on its conductivity, which in turn depends on the absolute quantity of water which it contains, the effect of moist air in affecting the propensity of film to give static depends on:

- a. The relative humidity and temperature of the air.
- b. The time of exposure of the film to the air.



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(a) In order to determine the effect of humidification in atmospheres of increasing relative humidity on the propensity of gelatine and film base to generate static electricity, strips of motion picture positive film and sheets of gelatine were exposed to atmospheres of different humidities by placing in humidors containing sulphuric acid of varying concentrations (representing atmospheres of known relative humidity) and stored for 12 hours at temperatures of 50°F. and 110°F., respectively. The strips were then rubbed vigorously with a piece of velvet (the positive film was rubbed on the base side) and tested for electrification by means of an electroscope. The results obtained were as follows:

Relative Humidity	Material	Electrification	
		50 deg. F.	110 deg. F.
54%	Gelatine	slight	slight
	M. P. Positive Film	strong	strong
74%	Gelatine	slight	slight
	M. P. Positive Film	slight	slight
82%	Gelatine	nil	nil
	M. P. Positive Film	slight	very slight
88%	Gelatine	nil	nil
	M. P. Positive Film	very slight	nil
92%	Gelatine	nil	nil
	M. P. Positive Film	nil	nil

From these tests it is seen that gelatine ceases to generate an appreciable amount of static electricity when exposed to an atmosphere of about 80% relative humidity for twelve hours, at 50°F.

Although tests were not made with sheets of emulsion stripped from the base, comparative tests made by rubbing gelatine sheets and the emulsion side of motion picture film exposed to the same atmosphere, showed that positive and negative motion picture emulsions have less tendency to generate static electricity than plain gelatine.

The above tests also show that with motion picture negative film the air must have a relative humidity of about 90% at 50°F. and about 85% at 110°F. if it is to entirely prevent the generation of static electricity when the film is exposed to it for a few hours.

Since with air at any constant relative humidity the quantity of water which it contains increases with rise of temperature, film in equilibrium with such air contains a greater quantity of water at higher temperatures. Since the propensity of film to give static markings runs parallel with the absolute quantity of moisture which it contains, it would be expected that at a given relative humidity the propensity of film to give static would decrease with rise of temperature, as was shown by the above experiments.

(b) A dry emulsion or a dry film base absorbs moisture comparatively slowly. Bone dry motion picture film must be humidified for more than 24 hours in an atmosphere at 80% to 90% relative humidity before it absorbs all the moisture it will hold under these conditions. Hence, the condition of the air has very little effect unless the film is exposed to it for a sufficient length of time. Thus, dry motion pic-

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ture positive films may give static markings even if the air of the printing room is saturated, if the film is not given an opportunity to absorb moisture. On the other hand, film containing an excess of moisture will not give static markings when immediately placed in dry air.

The fact that motion picture film is usually tightly rolled also hinders the rapid attainment of equilibrium with the atmosphere, but this is advantageous, in case film has to be stored in a dry atmosphere. If conditions are such that static markings are produced on positive film in the laboratory, in order to further humidify the film in the roll it must be stored for several weeks in a moist atmosphere, but not one which is too moist, otherwise the edges of the film will stick together and on unwinding more static will be produced than if the film was handled in its original condition.

¶ Nature and Classification of Static Markings.

Static markings produced directly on an emulsion are invariably black, and in the case of a negative, they print as white markings on the positive print. The markings frequently occur at regular intervals owing to the intermittent movement of the film in the camera or printer gate (see Fig. 10), although more often the occurrence is at irregular intervals.

If the friction on the film is local the discharge usually takes place in the same vicinity, but if the friction is evenly distributed over the film surface the discharges occur at irregular intervals and in no particular location. Very frequently the markings are confined to the region of the perforations and occasionally extend inwards from the edges of the film.

With normal development the density of the markings may vary from a just visible deposit to a relatively high density according to the severity of the discharge.

In shape, static markings consist of either dots or irregular lines or a combination of the two.

The appended illustrations are of static markings accumulated over a period of several years and were produced either in the camera or the printer. The exact conditions under which they were produced were not recorded, but it was only possible to secure such severe markings by drying out either positive or negative film very thoroughly in a desiccator.

Such well-defined and frequently occurring markings are rarely found in practice, but it was necessary to make the conditions as favorable as possible for their production in order to secure markings sufficiently contrasty for illustration purposes.

The figures merely illustrate the type of markings which may occur under more normal conditions. Although the variety of the markings is possibly not complete, it is doubtful if

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any essentially different types of markings are normally produced in the camera or laboratory.

Static markings may be classified as follows:

1. *Small black spots with diffused edges.*

These markings are very similar to a certain type of moisture spots,³ or spots caused by chemical dust. Fig. 1 illustrates a large cluster of spots disseminated throughout a fan-shaped marking produced in the camera. This type of marking occurs very rarely.

2. *Black spots with branches.*

In Fig. 2 the black spots have one or two branches, while in Fig. 3 several branches radiate from the central dark spot, simulating a spider with outstretched legs.

3. *Tree-like markings—*

as shown in Figs. 4 and 5. These are a modification of those shown in Fig. 2, since the tree trunks and branches emanate from a black spot. The branches may also be regarded as sprouting from an imaginary horizontal bar at the base. The markings illustrated in Figs. 2, 4 and 5 were produced in the camera with bone dry negative film and the intermittency of occurrence is clearly seen in Figs. 4 and 5.

4. *Fan-shaped markings—*

as illustrated in Figs. 6, 7 and 8. The radii of the fan may be considered as branching out from a point which may possibly be the initial point of discharge. The markings in Fig. 7 consist of an assemblage of fan markings and were produced in a step printer. The intermittent occurrence of these is shown in Fig. 11.

In Fig. 6 the lower half of the fan-shaped marking is of much less density than the upper half and not so sharply defined, and is probably a result either of a reflection of the upper discharge, or a secondary weak discharge.

5. *Miscellaneous markings.*

Those shown in Fig. 9 were produced on bone dry negative film in a camera and consist of a conglomeration of dots, branches and fans.

¶ *Static Markings Encountered in Practice and Methods of Their Prevention.*

When motion picture film leaves the factory it may be reasonably assumed that it is free from latent static since it is handled during manufacture with extreme care and under the most ideal conditions of humidity. Moreover, careful tests are made on the finished perforated film before shipment in order to insure that the film is free from latent static markings which might otherwise appear on the developed film.

During handling, static may be produced either in the camera or in the laboratory when winding the film onto racks, when processing on the developing machine or during printing as follows:



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Carl Zeiss, Jena, have perfected a new lens—a Tessar, with a working aperture of f:2.7.

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1 9-16 inches	40.00	47.00
2 inches	43.00	50.00
3 1/8 inches	.. 51.00	58.00
4 inches	.. 64.00	71.00
4 3/4 inches	.. 72.50	82.50

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Camera Static

Negative motion picture film when packed for shipment contains such a quantity of moisture that it is in equilibrium with an atmosphere of 70% to 75% relative humidity, and in this condition, and especially in the class of negative film, unless it is subjected to severe friction, no static trouble need be feared in practice.

In order to determine at what point or points in a camera static is usually generated, a roll of positive motion picture film was thoroughly desiccated over sulphuric acid and then passed rapidly through a camera in the dark. Static discharges were observed at the following points: (a) where the film parted from the spool at a tangent, (b) at the retort traps, (c) in the region of all sprockets even though grounded, (d) at the gate, (e) at the take-up roll.

So-called grounded collectors consisting of tinsel and graphite coated pads were placed against or near the film at two or three places, but these had very little effect in preventing the static discharges. On development of the film the quantity of static markings ran parallel with the quantity of discharges observed in the dark.

(Continued on Page 23)



Five, six; and six, five; half-pint, quart; the long and short of it; or what you will. Introducing Georges Benoit, A. S. C. (left), and Charles (Buddy) Post, whom the A. S. C. member photographed in "Heaven on Earth," a Hunt Stromberg production. Tom Forman, who directed, is responsible for this pose.

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(Continued from Page 22)

This experiment demonstrated that static may be produced in the camera at any point where there is friction and especially in the camera gate where the discharges were most severe. It was also concluded that brush collectors are of questionable value, while a grounded metal crank is of little use unless the handle is in electrical connection with other parts of the camera such as the gate and sprockets, which must be good conductors.

¶ *Prevention of Camera Static.*

The only certain method of insuring the absence of static markings is to prevent the generation and accumulation of the static electricity in the first place as follows:

1. *By removing all sources of friction.*

Negative film which shows camera static markings generally also shows bad abrasion marks. Of the various parts of the camera the gate is responsible for most of the abrasion.

When making titles directly onto positive film in the camera the emulsion tends to scrape off onto the metal tracks where it builds up escresencies of hardened emulsion which retard the passage of the film and incidentally cause static as a result of the increased friction. By glueing a small strip of oiled chamois on each side of the film track at its upper edge the passage of the film is facilitated and abras-

ion of the emulsion and the attendant static is prevented.

Film loops which are too long cause the the camera with the possible generation of static.

2. *By making all camera parts conductors of electricity.*

As explained above, when film is rubbed with a conductor such as a metal, a minimum of static is produced, especially if the metal is in electrical connection with the rest of the camera or is "grounded." Glass, hard rubber, varnished or lacquered metallic surfaces, silk and velvet should, therefore, be avoided whenever possible in camera construction, while the gate and sprockets and as far as possible every part of the camera should be of metal.

(Continued on Page 25)

E. Burton Steene, A. S. C., who is specializing in Akeley camera work, has had a busy month with his Akeley. Among those who have availed themselves of his services are Warner Brothers, Hunt Stromberg productions, Universal, Waldorf productions and Metro-Goldwyn-Mayer.

Roy Overbaugh has been dropped from membership in the American Society of Cinematographers because of non-payment of dues.



Rene Guissart, A. S. C., has furnished his house on the Marne, following his return to Paris, where he has established the American and Continental Studio for special trans-Atlantic assignments for American productions. Rene, it is said, has ordered a row boat with which he will take his morning exercises on the famous Marne.

* * * *

Robert Kurrle, A. S. C., is filming "The Sea Woman," Edwin Carewe production for First National.

* * * *

George Barnes, A. S. C., is photographing "The Dark Angel," a George Fitzmaurice production, at the United Studios.

* * * *

Ernest Haller, A. S. C., is shooting the Henry King production, "Stella Dallas," at the United Studios.

* * * *

H. Lyman Broening, A. S. C., on finishing "Diablo's Double," a Harry J. Brown production featuring Reed Howes, filmed "Reality," a Raymond Gardner production, directed by John P. McCarthy and starring Dorothy Hope, English stage and screen actress. The cast included William Scott, Elsa Benham, Emmet King, Pat Moore, Sabel Johnson, Matilda Comont, Myles McCarthy, Fred Malatesa, Mickey Moore and William Buckley.

* * * *

E. B. Du Par, A. S. C., is photographing the Warner Bros. production, "The Love Hour," featuring Ruth Clifford, Huntley Gordon, Louise Fazenda and Willard Louis. Herman Raymaker is directing.

* * * *

Charles J. Van Enger, A. S. C., has finished the filming of "Red Hot Tires," a Warner Bros. production directed by Erle Kenton and starring Monte Blue.

* * * *

Fred W. Jackman, A. S. C., and Floyd Jackman, A. S. C., are on location at Lodge Grass, Mont., for the filming of the next Fred W. Jackman production. Fred is directing and Floyd is chief cinematographer.

* * * *

Gilbert Warrenton, A. S. C., has finished the filming of "Seven Days," a Christie production directed by Scott Sidney for release through Producers Distributing Corporation, and has begun the photographing of Emory Johnson's latest production.

George Schneiderman, A. S. C., has completed the photographing of "Thank You," a John Ford production for Fox.

* * * *

Harold Wenstrom, A. S. C., has returned from New York City to Hollywood. Wenstrom is sporting a new Mitchell camera and a new Buick roadster.

* * * *

King Gray, A. S. C., has been appointed to fill Fred W. Jackman's place on the A. S. C. Board of Governors during Jackman's absence from the city on location.

* * * *

Arthur Edeson, A. S. C., has concluded the cinematography on the latest Joseph M. Schenck production starring Constance Talmadge.

* * * *

The July issue of the Asia magazine carries a detailed story by Herford Tynes Cowling, A. S. C., of his experiences in Asia and in the forbidden parts of Tibet during his most recent trip around the world. Cowling's story, together with rare and priceless illustrations made from photographs taken by him personally inside temples and sacred grounds, cover numerous pages in the magazine.

Cowling's story and illustrations open the door on what heretofore were strictly concealed precincts, not only because of religious barriers to the other races but because of the inaccessibility of the lands which the A. S. C. member, through innumerable hardships, finally succeeded in penetrating with his extensive camera equipment. Many of the temples and other holy places, by virtue of Cowling's photographs, are given to the view of the outside world for the first time in the history of man—having, in fact, been refused to the eye of white man for centuries.

Accounts of Cowling's adventures have provided interesting material from time to time in the various issues of the **American Cinematographer**. The A. S. C. member is still busy at present editing the motion picture film which he exposed during the trip, on part of which the stories and illustrations in the Asia magazine are based.

Cowling's thoroughness as a diplomat in securing consent to film the forbidden places faced as he was by prejudices and unfamiliar foreign tongues is as noteworthy as are the results themselves, which he obtained in his negatives, once he won the permission to photograph among the Asiatics.

(Continued from Page 23)

3. *By rehumidifying the film.*

Negative film which is stored for considerable periods in a dry atmosphere loses moisture, but may be rehumidified by rewinding loosely and storing for about 12 hours in a humidior, consisting of an enclosed box containing either a sponge or other absorbent material saturated with water. A simple humidior may be constructed by soldering together two motion picture film cans bottom to bottom, perforating the now common partition and placing saturated blotters in one of the compartments. The loosely wound film should then be placed in the empty compartment and allowed to remain for about 12 hours at 70 to 75°F. The film should not be allowed to remain for too long a period in the humidior, especially at high temperatures (80 to 90°F.), otherwise moisture spots are liable to be produced on the emulsion to rub either against itself or the side of sion.³

The practice of placing a moistened sponge in the camera is of no value if the film is run through quickly, but if the sponge is allowed to remain in the loaded camera for one or two hours the film has more opportunity to absorb water and may be less liable to develop static markings.

4. *By conducting the products of combustion of an alcohol lamp into the camera chamber.*

Since the products of combustion of alcohol contain water vapor, the lamp has a two-fold effect of humidifying and ionizing the air which as explained above tends to prevent static.

¶ *Laboratory Static.*

In the motion picture laboratory static discharges may occur during the following operations (a) Winding the film on the developing racks, (b) Development on the processing machine, (c) Cutting of the negative and (d) Printing.

1. *Rack static.*

Film is usually wound on the rack by holding the roll of film in one hand and winding with the other. The slack film is then tightened on each loop which results in severe friction between the slat and the film base, which may result in static markings.

Static discharges may also occur at the point where the film leaves the roll at a tangent as a result of induction and friction, especially if the film has been humidified excessively causing the convolutions to adhere slightly, while if the roll is gripped at all tightly, friction between the hand and the film or between the convolutions of the film may be sufficient

to cause static. The latter difficulty may be overcome by the use of a roll holder illustrated in Fig. 13 during winding. The arm AB is lifted up, the roll placed on core C and the arm AB again lowered. The holder is then grasped by handle H, and by exerting a slight pressure with the thumb at A the film may be fed with a uniform tension and speed.

Static markings produced during winding and tightening may be minimized by humidification of the film before it enters the dark room, and in severe cases by also humidifying the air in the dark room. A suitable relative humidity is from 70% to 80% at 70° to 75°F.

2. *Developing machine static.*

On a processing machine static markings can only be produced up to the point where the film enters the developer, and may be caused by too much tension on the take-off roll, malalignment of the sprockets, or by running the machine at too high a speed. Humidification of the film previous to or during printing and correction of mechanical defects will prevent such trouble.

(Continued next month)

The National Vigilance Committee of the Associated Advertising Clubs of the World, which during the past thirteen years has developed into an intensive nation-wide system for the maintenance of the "Truth-in-Advertising" standard, announced at the World Convention at Houston, Texas, recently its incorporation under the laws of Delaware as the National Better Business Bureau. The change in name arises from the fact that the Committee is affiliated with and co-ordinates the local work of the many Better Bureaus in leading cities of the country.

Fifteen Directors

Operations of the National Better Business Bureau will be in charge of fifteen directors; five selected from the Better Business Bureaus, five from the sustaining members of the National Vigilance Committee, and five from the Executive Committee of the Associated Advertising Clubs of the World.

No Change In Policy

There will be no change in operating policy, but it is believed this step will enhance the prestige and influence of the Bureau work throughout the country and make of it a still more useful servant of advertising, American business and the consuming public.

The incorporators of the National Better Business Bureau are Lou E. Holland, of Kansas City, retiring President of the Associated Advertising Clubs of the World, Herbert S. Houston, of New York, Chairman of the Board of Trustees of the National Vigilance Committee; Harry D. Robbins, Chairman of the Committee on Management of the National Vigilance Committee, and Merle Sidener, of Indianapolis, a member of the Committee on Management.

3. "A Study of the Markings on Motion Picture Film Produced by Drops of Water, Condensed Water Vapor and Abnormal Drying Conditions," by J. I. Crabtree and G. E. Matthews, Trans. Soc. M. P. Eng., Vol. 17, p. 29. American Cinematographer, January, 1925, p. 12.



16 BELL & HOWELL CAMERAS Used In Filming "Lost World"

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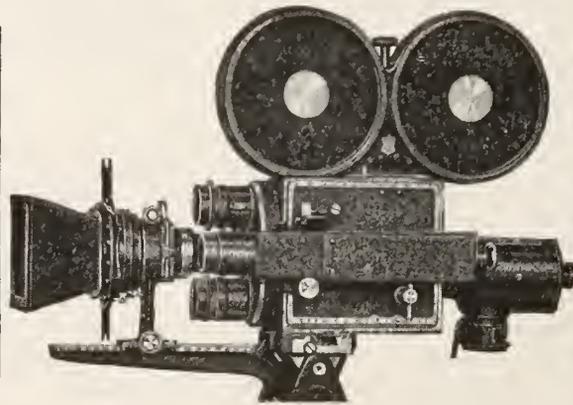
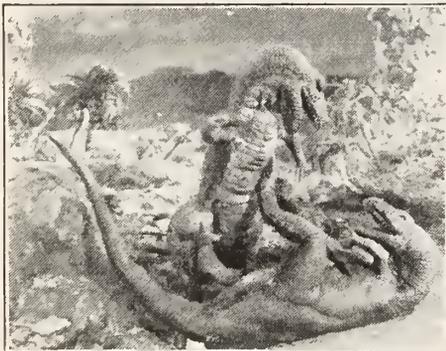
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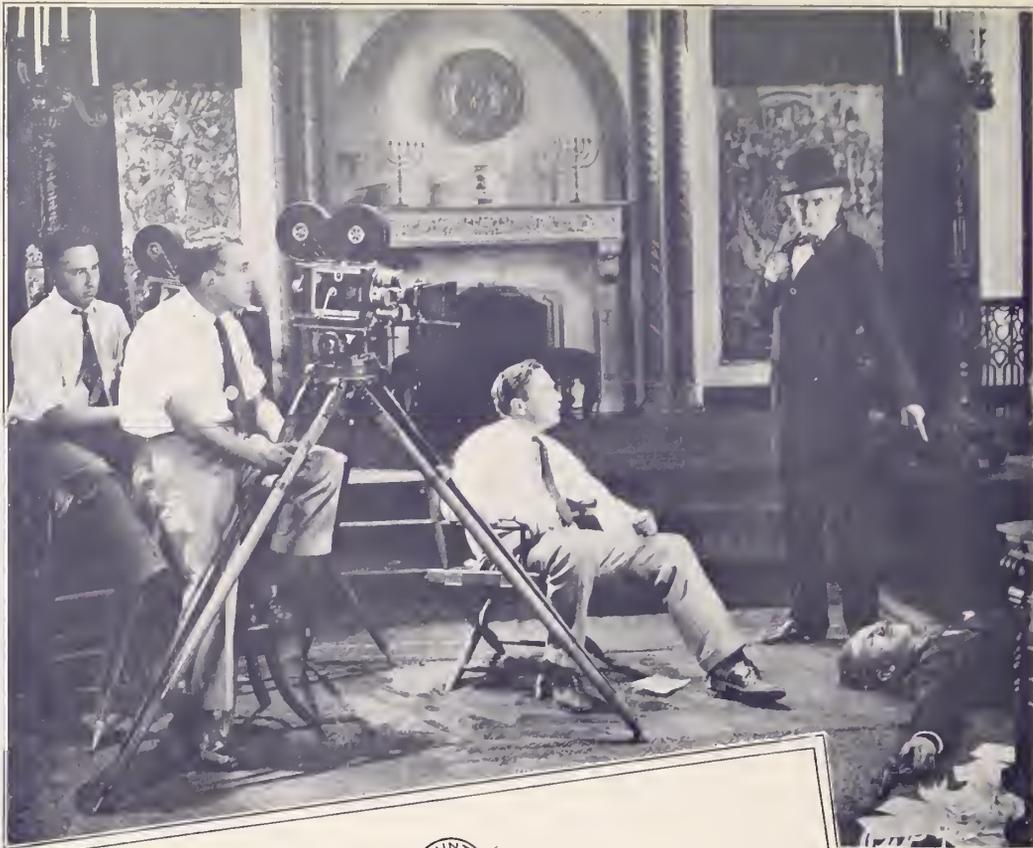
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Hollywood, California

May 18 1925

Mr. H. F. Boeger,
Mitchell Camera Co.,
Hollywood, Calif.

Dear Mr. Boeger-

The Mitchell camera is an indispensable addition to the ever increasing efficiency of motion picture production.

The camera has many laudatory advantages. The one by which the turning of a lever adapts it to scenes without shifting, is a remarkable time saver and pays for itself through this device alone, many times over. The Mitchell speeds production in many other ways.

Incidentally I might add that the Mitchell camera lessens the work of the photographer, makes his efforts more certain of good results and reduces the apprehensions of the director as to whether effective pictures are being taken.

It is the best camera I have used. I am now shooting Harry Carey in "Bad Lands" with it and will use it in other forthcoming productions.

Sincerely yours

Tom Forman

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August, 1925

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American Cinematographer

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In This Issue :



“Periscoping” Projection—By Earl J. Denison

New “Talking” Cinema Announced

**Eastman Announces New Model of Cine-
Kodak**

**Gaetano Gaudio, A. S. C., to Continue to
Direct**

PUBLISHED IN HOLLYWOOD CALIFORNIA

RELEASES

July 5, 1925, to August 2, 1925

TITLE	PHOTOGRAPHED BY
The Manicure Girl	J. Roy Hunt
The Brand of Cowardice	Not credited
Before Midnight	Dewey Wrigley
Kivalina of the Ice Lands	Earl Rossman
The Awful Truth	Joseph Dubray, member A. S. C.
The Sporting Chance	Roland Price and James Brown
Fighting Courage	Joseph Walker
How Baxter Butted In	David Abel, member A. S. C.
The Happy Warrior	Nicholas Masuraca and Wm. S. Adams
The Little Giant	Sid Hickox
The Lucky Devil	Alvin Wyckoff
The Freshman	Walter Lundin, member A. S. C.
One Year to Live	Arthur L. Todd
Red Love	Not credited
Passionate Youth	Milton Moore
The White Desert	Not credited
The Woman Hater	John Mescall
Under the Rouge	King Gray, member A. S. C.
His Buddy's Wife	Henry Cronjager, member A. S. C.
Cyrano De Bergerac	Not credited
Grounds for Divorce	Bert Glennon, member A. S. C.
That Man Jack	Art Reeves
Evolution	Not credited
Lightnin'	Not credited
The Home Maker	John Stumar, member A. S. C.
Tracked in the Snow Country	Ray June
The Overland Limited	Jack MacKenzie
Private Affairs	Jack MacKenzie
The Love Gamble	King Gray, member A. S. C. and Orin Jackson
The Light of Western Stars	Lucien Andriot
The Goose Woman	Milton Moore
Pretty Ladies	Ira Morgan, member A. S. C.
My Lady's Lips	Allen Siegler
The Marriage Whirl	Not credited
Youth's Gamble	Ross Fisher, member A. S. C.
Night Life of New York	George Webber
The Texas Trail	Georges Benoit, member A. S. C.
Wild Justice	Ray Binger
Fair Play	Ernest Miller
Hearts and Spurs	Allen Davey
The Street of Forgotten Men	Hal Rosson
The Fearless Lover	Not credited
Fifty-Fifty	Henry Cronjager, member A. S. C.
Never the Twain Shall Meet	Ira Morgan, member A. S. C.
Marry Me	Karl Brown
Whistling Jim	J. P. Whalen
Camille of the Barbary Coast	Frank Zukor
The Wild Bull's Lair	Ross Fisher, member A. S. C.
Border Vengeance	William Thornley
Rugged Water	Alfred Gilks, member A. S. C.
Eve's Lover	George Winkler

American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

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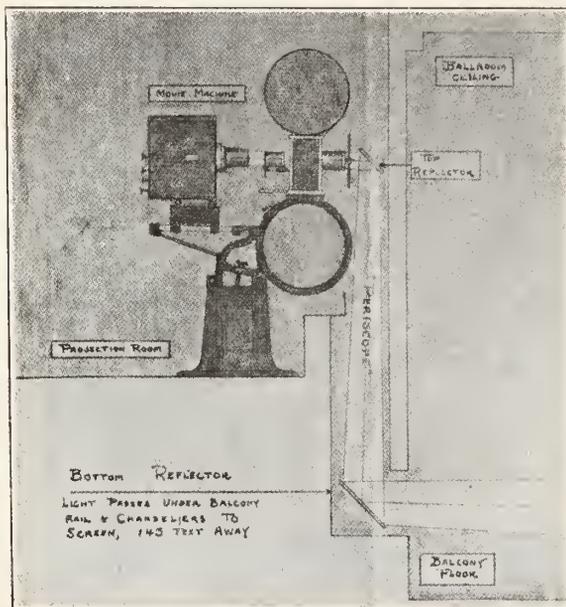
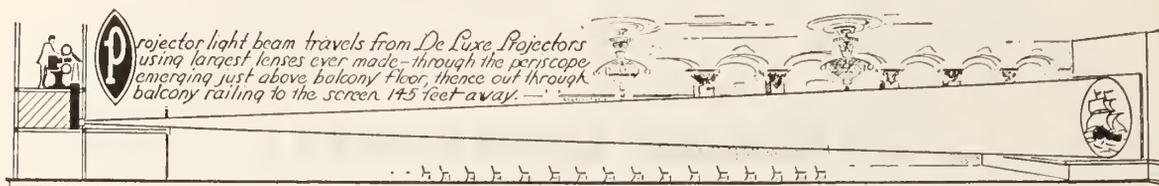
(Copyright, 1925, by the American Society of Cinematographers, Inc.)

PROJECTION • Conducted by Earl J. Denison

"Periscoping" Projection



Projection Is "Piped" around Angles to Avoid "Mayflower" Chandeliers



The Light that Veered

"It can't be done," they said. "How can you make the projected images turn corners and bend the light to do so? Why, it's impossible!"

"Maybe," answered Roger M. Hill, U. S. projection engineer, "it is impossible, but not until we see what we can do."

Hill did it.

A "periscope" system of projection has been made a part of the ballroom of "The Mayflower," the elaborate new hotel in Washington, D. C.

In the construction of the Washington hostelry, it was not only desired to fit the ballroom with complete projection facilities, but at the same time to appoint the room with sumptuous furnishings, with which the projection should not be allowed to "interfere." Among these furnishings are a series of chandeliers, so massive in size, that it was found that they would obstruct the beam of light from the projectors, if the latter were placed in the positions originally contemplated for them.

Engineered by Hill

So "The Mayflower" management called on Roger M. Hill, engineer of the U. S. Army Motion Picture Service. Hill immediately ad-

vised the hotel people to "periscope" or "pipe" their projection. His recommendations sounded unreasonable, but as soon as he started to put them into effect, their practicability were at once evident.

Chandeliers in Path

Projectors were put in on the balcony of the ballroom. The floor level of the balcony struck above the middle of the chandeliers which thus stood in the way of the light beam, if the projection engineering had been carried out in the regular way.

145 Foot Throw

Hill, in carrying out the "periscope" idea, brought into play reflectors which he obtained from the Kollmorgen Optical Corporation. The

A. S. C. in Campaign Against Cutting Credits

Nation-wide Spread of Abuse Brings Action from Cinematographers.



Letters Written to Producers Calling Attention to Elimination of Credits.

Launching an investigation into the causes of the cutting of film credit titles in motion picture theaters and at the same time taking preliminary steps to prevent the continuance of the practice, the American Society of Cinematographers during the past month wrote to the Hays organization in New York City and in Hollywood, calling the attention of the producers to the treatment which their finished product is being accorded on reaching the cinema houses.

In New York

Two of the most recent cases reported to the A. S. C. occurred in widely divergent points in the United States, the one being in New York City and the other in Portland, Ore. In the former instance, during the week of July 7th, the credit titles were eliminated from the print of Edwin Carewe's First National production, "The Lady Who Lied," when it was exhibited at the Mark Strand Theater.

In Portland

In the Portland case, all the credit titles were eliminated from the print of "The Making of O'Malley," another First National production. Hence it will be seen that the situation affects not only the cinematographer but all those who are ordinarily given credit in the credit titles. In both of the productions enumerated in the foregoing, the blame cannot be laid at the door of First National, the producers, as they have consistently included credit titles on their productions.

That there is little consistency to the argument that the titles are cut out for the purpose of saving valuable time on the program is indicated by the fact that, in the Portland instance, a locally made picture, 800 feet in length and showing the Elks' parade, carried full credit titles and was given repeated exhibitions.

A copy of the letter sent by the A. S. C. to the producers follows:

Mr. Fred Beetson, Secretary,
Motion Picture Producers & Distributors
of America, Inc.,
6912 Hollywood Blvd.,
Hollywood, California.

Dear Mr. Beetson:—

For some time past our attention has been called to what seems to be a practice among a great many theater executives of cutting titles from the pictures they exhibit. The latest instance of prominence that we have had pointed out to us occurred at the Mark Strand Theater, New York City, during the week of July 7th,

when the credit title from "The Lady Who Lied," an Edwin Carewe production for First National, was eliminated. We are particularly interested in preserving, for the attention of the audiences, the recognition of the cinematographers' participation in the making of a given production, and believe, in fairness to all concerned, that the exhibitor should not be countenanced in cutting out these titles once the producer has seen fit to include such in his production. The chief argument on which the exhibitors seem to rely is that the elimination of these titles is a necessity for the saving of program time; but in view of the fact that the average title takes but a few seconds to run, this argument seems to carry little or no weight.

Trusting that this matter may have your attention,

Very truly yours,

AMERICAN SOCIETY OF CINEMATOGRAPHERS.

By John W. Boyle,
Secretary.

Fall Meeting of S. M. P. E. to Be
Held in October at Roscoe, N. Y.

The fall meeting of the Society of Motion Picture Engineers will be held at Lakewood Farms Inn, New York, October 5th, 6th, 7th and 8th.

A number of important subjects are to be included on the program.

Schurman in Hollywood from East;
Offices Removed to Larger Plant

Ferdinand Schurman, president of the Fish-Schurman Corporation, sole distributors of Goerz Raw Stock, is in Hollywood from New York City.

The organization's Hollywood offices were recently removed to an enlarged fireproof plant at 1050 Cahuenga Avenue, near Santa Monica Boulevard.

John M. Nickolaus has been re-signed by Louis B. Mayer as superintendent of the laboratory at the Metro-Goldwyn-Mayer Studios.

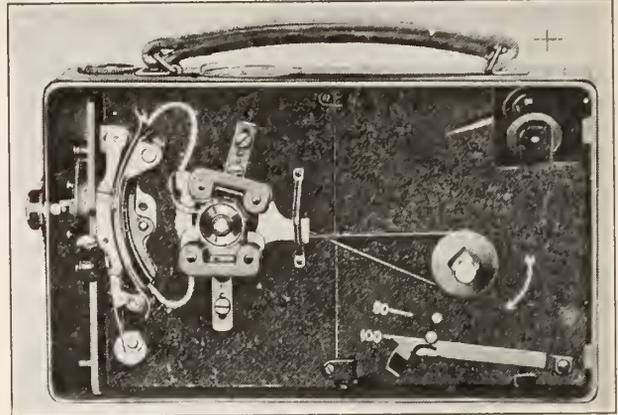
Nickolaus has occupied the position of superintendent of the laboratory with Metro-Goldwyn-Mayer for the past year. His new contract covers the period of another twelve months.

Eastman Announces New Model of Cine-Kodak

Latest Creation Practically of Pocket Size. Designed for Amateurs. Spring Driven.



Daylight Loading. Film in 50 or 100 ft. Lengths. Electric Models Continued.



Above Interior view showing threading apparatus of new Cine-Kodak. The take-up reel fits over the shaft shown in the right half of the illustration. The supply roll is placed in similar position beside the motor, beyond the partition.

Left—Illustrating comparative sizes of new Cine-Kodak and 3-A Kodak folded.

Announcement is made by the Eastman Kodak Company of the development of a new model Cine-Kodak, practically of pocket size, and as simple to load, hold and operate, as an ordinary Kodak. With the price considerably less than \$100, amateur motion picture taking should now take on the popularity of Kodak snapshooting, Eastman officials predict.

Electric Models Still in Vogue

While the more serious worker has the present electrically driven Cine-Kodak designed for him, the new more compact model is planned to appeal to the world of amateurs at large.

This latest achievement is a practical motion picture camera reduced to the compactness and simplicity of operation of the Kodak. It has genuine leather covering, has the appearance and is about the size of a 3A Kodak closed.

Daylight Loading

It takes ordinary Cine-Kodak film (16 mm wide) in 50 or 100 ft. lengths, is daylight loading and spring driven. The film is made reversible, that is, through a special process the negative is reversed to a positive and the film actually exposed in used for projection. This eliminates cost of additional film and printing.

The price of the film also covers the cost of finishing at any one of the Eastman laboratories. No tripod is necessary. This new model is held at waist level, the subject found in the view finder and by pressing a spring twenty feet of film may be exposed without rewinding. Steady spring tension provides for evenness of exposure.

Wide Angle Lens

The lens is an f. 6.5 especially designed for this camera. It has a focal length of only 20 mm (less than 1 inch) which gives a broad angle and permits the photographing of large objects at relatively close range. "Close-ups" can be made at 4 ft. and distant views can follow with no focusing adjustment.

The weight is given at 5 pounds when loaded; size, 8 13-16 inches long by 5 9-16 inches high and 3 1-16 inches wide. It can be brought into action as quickly as any Kodak, it is stated, and a tripod is not necessary.

Indicators

Indicators on the outside of the camera are convenient helps to the operator. An exposure guide on the diaphragm scale shows which of the four stops to use under various conditions. A footage indicator automatically tells how many feet of unexposed film are left in the camera.

Loading

The film reels are opposite each other and may be loaded in daylight. Rapid threading is a part of the camera scheme. Pull-down claws in the gate automatically adjust themselves to the perforations in the film. The guide bar is at an angle, allowing the film to be wound on the reel without danger of jamming or of loose-winding. Studs in the door prevent closing the camera if the loading of the film has not been correctly done.

The curved gate holds the film accurately

When Professional Skill's A Prerequisite

Amateur at Overwhelming
Disadvantage in Bucking
Film Problems in Wilds



Overestimating Wrong Per-
son's Ability Robs Outside
World of Valuable Records

THOUSANDS of dollars are spent on outfitting expeditions for penetration into the jungles and for exploration trips generally, with the idea to bring back priceless results for museum and other educational uses.

Sadley but truly, it has been the case that the means whereby such results are to be recorded—namely, through cinematography and photography have been entrusted to the hands of rank amateurs.

Great Task

It is not to be said that the amateur explorer cannot be successful for some of the most successful of such cannot be classified as professionals at the game. But when the matter of photography and cinematography — especially the latter—is involved, the chances, in out-of-way places, are so decisively against the unskilled or unlearned man that it is unfair to expect him to effectually cope with the responsibility of preserving for posterity the results of the trip, gigantic that it may be. In fact, in most instances he does not preserve such, and, as for the outside world, which has been regaled with widely disseminated publicity as to the jaunt, it usually must be content with further printed accounts of what the expedition did and saw when it finally treks homeward.

No Place for Ping-Pong

How different it would be if these vivid happenings were efficiently captured on motion picture film, whereby the world at large could forever thrill at the chances that the valiant explorers took! But because Algernon is a crack snapshot artist with his amateur camera and produces pictures that please all of his playmates and playboys at home does not make him adept

With Stanley in Africa

What would we not give for a cinematographic record of the Lewis and Clark expedition; of Stanley's adventures in Africa; and so on down the line? Unfortunately, those men lived before the age of cinematography.

The twentieth century explorer—he has all the wonders of the science at his command! But—does he always utilize it intelligently?

in surmounting the cinematographic difficulties of the jungles. He may have the wherewithal, through family or otherwise, to purchase the most expensive camera and equipment; he may even apply himself to the hurried attempt of mastering their use before the expedition finally embarks; but once he is out in the field away from guiding hands, he must depend on his own resources and knowledge of the profession, no matter how thorough or fool-proof his outfit may be.

Expensive Experience

The chances are that he learns this—too late. He will

not deny, if he is sincere, that the results, if any, that he obtained would have been far more complete and comprehensive if the elaborate, or otherwise, equipment, had been in the care and operation of a man whose business it is to know their use. Experienced men like Herford Tynes Cowling, who has been bucking primitive conditions for years—whose life's work is to bring the outer world photographic records from the jungles—realize, with all of their vast knowledge and seasons at the camera, how great are the odds against even the weathered man who hazards to deal with the hair-trigger shooting among the wild life. Then there is always the element of holding intact from spoilation what results have been gotten, etc., etc. Small wonder, therefore, that the amateur usually returns virtually empty-handed!

If the twentieth-century explorer would have himself viewed in the light of something of a public benefactor, then let him use reasonable methods for allowing the public to benefit, visually or educationally, from the explorations. If the pseudo-knight of the camera has his heart set on roughing it in the wilds, then let him start by wrestling tripods and carrying cases—so that the expert who understands his photography and cinematography may have all the more time to bring the details and highlights vividly before the civilized world!

Marked Interest Manifested in A. S. C. Annual

Work to Create and Occupy Unique Place in Cinematographic Quarters.



Extensive Plans Being Executed to Provide Great Run of Material for Issue.

NO ADVANCE in price or extra charge will be made for the American Society of Cinematographers annual of cinematography, the A. S. C. Board of Governors announces in reply to numerous inquiries on the subject. Instead, the annual will be presented as a part of the regular subscription price to the subscribers of the American Cinematographer, and will be issued in combination with the regular October number of this publication.

As heretofore announced, the work will be the first of its kind essayed. Current plans call for the incorporation within its pages of invaluable statistical data, and of material of use to all those interested in cinematography, directly or indirectly.

Wide Circulation

In carrying out the plans for the annual, the American Society of Cinematographers believes that it is creating and fulfilling a definite contribution in its field of endeavor. The annual is to be given an extra wide circulation among motion picture and other newspaper editors throughout the country, thus providing an instructive medium of bringing to their attention, and ultimately to that of their readers in many instances, the messages of those interested in the cinematographic art.

Under One Head

A great heap of data has already been assembled for the annual, and by the time that the number comes off the press, information of an unprecedented unusual nature will be assembled under one head for the first time.

With all of the importance of the figures, however, the only instructive, but interesting to the readers. To this extent news sources in every part of the country are being utilized.

Explain Mistake In Film's Credit

An error on the part of an assistant in the publicity department resulted in the credit of the photographing of Cecil B. De Mille's "The Ten Commandments" being given to a second cinematographer instead of to Bert Glennon, A. S. C., chief cinematographer on the production, according to letters received by Glennon from Barrett Kiesling, De Mille's director of publicity, and by the American Society of Cinematographers from the De Mille executive offices. Two of the publications in which the item appeared have already published corrections.

The League and Control of Films

Concerning steps taken by the League of Nations for the regulation of motion pictures, Martin Quigley, publisher of "Exhibitors' Herald," says as follows:

"The secretary-general of the League of Nations has issued a request to all leading governments that information be supplied concerning the system of regulating motion pictures employed in the various countries.

"This, doubtlessly, is in line with the objective of the league to have a hand in the formulating of public opinion throughout the world.

"In the case of motion pictures the league apparently feels that it may come out openly in attempting to put motion pictures to work for the promulgation of its ideas and ideals. This might be a good thing or a bad thing for the peoples of the world, but to persons identified with the motion picture industry it is interesting to note this development which sheds light on the thought of the powers of the league with respect to the uses to which the motion picture may be devoted.

"It is proper that the motion picture should be considered in the same light as the newspaper as a great popular method of expression. Partisans may point to the greater effectiveness of the motion picture in disseminating certain kinds of information and ideas, but any fair observer must agree that the motion picture, as an organ for influencing public thought, is entitled to rank with the press.

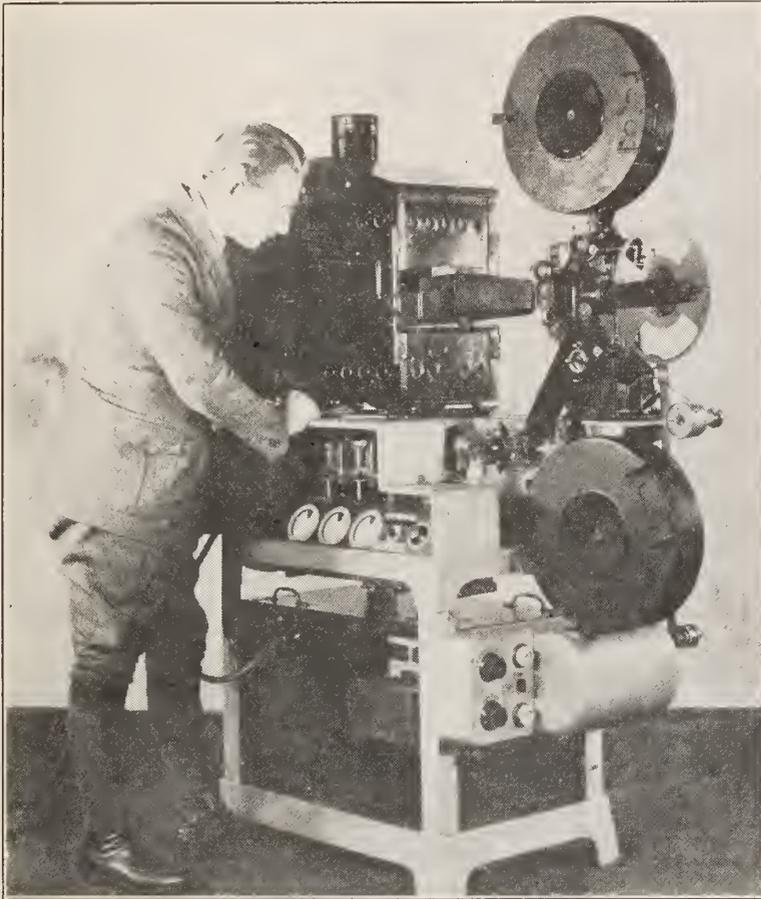
"There is little doubt that were such a request addressed to the press of the world and to the various governments with respect to newspapers as has been issued with reference to motion pictures, the request would be summarily dismissed on the grounds that its fulfillment might lead to a dangerous use of the press for propaganda purposes.

"We believe that the same attitude should be shown toward the apparent effort to create an organized motion picture propaganda in behalf of the League of Nations. . ."

Announce New "Talking Pictures"

By G. Pupikofer

Acoustic Triergon Film
Given Extensive Trials
for Testing on Continent



Left—Figure A, illustrating the projector for the new "talking pictures."

Above—Figure B, the novel hornless loud speaker, which is placed near or behind the projection screen, and produces the sound that gives the audience the illusion of the talking and musical film.

It is well known that for many years attempts have been made to solve the problem of the acoustic film by the aid of the gramophone. These efforts, however, did not yield any satisfactory result, in spite of the fact that no less a person than Mr. Edison occupied himself with the matter. Apart from the defective reproduction of speech and music by the gramophone, the temporal concordance of picture and sound, i. e., the synchronism, was not obtained. Very often, the artist on the screen had already closed his lips before the last tones were audible from the gramophone horn.

The Triergon system does away with the gramophone. The cinematographic picture and the phonogram here form an organic unit, both being photographed on the same reel. At the outset there were considerable technical difficulties experienced in carrying out the Triergon system, seeing that it was intended to transform the feeble energy of the sound-waves into electrical impulses. These electrical impulses had to be transformed into light for

the purpose of photographing them on the reel. The latter is then developed and copied and so the acoustic film is reproduced. An analogous proceeding had to be carried out in the reverse direction, i. e., light had to be converted into electricity and the latter into sound, so that the same tones issue as are heard by the human ear when making the record.

The acoustic Triergon Film, popularly known as the "talking film" is the result of seven years' work on the part of three inventors, J. Masselle, H. Vogt and Dr. J. Engl. The Tri-Ergon Co., Ltd., Zurich, a Swiss Company with a paid-up capital of two million Swiss francs, is the owner of the invention with all the patents appertaining thereto. The company manufactures and supplies all the necessary apparatus. The acoustic films themselves are made by the licencees of the company and utilized under license. The Universum Film Co., Ltd., Berlin (Ufa) recently acquired the license for German-speaking countries. The Tri-Ergon

(Continued on Page 15)

The EDITORS' LENS . . . focused by FOSTER GOSS

Credit Titles

- ¶ In some motion picture houses, the matter of cutting the credit titles from prints exhibited has become the rule rather than the exception. As reported in other columns of this issue, the practice apparently has spread from coast to coast. In the face of this prevalence, the American Society of Cinematographers has deemed it wise to put forth a sweeping investigation into the reasons, if there are any, for the butchering of the prints, and at the same time to find means for curing the malady.
- ¶ The old excuse—that the few seconds needed for the running of the credit titles must be utilized because of the press of program time—seems to be definitely exploded. Neither do we believe that the projection of the credit titles bores the audience any more than do some of the management's own "presentations," to make time for which it is claimed that the titles must be cut.
- ¶ The withdrawal of the titles, it is sometimes averred, is compensated for by the insertion of the accredited names in the theatre program. This in a measure may be true, but the disadvantages of program listing in general does not make this a complete method of taking care of the credits for the film in question. Unless the program is compiled so that it is particularly interesting, it is thrown on the floor of the theatre before the patron ever leaves the confines of the house, in the darkness of which he has scarcely had time nor inclination to wrestle with the small-point type in which the names are usually set up. It must be remembered that many advertising authorities doubt the efficacy of film theatre program advertising because there usually is not enough light sustained for a sufficiently long period to permit the thorough reading of the program. We do not necessarily object to the program listing; in fact, we like to see it as long as it carries *correct* information and is auxiliary to, but does not supersede the titles in the print itself.

- ¶ All in all, credit titles should not be cut, if only in plain justice to the people whose efforts are accredited thereon.

Thank You!

- ¶ In a kindly manner, a writer in the July 25th issue of the *Motion Picture News*, offers a criticism of L. E. Cuffe's projection article which appeared in this publication for June. While the *News* writer disagrees with Mr. Cuffe's manner of "projection" of his ideas, we cannot, after close analysis, refrain from believing that both agree with each other in the main, namely, that the importance of the projectionist in the ultimate success of the production should not be underestimated.
- ¶ We will not dispute the fact with the *News* writer that in the larger and more favored Eastern houses projection facilities may be such as to give little ground for complaint; on the other hand we do not believe that our contemporary will dispute the fact that projection facilities are far from being ideal generally, and that one of the most important ways in which to bring about this ideal stage is the closest possible working co-operation between projection and cinematography. We might point out that if these conditions were ideal, a thorough organization like Famous Players-Lasky wouldn't keep a man of the calibre of Earl J. Denison continuously in the field for the purpose of constantly improving projection throughout the country.
- ¶ However, we wish to thank the writer in the *News* for his criticism, for we believe that constructive criticism is one of the most vital forces in this industry, or art, as you will. Incidentally, we might state here again, as Mr. Denison noted in his foreword to Mr. Cuffe's article, that we shall always be glad to consider opinions on projection from anyone in the industry.
- ¶ In his advertising messages in the *Saturday Evening Post* on the Universal "White List" of productions, Carl Laemmle features the importance of the cinematographer along with directors and players in the making of these pictures. Mr. Laemmle's initiative is well taken, and, we trust, worthy of emulation in other quarters.

Way Cleared for Gaudio to Direct



Gaetano Gaudio's contract as chief cinematographer for Norma Talmadge productions has been waived by Joseph M. Schenck, who, impressed by the showing Gaudio has made as a director in his first two productions, has cleared the field for what promises to be a brilliant directorial career for the camera veteran.

Schenck volunteered to forego his claim to Gaudio's future services so that the latter could take advantage of more lucrative connections that have come his way as the result of his successful venture as a director.

Valued Aide

Gaudio has been one of Schenck's most valued aides for the past five years, having served as chief cinematographer on the foremost Norma Talmadge productions, including "The Eternal Flame," "Secrets," "The Lady" and "Graustark."

In Demand

When it became known that the A. S. C. member was no longer bound as chief cinematographer on productions starring Norma Talmadge, a singular situation arose wherein Gaudio's services are said to have been bid for by other producers for the camera work on their own productions, in spite of the fact that, as the result of the success of his efforts as a director in his first two features, Gaudio has had numerous directorial proffers to come in his direction. In the past, because of the permanency of his connection with the Schenck organization, Gaudio's cinematographic work was confined to Talmadge pictures, but as soon as he was no longer under contract his services were in demand in other sources.

The A. S. C. member has always been strenuously in de-



Gaetano Gaudio

mand, as evinced by the fact that during some of the lengthy periods "between pictures" on Talmadge vehicles, arrangements were made whereby he was "farmed out" to other large producers, having thus photographed John M. Stahl's "Husbands and Lovers," Corrine Griffith's "De classe" and Marion Davies in "Adam and Eva." He went from Hollywood to New York to make the latter, and returned to resume his connection with Talmadge productions on its completion.

Director-Cinematographer

Judging from recent developments, there seems to have

International Compiles Film of Decade's Thrills

International News Service, it is reported, is compiling a "feature" of all the important and thrilling shots taken by cinematographers of the service during the past ten years. As will be noted, this period extends well back into that of the recent war, and should bring an important cinematographic compilation before the public.

Impressed by A. S. C. Member's Showing as Director, Schenck Withdraws Claims on Services.

come about an interchangeability of the directorial and the cinematographic professions for those cinematographers who have become successful directors. This fact was accentuated in the case of "The Lost World" wherein First National, in producing the Watterson R. Rothacker presentation, made inducements attractive enough to temporarily lure Fred W. Jackman from his successful directorial career to supervise the filming of the intricate phases of the Doyle vehicle. As soon as Jackman, who, like Gaudio, is a former president of the A. S. C., finished his work on "The Lost World," he immediately resumed direction. That he is a master of the directorial-cinematographic change of pace is indicated by the fact that he stepped from one masterpiece into another, for it was "Black Cyclone" that he began directing after he had completed the First National production.

First Two

Gaudio has just finished the direction of his second Waldorf production, "Sealed Lips," the cast of which was headed by Dorothy Revier, the Waldorf star, and also in Cullen Landis. His first production was "The Price of Success," the cast numbering Alice Lake, Florence Turner, Gaston Glass and Lee Shumway.

Filmed by Landers

Sam Landers, A. S. C., photographed both productions. Outside of the remaining few already contracted for, Gaudio's two productions completed the Waldorf program for the coming year, the A. S. C. member, although adhering to a daylight working schedule, having finished both ahead of time.



H. Lyman Broening, A. S. C., has finished filming "The Girl Who Wouldn't Work," a B. P. Schulberg production. The cast included Lionel Barrymore, Lillyan Tashman, Henry Walthall, Marguerite De La Motte and Forrest Stanley.

* * * *

John W. Boyle, A. S. C., is still hard at work on the cinematography of "Vienesse Medley," the June Mathis First National production which is being directed by Curt Rehfeld.

* * * *

Bert Glennon, A. S. C., is photographing "Flower of Night," a Paramount production starring Pola Negri and directed by Paul Bern.

* * * *

L. Guy Wilky, A. S. C., is filming William C. de Mille's latest Paramount production, "New Brooms."

* * * *

Henry Sharp, A. S. C., is ready to shoot Douglas Fairbanks' next feature, "The Black Pirate." Sharp has been making preparations and selecting locations for some time.

* * * *

Charles Rosher, A. S. C., has begun the filming of "Scraps," Mary Pickford's next production. William Beaudine will again direct.

* * * *

Rollie Totheroh, A. S. C., is being lauded for his cinematography in "The Gold Rush," the Charlie Chaplin production which is being given its premiere engagement at the Grauman Egyptian theatre in Hollywood.

* * * *

Gilbert Warrenton, A. S. C., has completed the cinematography on "The Last Edition," an Emory Johnson production.

* * * *

Norbert F. Brodin, A. S. C., camera genius on Frank Lloyd productions, is enjoying his first vacation in many moons.

* * * *

Joseph Brotherton, A. S. C., has returned to Hollywood from a lengthy location trip out of the city.

* * * *

Dan Clark, A. S. C., has left for a location journey in various points in the West for the filming of the latest Fox production starring Tom Mix. Emmett Flynn is directing.

* * * *

Frank B. Good, A. S. C., has concluded preparations for the filming of the next Jackie Coogan production, "Old Clothes," which will be made at the Metro-Goldwyn-Mayer studios, Culver City. Edward Cline will direct.

Faxon Dean, A. S. C., has been chosen to film the Paramount production of Conrad's "Lord Jim," which Victor Fleming will direct.

* * * *

Charles G. Clarke, A. S. C., is photographing the current George Melford production at the Hollywood studios.

* * * *

Ernest Haller, A. S. C., has left for New York City for the filming of a Robert Kane production to be made there.

* * * *

Robert Kurrle, A. S. C., has concluded the filming of "The Sea Woman," an Edwin Carewe production for First National.

* * * *

Reginald Lyons, A. S. C., has finished shooting "A Man, Four Square," a Fox production starring Buck Jones.

* * * *

George Meehan, A. S. C., has shot the final scenes on the latest Waldorf production directed by Frank Strayer.

* * * *

Jackson J. Rose, A. S. C., is filming "The Midnight Sun," a Universal production directed by Dimitri Buchowetzki.

* * * *

Charles Van Enger, A. S. C., is making preparations for the photographing of Ernst Lubitsch's production of "Lady Windemere's Fan" for Warner Bros.

* * * *

J. D. Jennings, A. S. C., is filming "The Lone Eagle," an United Artists production starring Rudolph Valentino and directed by Clarence Brown.

* * * *

E. B. DuPar, A. S. C., has been putting in hot days on the desert filming a Warner Bros. production starring Rin-Tin-Tin and directed by Noel Smith, the cast numbering June Marlowe, Charles Farrell, Bill Walling and Pat Hartigan. It wasn't the 130 degrees heat that bothered Du Par so much as it was the necessity of his remaining away from his home in Los Angeles, for, be it known, the A. S. C. member became the father of a nine-pound baby girl on July 14th. To make matters worse, none of the members of the cast of the picture being photographed by Du Par would deign, because of the intense heat of the desert, to light up and smoke the cigars he so proudly proffered them.

* * * *

E. Burton Steene, A. S. C., Akeley specialist, was retained by Warner Bros. to film extra shots in the Rin-Tin-Tin vehicle on which Du Par is chief cinematographer.

Known Quality

In the art of picture production film dependability is obviously essential. The expense of preparing and rehearsing a single scene is too great to permit running risk of inferior results, or perhaps failure.

Such a situation clearly calls for Eastman Negative Film. Its unrivaled dependability is a known quality.

Eastman Film is identified by the words "Eastman" and "Kodak" in black letters in the film margin.

EASTMAN KODAK COMPANY
ROCHESTER, N. Y.

Eastman Announces New
Model of Cine-Kodak

(Continued from Page 6)

in focal plane without danger of abrasion or scratching and also eliminates the necessity of frequently cleaning the gate.

Operator May Take Own Picture

The exposure lever may be locked in operating position so that the operator may place the camera on a firm support and include himself in the action of the picture.

Same Stock

As this new model uses the same film as the original Cine-Kodak no duplication of stock on the dealers' shelves is necessary. It is 16 mm wide, of safety stock, and instead of the usual printing operation, the negative, through a special process, is reversed to a positive so that the identical strip of film that was used for exposure is used for projection as well.

The company announces that while it is not in position to fill immediate orders, plans are well under way to begin deliveries toward the end of the present month and to produce in quantities in mid-autumn.

New "Talking Pictures"

(Continued from Page 9)

Co. have retained all rights for other countries, and is represented in New York by F. A. Schroeder.

Although the older arts of telephony and photography had already given birth to a number of valuable apparatus, such as microphones, electric amplifiers, loud speakers, etc., it was gradually found that the existing apparatus were insufficient for the talking film. Hence a large number of special technical problems had to be solved anew. Large sums of money, considerable inventive and technical skill and valuable time were expended with this object.

Before treating this path of development more closely I should like in this place to mention some of the practical commercial results of the Triergon system, as they throw more light on the degree of perfection attained by this system than any technical explanations can do. In order to demonstrate the technical reliability of the apparatus, their convenience when traveling, the quality of their representations and their power of attracting the public, a tour was organized last winter in the Rhineland at the request of several parties. The apparatus No. 18 traveled with a film program of 2000 meters the towns of Cologne, Dusseldorf, Duisberg, Herne, Aachen, Solingen, Bonn, Munich, Rheydt, Oberhausen, Krafeld, etc. These exhibitions continued from November 7th to February 19th, and the results before the

(Continued on Page 18)

GOERZ

NEGATIVE RAW STOCK

**IS THE RAGE OF THE
NORTH POLE**

Both Arctic Expeditions
ROALD AMUNDSEN

and

DONALD B. MacMILLAN

are carrying it exclusively.



Sole Distributors:

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The ULTRASTIGMAT-f1.9

**Gets Shots that You
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all Without it**



"I use the Ultrastigmat a great deal in commercial work, as I find that I can make interiors with it that would require lights without it, and get outdoor shots on bad days that I could not get without it."

(Signed) QUINCY PEACOCK,
1611 Market St., Jacksonville, Fla.

Write for Folder

Gundlach-Manhattan Optical Co.

900 Clinton Street

ROCHESTER, N. Y.

WANTED

Bell Howell Camera complete. Will pay cash. Write Bert Glennon, A. S. C.

Static Markings on Motion Picture Film

Data as to their Nature,
Cause, and Methods of
Prevention.

By J. I. Crabtree
and C. E. Ives
(Research Laboratory
Eastman Kodak Company)

From Transactions, Society
of Motion Picture
Engineers.

(Continued from July issue, in which complete illustrations appeared.)

3. *Electrification of negative film in the cutting room.*

Since electrified film has a powerful attraction for dust particles, it is important to maintain a fairly high humidity in the cutting room in order to minimize the propensity of the electrified film to attract dust. Such humidification also tends to prevent printer static.

4. *Printer static.*

The largest proportion of static markings encountered in the laboratory are produced during printing, and especially with step printers. Static is rarely encountered with all-metal continuous printers.

In a step printer the film is subjected to excessive friction during the pull-down movement, especially with shrunken negatives. Static markings may, however, be prevented:

1. *By avoiding friction.*

All sprockets should be of correct dimensions and in alignment with the take-up roll. If the sprocket teeth are staggered, or if the take-up roll is in malalignment, excessive tension is exerted on one edge of the film. Too much tension should also be avoided at the take-up roll, while the loops should be adjusted to prevent any possibility of the film rubbing against itself or any part of the machine.

The printer should also be correctly "timed," that is, the pressure plate should be released before the pull-down movement commences and should not return in place before the film comes to rest. Although glass is not an ideal material for pressure plate construction in view of its nonconductivity, metal plates are unsatisfactory where a transparent plate is otherwise desired, while glass produces a minimum of scratches on the film. The pressure plate should be renewed whenever the surface becomes roughened.

2. *By humidifying the film.*

When motion picture positive film leaves the factory it is in equilibrium with an atmosphere of 70 to 75% relative humidity, but if the laboratory conditions are favorable for the production of static markings the quantity of moisture which the raw film contains is not sufficient to positively insure the absence of static during processing. It would be dangerous, however, to humidify the film further during manufacture, owing to the danger of the

formation of moisture spots when the film is stored.³ Since a certain lapse of time is necessary for moisture to affect the emulsion, it is possible to humidify film immediately previous to or during processing to an extent which would be dangerous if the film was to be subsequently stored.

3. *By humidifying the air in the printing room.*

If the printers were always in perfect adjustment and not run at too high a speed, a higher relative humidity than 75% at 70° to 75°F. would not be necessary in the printing room. In order to take care of the excessive friction to which the film is liable to be subjected if the printers get out of adjustment it is advisable to maintain the relative humidity at from 80% to 90% at 70° to 75°F. At such a high relative humidity the air feels uncomfortably cool to the worker at temperatures below 68°F. and oppressively warm above 75°F.

The exact relative humidity to be maintained depends on the particular machines used, the condition of the film, the temperature of the air, and time during which the film is exposed to the air before it is subjected to friction. The higher the temperature the lower is the relative humidity necessary to overcome a given tendency for static.

Usually the film is exposed to the air for only a few seconds before reaching the printer gate. This period may be prolonged by looping the film over several idler rollers before it reaches the gate. Such a procedure, however, is usually unnecessary if the negative is humidified as described below.

Methods of humidifying the air supply have been fully described in a previous communication.⁴ Since the air in the printing room is at a higher relative humidity than that in any other room, it is necessary to boost the humidity of the air supply locally, and this can be readily accomplished either by means of water spray jets or steam jets. A series of water spray jets operated by compressed air and inserted in the air line serve to immediately change the relative humidity and have the advantage of cooling the air in hot weather. In winter both steam and water sprays are often necessary.

3. "A Study of the Markings on Motion Picture Film Produced by Drops of Water, Condensed Water Vapor and Abnormal Drying Conditions," by J. I. Crabtree and G. E. Matthews, *Trans. Soc. M. P. Eng.*, Vol. 17, p. 29. *American Cinematographer*, January, 1925, p. 12.

4. "The Development of M. P. Film by the Reel and Tank Systems," by J. I. Crabtree, *Trans. Soc. M. P. Eng.*, Vol. 16, p. 163.

4. *By humidifying the negative previous to printing.*

One contributing factor in the production of printer static is the friction between the gelatine surface of the negative and the emulsion side of the positive film in the gate, and especially during the pull-down period with old, dried out, shrunken negative. This can be largely overcome by humidifying the negative previous to printing by rewinding slowly two or three times in an atmosphere of 80% relative humidity, or by treating the emulsion side of the film with a solution of grain alcohol containing 10% to 20% water. Treatment of the film with this solution would insure that it would not attract dust in the cutting room, while it would assist in the prevention of static markings on positive film in the printer.

¶ *Dangers of Over-Humidifying Motion Picture Film.*

Too much humidification of film is worse than none at all for the following reasons:

a. Moisture spots are liable to be produced if drops of water condense on the emulsion.³

b. On winding moist film, the convolutions may adhere locally, causing ferrotyping of the emulsion surface by virtue of being in contact with the polished base. On rewinding, the local adhesion of the film may cause more static markings than if the film had not been humidified in the first place.

c. Moistened film is more susceptible to thumb prints and abrasion marks than dry film.

d. Film which is too moist is apt to stick in the printer and may cause a stoppage, tearing of the perforations, or unsteadiness of the picture on the screen. Moist film is also apt to buckle, causing lack of contact in the printer with resulting loss of definition.

Joseph A. Dubray, A. S. C., has finished photographing "The Hidden Way," a Joseph De Grasse production, with a cast including Mary Carr, Tom Santschi, Gloria Grey, Ned Sparks and Arthur Rankin.

AMERICAN CINEMATOGRAPHER,
1219-20-21-22 Guaranty Bldg.,
6331 Hollywood Blvd., Hollywood, Calif.

Gentlemen: Please find enclosed three dollars (foreign rates additional), for one year's subscription to the AMERICAN CINEMATOGRAPHER, to begin with the issue of

....., 1925

Name

Address

Town

State

(Note: Camera Craft will be sent for a slight additional sum. Consult the clubbing offer.)



F 2. and F 2.5

Taylor Hobson Cooke Lenses

Admittedly the finest and most highly corrected anastigmats of these enormous working apertures. Speed with definition—an achievement incomparable in the cinematograph lens field of today.

Focus	F 2	F 2.5
1 3/4 in.	\$ 79.50	\$ 44.00
47 mm.	48.00
2 in.	101.00	59.00
3 in.	122.50	61.00
4 1/4 in.	180.00	91.00
5 1/4 in.	135.00

Prices do not include mounting in regular B. & H. standard micrometer mounts.

Also the famous long focus Taylor Hobson Cooke Telekinics are now available for cinematograph work in the sizes from 8 1/2 to 20 inches.

For all around long focus work the 6 1/4 inch Series 11 A at \$92.00 (not including mount) offers the speediest aperture of F 3.5—combines flatness of field with perfect color correction.

Taylor Hobson Cooke Lenses are all exquisitely finished and have our unqualified endorsement.

ESTABLISHED 1907
BELL & HOWELL CO.
BRANCHES: NEW YORK, HOLLYWOOD, CHICAGO.
1801 LARCHMONT AVE. CHICAGO.
UNITED STATES DISTRIBUTORS

GRAF

VARIABLE F.3 LENSES

For the Essentially Correct Proportion of Diffusion Indispensable on Every Production

50 M. M.	\$ 75.00
75 M. M.	75.00
100 M. M.	100.00

Now Available for Immediate Delivery

ESTABLISHED 1907
BELL & HOWELL CO.
BRANCHES: NEW YORK, HOLLYWOOD, CHICAGO.
1801 LARCHMONT AVE. CHICAGO.
Exclusive Distributors

(Continued from Page 15)

thousands who came to see them confirmed the inventors' faith in the apparatus.

First of all a new and properly working microphone had to be created for making the sound record, the so-called "Kathodophone." While microphones heretofore have made their records by mechanical means, such as membranes, carbon grabules, etc., the kathodophone obtains perfectly pure sounds, the inventors claim. The kathodophone works on an entirely new principle by which the sound exercises a direct influence on the electric current, being conveyed to an iron path which is switched into the electric circuit. As this new kind of microphone does not possess any mechanically moved parts the disturbing self-frequencies which can hardly be avoided in the case of ordinary microphones are eliminated.

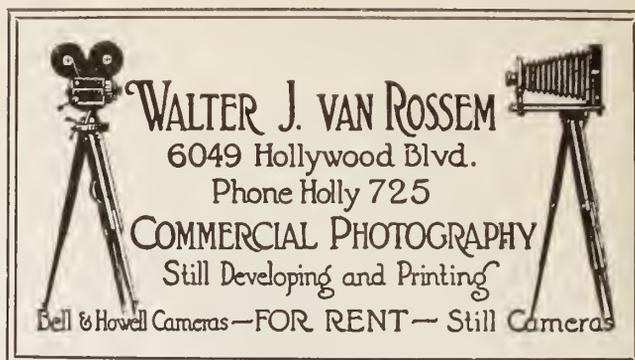
The second special task was the creation of an electrical amplifier of the same quality as the kathodophone. The difficulty of this task can be gauged by the fact that all the various sound frequencies had to be amplified a hundred thousand fold, whereas, as is known, the human ear needs between 5,000 and 20,000 frequencies a second.

The third stage in the development of the new film was the production of the so-called "ultra-frequency lamp," a recording lamp sensitive to sound, which transforms the vibrating electric current in the rhythm of the arriving sound-waves into a trembling luminous patch which illuminates the film. The usual sources of light, such as incandescent and arc-lamps, were found not adaptable for this purpose.

After this preliminary work the production of the picture-sound film record could be proceeded with, i. e., to capture all the sounds and tones simultaneously with the picture being screened. The development of the negatives, too, as well as the copying of the positives, or copies required special study.

Fig. A shows the Tri-Ergon projection apparatus for talking films. The apparatus possesses a contrivance similar to that which has long been used by astro-physicists for determining starriness. This photo cell is distinguished by the fact that it immediately reacts on every light impression with an electric impulse. In addition the projection apparatus has a graded amplifier which may be seen in Fig. A.

The perforation of the acoustic reel is the one universally used, so that the apparatus can also project ordinary films. This has a certain advantage when projecting both kinds of film, i. e., "dumb" and "talking" ones, at the same performance. The Tri-Ergon process is advocated as offering without further ado the possibility of providing any film with suitable accompanying music and thus replacing the expensive kinema orchestras. Instructive films and the like can also be accomplished by the necessary elucidations in any language. It goes with-



WALTER J. VAN ROSSEM
 6049 Hollywood Blvd.
 Phone Holly 725
COMMERCIAL PHOTOGRAPHY
 Still Developing and Printing
 Bell & Howell Cameras—FOR RENT—Still Cameras

The New Iris Combination may be had with 4-in. Iris or Sunshade
FRED HOEFNER
 Cinema and Experimental Work
 5319 Santa Monica Blvd. (rear)
Gladstone 0243 Los Angeles, Cal.

AKELEY SHOTS
 For the following current productions:
 Paramount's "Flower of the Night," starring Pola Negri, directed by Paul Bern, photographed by Bert Glennon, A. S. C.
 Warner Brothers' "Hogan's Alley," "Red Hot Tires," and others, Directed by Erle Kenton. Photographed by Chas. Van Enger, A. S. C.
 Maurice Tourneur's "Sporting Life,"
 Metro-Goldwyn-Mayer's "The Tower of Lies," with Lou Chaney and Norma Shearer.
 Universal's "The Still Alarm," photographed by John Stumar, A. S. C., and other Universal productions.
 Waldorf's "The Price of Success," directed by Gaetano Guadio, A. S. C., and photographed by Sam Landers, A. S. C.

E. Burton Steene
 Akeley Specialist
 Aerial and Special
 Photography
 FOR RENT—Akeley, Bell & Howell Cameras.
 Care of American Society of Cinematographers
 1219-20-21-22 Guaranty Bldg. - - Hollywood, Calif.
 HEmpstead 1191 - - - - - GRanite 4274

TREMONT
 FILM LABORATORIES CORP.
 1942-4 Jerome Avenue
 New York City
SPECIALIZING
 in
NEGATIVE DEVELOPING
FIRST POSITIVE PRINTING

FOR RENT
 Two Bell and Howell Cameras, 40, 50, 75 mm. lenses, Thalhammer iris. Jean Trebaol, Jr., 7042 Stilson Street, Palms, Calif. Telephone EMpire 8954.

out saying, too, that very interesting possibilities are thus opened out to advertising.

Fig. B shows the novel hornless loud speaker, the "Statophone," which is placed near or behind the projection screen, and produces the sound that gives the audience the illusion of the talking and musical film. It is hardly necessary to point out that this new loud speaker is of considerable importance to acoustics, especially as a broadcasting loud speaker.

Cinematographers Share Cast's Courageous Acts in Film Making

The cinematographer's skill prevents the taking of many useless chances on the part of the cast in motion pictures; yet with all this cinematographic adeptness, there is a splendid place for courage in the making of photoplays. And it may be definitely stated that whenever players do take chances, the cinematographer is there to share such with them, or the thrills would never reach the screen.

Apropos of the foregoing is the following account which appears under the caption of "Fake Stuff," written by W. D. McCarthy in his department, "Hollywood Week by Week," in Hollywood Magazine, a weekly community publication:

Patrons of movie houses in distant cities may some day wonder at the realism of the falls taken by cowboy riders in a "Western" picture that will be released by Fox, little realizing that injuries amounting to tragedy for some of the riders were received in the making of the scenes. Last week, near Chatsworth, some twenty-five miles from Hollywood, twenty screen cowboys were being "shot" while riding furiously down a narrow trail. A horse stumbled and fell, throwing his rider heavily. The following horse fell over the first, and the third animal over the other two, before their speed could be checked. Harry Woods, Emery Boggs and W. T. Sherman, the three unfortunate riders, were picked up unconscious and rushed to a Hollywood hospital. At first they were thought to be fatally injured, but last reports state that all will probably recover. Woods has eight fractured ribs and a broken shoulder. Sherman has two broken shoulders and a broken neck, while the third man escapes with bruises and an arm broken in four places. Needless to say, the falls were no part of the director's plan, but they will doubtless give many a "fan" reason to exclaim, "My, ain't it wonderful how they can fake these scenes?"

PYREX Spotlamp Condensers

ARE
GUARANTEED
AGAINST BREAKAGE

6-in.—8-in.—12-in. diameters

Used by:

Famous Players-Lasky,
United,
Metro-Goldwyn-Mayer,
First National studios.

Sole Distributors:

THE LUXALBA COMPANY
111 West 42nd St., New York

Just one production
with us
will make you our friend
for life.

Roy Davidge Film Laboratories

6701 Santa Monica Blvd. HOLLY 1944

SCHEIBE'S PHOTO-FILTER SPECIALTIES

Are now popular from coast to coast, and in some foreign countries.

If my many varieties do not always fill the bill, tell me your wants and I will make them on special order.

Always at your service.

GEO. H. SCHEIBE

1636 Lemoyne St. DUnkirk 4975 Los Angeles, Cal.

SUBSCRIBE FOR THE
**American
Cinematographer**

Will Inventive Genius Bring About Motion Pictures by Radio?

A writer in the Exhibitors' Trade Review, in which the following article appeared, dips into the future and opines that the seemingly impossible of the present may be a proven fact in the not distant future:

Concealed in recent news briefs was a seemingly insignificant item announcing that one C. Francis Jenkins, an inventor of Washington, D. C., is going to test his new idea of projecting motion pictures over the radio. If successful, this means that one central radio projecting machine can exhibit film productions on several screens simultaneously, including private exhibitions in homes. The inventor appears certain he can make his idea practical.

Not much attention is paid to the news dispatch. No noise accompanies it. Cynicism prevails among a few producers and exhibitors who have given the announcement their "once over." But—

Is it wise for anyone to place light estimate upon any idea, no matter how trivial or impossible it appears today? In this age of rushing progress, many small things today are big tomorrow.

Henry Ford's animated bicycle was a joke on the streets of Detroit for a long while, but Henry kept tinkering away at it until it brought him so many millions that he hardly knows how to count his wealth.

A kerosene lamp is a small thing, but Mrs. O'Leary's cow kicked it over and started the fire that burned Chicago.

A monkey playing with a mess of rubber cement from an overturned can is a trivial matter, but it gave to Tony Moss, an Oklahoma electrician, the idea which led him to the successful manufacture of an automobile tire patch which is now used in every state of the union and in all foreign countries wherever automobiles are known.

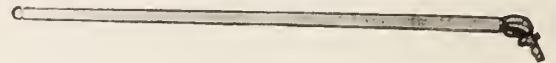
Seven years ago, a magazine writer tells us, Moss was making \$30 a week as an electrical worker. Now he is the millionaire head of a manufacturing company doing a quarter of a million dollar's worth of business monthly.

The digging of a backyard cellar by a laborer on Sunday in an Ohio village is an incident most commonplace, yet that backyard happened to be adjacent to a church where a preacher was delivering a sermon on Sabbath observation. As the workman's pick struck an occasional rock, he swore an occasional oath, and the clicketty-click of his pick threw discord into the church music, and the ever-recurring oaths of the cellar digger punctuated the parson's sermon in places where the rules did not call for punctuation. So, this intermingling of Sabbath desecration, and Sabbath sermonizing,

"Coops" for Proper Lighting

There is no individual thing more necessary to the production of artistic pictures than the right kind of light. Every camera man knows that days given to arrangement of sets are wasted if lights are not right when he shoots the scene. Then retakes are frequent and expensive.

Cooper Hewitts for many years have met the lighting requirements of leading studios. "Mike" Shannon can give you full particulars. Write him today.



COOPER HEWITT ELECTRIC CO.

HOBOKEN, NEW JERSEY

HOLLYWOOD OFFICE—7207 Santa Monica Bldg.
KEESE ENGINEERING CO., JOHN T. "MIKE" SHANNON, Mgr.

PARIS



BRUSSELS



VIENNA



ROME



MADRID



LISBON



JERUSALEM



LONDON

RENE GUISSART



Atmospheric Shots in Any
Part of Europe

*Taken according
to your own in-
structions in an
artistic manner to
match the pho-
graphy of your pro-
duction.*

OFFICIAL CORRESPONDENT IN
EUROPE FOR:

*American Society of
Cinematographers;
Frank D. Williams*

118 Avenue des Champs

Cable Address:
LOUVERANDE-PARIS

ELYSEES
PARIS

BERLIN



BUDAPEST



GENEVA



CAIRO



ATHENS



ALGIERS



ETC.



ETC.

small enough at the outset, resulted in crystalizing public sentiment to such an extent that a crusade for Sunday closing resulted and now that once-open Ohio town is so quiet and so Puritanical that traveling salesmen who happen to be there to spend Sunday can't even buy a copy of the city newspaper. And that--anyone who has ever journeyed Ohiowards or Kentuckywards must admit--is the very extreme in Sunday closing.

So, the animated bicycle in Detroit, the monkey and the cement in Oklahoma, the cow and the kerosene lamp in Chicago, and the cellar digger in Ohio--they all started something.

Radio photographs have already crossed the sea. Radio pictures are now being flashed across the country by police departments and the newspapers.

If a "still" can be made to appear by wireless, is it not within the range of possibility to animate such picture?

If that Washington inventor's idea is developed into a reality, if he succeeds in projecting pictures upon screens at a distance, if he thus brings about a picture show into private homes--what then?

Where would the exhibitor come in with his playhouse? What would producers do with their pictures? What would stars do with small salaries?

The idea back of the proposed plan is scoffed today because it is too small to receive notice. But--

The old adage, "Large oaks from little acorns grow" still holds good. It doesn't pay to despise, to ignore, to condemn small things today, for tomorrow they may be great.

E. Burton Steene, A. S. C.,
Has Busy Akeley Camera Month

E. Burton Steene, A. S. C., Akeley camera specialist, has had a month overcrowded with activity for his Akeley, and Bell and Howell cameras.

Steene has been called in on Paramount's "Flower of the Night," starring Pola Negri, directed by Paul Bern and photographed by Bert Glennon, A. S. C.; Warner Brothers' "Hogan's Alley" and "Red Hot Tires," the latter starring Monte Blue, directed by Erle Kenton and photographed by Charles Van Enger, A. S. C.; Maurice Tourneur's "Sporting Life"; Metro-Goldwyn-Mayer's "The Tower of Lies" with Lon Chaney and Norma Shearer; Universal's "The Still Alarm," photographed by John Stumar, A. S. C.; Waldorf's "The Prince of Success," directed by Gaetano Gaudio, A. S. C., photographed by Sam Landers, A. S. C., with a cast including Alice Lake, Florence Turner, Lee Shumway and Gaston Glass; as well as other Universal, Warner Brothers productions and features at the Fine Arts studios.



Among the many useful articles for which man craves possession, there is invariably the product of one particular manufacturer, which dominates all others.

From pipes to motor cars, from chewing gum to pianos--whatever the article may be--there is always one distinctive product, that is recognized as the *best*.

Few commodities dominate their field for general excellence, for outstanding superiority over all others, to such a marked degree, as do the products of Carl Zeiss, Jena, creators of the celebrated Tessar lens.

Harold M. Bennett
u. s. Agent
153 West 23rd Street
New York



A NEW LENS
"That has made good"

Large aperture F:2.3. To a large extent responsible for the Bas-relief, or solid appearance of the subject on the screen.
Good definition over the entire field, yet not harsh or wiry.

A portrait lens in short focal lengths
40mm, 50mm, 75mm, with full closing diaphragm.
Price is reasonable

40mm.....	\$50.00
50mm.....	50.00
75mm.....	55.00

A trial will be satisfying

ASTRO-GESELLSCHAFT, mbh., Berlin
FOR SALE BY
MITCHELL CAMERA CORPORATION
6025 Santa Monica Blvd. - - Los Angeles, Calif.

Ambiguous Advertising Scored

by National Vigilance Committee

The following bulletin from the National Vigilance Committee of the Associated Advertising Clubs of the World throws an entertaining light on truthful representations as to motion pictures:

The motion picture exhibitor whose patrons are partial to westerns is confronted with a curious trade development. Tom Mix has developed, over a period of several years, a considerable stellar reputation in this field. Recently there appeared on the horizon a producing unit styled "Art Mix Productions," also making westerns with a principal actor, costumed as Tom Mix usually appears on the screen, riding a horse which, by many who do not know horseflesh intimately, might easily be mistaken for Tony. Now comes the "William (Bill) Mix Productions," also producing westerns. Who's next? Shall we have "Richard (Dick) Mix Productions" and "Henry (Harry) Mix Productions" also?

Apparently it isn't necessary to act to get into this game. Such conscientious stars as G. M. Anderson, William S. Hart, Tom Mix, and Hoot Gibson seem to have labored quite unnecessarily. All that is needed, judging from these ventures, is a last name identical with that of a star who has already created a reputation. In the Art Mix Productions a hard-riding lad named Kesterson does the heavy work and draws the small type while the name of Art Mix looms with stellar prominence. In the William (Bill) Mix Productions, one Dick Carter, not William (Bill) Mix, occupies the principal saddle, only to have his name subordinated in the advertising. None of these producing Mix's, according to Tom Mix, are near enough relatives to be known to him.

The experienced exhibitor knows that these pictures, like any other westerns, must succeed or fail on their own merits. He knows that all this "Mixing" cannot put across westerns which would not go over just as well under any other name; and that if the public be led to believe by such advertising that these are Tom Mix pictures, or that any of these Mix's are related to, or like, Tom Mix, that the exhibitor who screens them will be the goat. He knows that theatre patrons' opinion of such advertising is analogous to his own irritation at advertisements of "M. F. Waterman Fountain Pens," "Art Hoover Suction Sweepers," or "William (Bill) Underwood Typewriters."

Knowing the importance of good will in the successful operation of a picture theatre, as in all other business, the intelligent exhibitor is less interested in the recent injunctions of the Superior Court for the County of Los Angeles against the advertising methods of the Art Mix Company and the Bill Mix Company than in the



Speed! Speed! Speed!

The Bausch & Lomb Ultra Rapid Anastigmat is an f:2.7. lens. This not only is its rated speed—it is the speed at which it actually performs.

Bausch & Lomb Optical Co.

*New York San Francisco Washington Chicago
Boston ROCHESTER, N. Y. London*

CRECO

FOR RENT!

**MITCHELL and BELL & HOWELL
CAMERAS**

F 2. 3. - F. 2. 7. - F. 3. 5. Lenses
40-50-75 M. M.

COMPLETE EQUIPMENT

J. R. LOCKWOOD

523 North Orange St.

Phone Glendale 3361 W

Glendale, California

Cinema Studios Supply Corp.

1438 Beachwood Drive

Holly 0819

LIGHTING EQUIPMENT FOR RENT

L. A. FIRE DEPARTMENT

WIND MACHINES

Water Engine

Requests for special position advertisements in the A. S. C. Annual of Cinematography are being honored in the order in which they are received.

importance of convincing his patrons that they will find upon his screen only and exactly what his lobby display heralds and newspaper copy lead them to expect.

A recent decree by the U. S. District Court for the Southern District of California deals so vigorously with the advertising of the William (Bill) Mix Productions, however, that a momentary consideration of some of its features is worth while. After providing specifically and exactly how posters, placards, screen titles and billboard paper, shall be worded "and not otherwise," it further provides that the name of the film advertised shall be three times the size of the words "William (Bill) Mix Productions, Inc." and the name of the feature performer, if any, shall be twice the size, size being applied not only as to height of type, but also as to consistency, thickness, boldness and prominence. Defendant is further ordered to label all photographs of a male performer featured in such exploitation with his own name in readable type. If any of the old advertising material of this defendant is to be employed, it shall be imprinted prominently with the words "not connected with any other producer or performer of similar name." The attitude of the Federal Court is based upon the reputation of the common law. It also reflects what every intelligent exhibitor knows to be the public interest.

Exhibitors of Tom Mix pictures will be interested in knowing, moreover, that the Cali-

fornia Court which enjoined the imitators of this popular western star is further assisting them to retain the confidence of their patrons by fining in a contempt proceeding the Art Mix Company and its manager for a violation of the decree.

**Coolidge Gives Congratulations
to Hays on "Greater Movie Season"**

In a letter to Will H. Hays, President Coolidge emphasizes the "real public value" of "Greater Movie Season," now in progress throughout the United States. His letter follows:

"My attention has been called to the fact that you are taking the twenty-ninth anniversary of the moving picture industry as an occasion to inaugurate a 'Greater Movie Season' campaign. Such a movement to emphasize the desirability of worthy motion pictures will be of real public value. The progress that has been made both in education and entertainment in this tremendous enterprise is an outstanding achievement of the opening years of this century. I congratulate you and wish you a continuation of your success."

A. S. C. Chooses Frank M. Cotner
and Ernest J. Crockett as Members

Frank M. Cotner and Ernest J. Crockett have been chosen for membership in the American Society of Cinematographers, according to an announcement from the A. S. C. Board of Governors.

Crockett

Crockett has been a cinematographer for the past eight years, and for two years and a half he has been in charge of the photographic department at the Mack Sennett studios. Crockett's name has been on every Mack Sennett picture for the last thirty months, he having made all of the chases, trick and special photography. For four years during the early part of his career, Crockett worked under the tutelage of Fred W. Jackman, who long was chief cinematographer at the Sennett studios.

Thrills

Crockett is at present filming a Sennett comedy directed by Del Lord, with Billie Bevan and Madelaine Hurlock. This latest Sennett production is no exception in Crockett's experiences for, as usual, it carries thrills galore for the cinematographer, including a couple of run-aways with horses, several hours of aerial work for special balloon sequences as well as working among a "herd" of lions at the Gay farm near Los Angeles.

Cotner

Cotner is widely experienced as a cinematographer, having numerous stellar features to his credit. For 1924-5, the productions photographed by him include the following Russell features: "The Fighting Cub" and "Battling Bunyan," with Wesley Barry; "His Own Law" with Barry and Jack Meehan; "The Rattler," "Broken Law," "Passing of Wolf McLane," "Hurricane Hal," "Son of Sontag," all with Meehan; Wanda Hawley and John Fox in "The Night Letter," and Gaston Glass in "Folly of Youth." For Goodwill productions he has photographed William Baley in "You're Fired," "Top Hand," "The Lash of the Law" and "Western Grit"; and Ken Maynard in "Haunted Range" and "The Demon Rider." He also filmed Leo Maloney in "Blood Bond," a Malaford production.

Harry Perry, A. S. C., Returns
from Long Arizona Location Trip

Harry Perry, A. S. C., has returned from a two months' location trip in the bake-oven regions of Arizona where he was in charge of cinematography for the Lucien Hubbard unit in the production of Famous Players-Lasky's "The Vanishing American." Harry has an extra strong longing for cool and shady places, for the time being.

What an Offer!

For a Clubbing Rate

Observe the Following:

American	
Cinematographer	\$3.00 per year
Camera Craft	1.50 per year
<hr/>	
Total for both	4.50 per year

But to those who take advantage of this special clubbing offer, both magazines will be sent to them for

\$3.40 Per Year

Save Money—
\$4.50 for \$3.40



American Cinematographer

1219-20-21-22 Guaranty Bldg.

Hollywood, California

Bell and Howell Distributors for Taylor Hobson Cooke Lenses

The Bell and Howell Company announces a complete line of Taylor Hobson Cooke lenses, including the F 2 and the F 2.5.

Bell and Howell are United States distributors for the lenses. B. and H. also have taken over the exclusive distribution of Graf lenses, which they are carrying for immediate delivery.

(Continued from Page 4)

projectors were Motiographs De Luxe with Superlite lenses. The first of the reflectors is placed directly in front of the lens. The images are projected into this and are "dropped" down six and one-half feet, where they are caught by a second reflector and thrown through a door, near the balcony floor, then out beneath the balcony railing and down the length of the ballroom to the screen, 145 feet away. Naturally everything had to be executed with the utmost precision. The condenser system is tandem. The objective is nine and one-third inches, E. F., with four-inch aperture. The screen is eleven by fifteen. The illumination is eight foot candles, six being generally used; mazda lighting is used.

Note: In Mr. Denison's projection article, in the July issue, page four, column two, paragraph three, line five, the word "not" was omitted. The sentence should have read: "The foremost authorities claim that condensers are not correctly located in the optical train."

Showing Films "on Dog" Spikes Canadian Complainant's Claims

The contribution of "A Canadian" to a London, England, newspaper is reprinted in a current number of the Literary Digest. The writer complains somewhat bitterly because the Canadians and the English are viewing motion pictures which are produced in America. He finds fault with the quality of American films, and states, in effect, that one of the reasons for this alleged low quality is that American motion pictures are not pre-viewed so as to eliminate uncertain scenes.

It may well be wondered whether this contributor, who holds himself out to speak authoritatively on American pictures to English readers, knows what he is talking about. American pictures never pre-viewed?

To think that this authority, who speaks so knowingly of Los Angeles' "manicured lawns," is in apparent ignorance of one of the most widely practiced "institutions" of filmdom—namely, that of taking the newly finished picture and "showing it on the dog!"

We wonder how, if he has ever been in Los Angeles, which he appears to know so much about, he has ever missed the signs, "preview tonight," which grace the lobbies of countless small theaters in Southern California?

We wonder if he knows how tensely those

who participated in the making of the picture sit through this first and informal, and almost anonymous, public screening—studying the audience intently and sometimes, breathlessly, to discover what effect each passage will have on the average "fan"?

The name of the picture, which is to be pre-viewed following the regular performance, is seldom announced, so that the producers may be assured that they are exhibiting before a "cold" audience, whose opinion, unaffected by advertising or otherwise, is probably the most straightforward, though unrecored, ever obtained.

For such reasons, the reactions of the audiences at these almost secret yet representative screenings are valued most highly by those who make pictures; and let the London complainant be assured that the producers have been known more than once to alter their film in accordance to the reception given to it when it was "shown on the dog."

Speed in Picture Making and Who the Actual Speeders Are

Of interest is the following which appears under the caption "Goulding's Speed Test," in a current issue of "Motion Picture News":

"Edmund Goulding made a whirlwind finish in picture shooting, breaking all existing records at the Metro-Goldwyn-Mayer studios. This feat wasn't accomplished in connection with his production, 'Sun-Up,' starring Pauline Starke and Conrad Nagel, but was merely a flyer, so to speak, being a trailer, featuring Norma Shearer and Lew Cody for advertising purposes, a one-reeler.

"It was 11 a. m. when Goulding got the assignment. The picture had to be finished by 6 p. m. for use in a San Francisco premiere. At 12:30 Goulding rushed Miss Shearer and Mr. Cody to three separate locations, used two studio sets, and by six o'clock he had finished 48 scenes. The film was cut and titled by eleven o'clock next morning and sent to San Francisco early in the afternoon. This, we'll say, was some speed stunt, and surely hangs up a new target for Goulding's contemporaries to shoot at."

After reading the account, one is left with the impression that, aside from the cast, no one but Mr. Goulding figured in the speedy happenings. With due regard for Mr. Goulding's efforts, those who have an idea that they are familiar with production details might timidly venture that perhaps reliable, as well as speedy laboratory workers, not to mention cinematographers, etc., might have had just a wee bit of participation in the speed shown!



Maurice Hoffman
 PRODUCTIONS
 HOLLYWOOD
 CALIFORNIA

June
 second
 1925

Bell & Howell Camera Co.,
 1807 Larchmont Avenue,
 Chicago, Illinois.

Gentlemen:

Old friends are too prone to be forgotten in this fast-moving age. Therefore, it gives me pleasure to recommend a friend that since the birth of our industry has been dependable and true.

The Bell & Howell Camera, of course!

My cameraman, Jack Mackenzie, has used a Bell & Howell camera for twelve years, and I have used one on all of my productions.

What more could be said?

Sincerely yours,

Maurice Hoffman

HOW TO LOCATE MEMBERS OF THE American Society of Cinematographers

Phone GRanite 4274

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- Abel, David—with Warner Brothers.
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 Beckway, Wm.—Europe.
 Benoit, Georges—with Hunt Stromberg Productions.
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 Boyle, John W.—with First National Productions, United Studios.
 Brodin, Norbert F.—Frank Lloyd Productions, First National, United Studios.
 Brotherton, Joseph—
 Clark, Dan—with Tom Mix, Fox Studio.
 Clarke, Chas. G.—with George Melford, Hollywood Studios.
 Cotner, Frank M.—with Goodwill Picture Corp.
 Cowling, Herford T.—Room 216-29 So. La Salle St., Chicago, Ill.
 Crockett, Ernest—with Mack Sennett Studios.
 Cronjager, Henry—with Famous Players-Lasky, New York City.
 Dean, Faxon M.—with Victor Fleening, Famous Players-Lasky.
 Doran, Robert V.—
 Dored, John—Riga, Latvia.
 DuPont, Max B.—
 DuPar, E. B.—with Warner Bros.
 Dubray, Joseph A.—
 Edeson, Arthur—with Sam Rork Productions, United Studios.
 Evans, Perry—
 Fildew, Wm.—
 Fischbeck, Harry A.—with Famous Players-Lasky, New York City.
 Fisher, Ross G.—with Fred Thomson, F. B. O. Studios.
 Gaudio, Gaetano—directing Waldorf Productions.
 Gilks, Alfred—with Famous Players-Lasky.
 Glennon, Bert—with Paul Bern, Famous Players-Lasky.
 Good, Frank B.—with Jackie Coogan Prod., Metro-Goldwyn-Mayer Studios.
 Gray, King D.—
 Griffin, Walter L.—
 Guissart, Rene—Paris, France.
 Haller, Ernest—with Robert Kane Prods., New York City.
 Heimerl, Alois G.—
 Jackman, Floyd—Fred W. Jackman Prods.
 Jackman, Fred W.—directing Fred W. Jackman Prods., Hal Roach Studios.
 Jennings, J. D.—with Rudolph Valentino Prods., United Studios.
 Koenekamp, Hans F.—with Larry Semon.
 Kull, Edward—with Universal.
 Kurlle, Robert—with Edwin Carewe, United Studios.
 Edison, Thomas A.—Honorary Member.
 Webb, Arthur C.—Attorney.
 Landers, Sam—with Tony Gaudio.
 Lockwood, J. R.—
 Lundin, Walter—with Harold Lloyd Productions, Hollywood Studios.
 Lyons, Reginald—with Fox Studio.
 Marshall, Wm.—with Carlos Prods.
 McCord, T. D.—with First National, United Studios.
 McGill, Barney—
 MacLean, Kenneth G.—with Warner Bros.
 Meehan, George—with Waldorf Studios.
 Milner, Victor—with R. A. Walsh, Famous Players-Lasky.
 Morgan, Ira H.—with Cosmopolitan.
 Norton, Stephen S.—F. B. O. Studios.
 Palmer, Ernest S.—with Fox Studio.
 Perry, Harry—
 Perry, Paul P.—with Universal.
 Polito, Sol—with Hunt Stromberg Productions.
 Ries, Park J.—
 Rizard, George—New York City.
 Roos, Len H.—with Fox Film Corp. (N. Y.) (Educational Div.) in Australia.
 Rose, Jackson J.—with Universal.
 Rosher, Charles—with Mary Pickford, Pickford-Fairbanks Studio.
 Schneiderman, George—with Fox Studio.
 Scott, Homer A.—
 Seitz, John F.—with Rex Ingram, Europe.
 Sharp, Henry—with Douglas Fairbanks, Pickford-Fairbanks Studio.
 Short, Don—
 Smith, Steve, Jr.—
 Steene, E. Burton—
 Stumar, Charles—with Universal.
 Stumar, John—with Universal.
 Tolhurst, Louis H.—"Secrets of Life," Microscopic Pictures, Principal Pictures Corporation.
 Totheroh, Rollie H.—with Charlie Chaplin, Chaplin Studio.
 Turner, J. Robert—with Fox Studios.
 Van Buren, Ned—
 Van Enger, Charles—with Ernst Lubitsch, Warner Brothers
 Van Trees, James C.—
 Warrenton, Gilbert—
 Wenstrom, Harold—
 Whitman, Philip H.—with Famous Players-Lasky, New York City.
 Wilky, L. Guy—with William de Mille, Famous Players-Lasky.

Meetings of the American Society of Cinematographers are held every Monday evening. On the first and the third Monday of each month the open meeting is held; and on the second and the fourth, the meeting of the Board of Governors.

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 Hollywood Boulevard and Ivar Avenue
 HOLLYWOOD, CALIFORNIA

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PROGRESS

ART



PHOTO BY HOLLAND ADAMS

UNITED STUDIOS, Inc.
8241 MELBOURNE AVENUE
LOS ANGELES

January 2, 1926.

Mr. H. P. Boeger,
Mitchell Camera Company,
Los Angeles, California.

Dear Mr. Boeger,

A Mitchell camera.
Enough said!

*Very truly yours,
Darryl F. Zanuck*

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October, 1925

American Cinematographer

Published by the American Society of Cinematographers, Inc.



A. S. C.
Annual
Number

PUBLISHED IN HOLLYWOOD CALIFORNIA

RELEASES

August 30, 1925 to October 1, 1925

TITLE	PHOTOGRAPHED BY
The Gold Rush	R. H. Totheroh, member A. S. C.
Siegfried	Carl Hoffman and Gunther Rittau
The Merry Widow	Oliver Marsh
Her Sister from Paris	Arthur Edeson, member A. S. C.
Where Was I?	Charles Stumar, member A. S. C.
Winds of Chance	Norbert Brodin, member A. S. C.
In the Name of Love	C. Edgar Schoenbaum
Wreckage	King Gray, member A. S. C.
The Wanderer	Victor Milner, member A. S. C.
Souls for Sables	Paul Perry, member A. S. C.
The Wheel	Glen McWilliams
Hell's Highroad	Peeverell Marley
California Straight Ahead	Gilbert Warrenton, member A. S. C.
The Mystic	Ira Morgan, member A. S. C.
Seven Days	Gilbert Warrenton, member A. S. C.
The Man Who Found Himself	Alvin Wyckoff
Greater Than a Crown	Joe August
The Thoroughbred	Rowland Price
The Call of Courage	Edward Linden
High and Handsome	Ernest Haller, member A. S. C.
The Phantom of the Opera	Charles Van Enger, member A. S. C.
The Coast of Folly	George Webber
The Limited Mail	Charles Van Enger, member A. S. C.
With This Ring	A. Freid
The Golden Princess	Not credited
The Wife Who Wasn't Wanted	John Mescall
The Haunted Ranch	Frank Cotner, member A. S. C.
The Great Sensation	George Meehan, member A. S. C.
Havoc	G. O. Post
Going the Limit	Alfred Gosden
The Police Patrol	C. J. Davis and J. Brown
The Speed Demon	Not credited
The Pony Express	Karl Brown
His Majesty Bunker Bean	Byron Haskins
The Storm Breaker	Jackson J. Rose, member A. S. C.
The Scarlet West	Georges Benoit, member A. S. C.
Graustark	Tony Gaudio, member A. S. C.
The Coming of Amos	Arthur Miller
Sporting Life	Arthur Todd
Shore Leave	Roy Overbaugh
Was It Bigamy?	Ernest Miller
Peggy of the Secret Service	Bob Cline
Tessie	Merritt Gerstad
Below the Line	John Mescall and Meritt Gerstad
The Love Hour	E. B. Dupar
The Bad Lands	Sol Polito and Georges Benoit, members A. S. C.
The Fighting Heart	Joe August
The Plastic Age	Gilbert Warrenton, member A.S.C.
The Circle	Chester Lyons
The Cyclone Cavalier	H. Lyman Broening, member A. S. C.
Bustin' Through	Wm. Nobles
Let's Go, Gallagher	John Leezer and John Thompson
The Tower of Lies	Percy Hilburn
The Man on the Box	Nick Barrows

American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

J. W. PARTRIDGE, *Managing Editor*

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A. S. C. Roster —	

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Critics Pick Best Cinematography for Past Year

First Attempt to Designate Superior Photography Brings Great Commendation

By Foster Goss

Experts Pay Tribute to Camera Artists' Contributions to Film Production.

The accompanying pages present the selections of the motion picture productions with the best cinematography during the past year as made

by eminent critics on newspapers and periodicals throughout the United States.

Because of the fact that various productions are shown in certain of the larger cities of the country many months before they are exhibited in other locations and hence before critics in such sections have an opportunity to view them, no absolute exactitude could be arrived at in laying down an inflexible line of demarcation for the beginning and end of a period of one year on which to base the calculations. However, the selections in the main cover a common ground, making, in all, for an interesting feature that never has been essayed heretofore.

The statements of these celebrated critics are a positive revelation. They indicate that these experts on critical appraisal are keenly alive to what has been made possible through the superiority of cinematography and its consistent progress. That those who are responsible for the excellence of motion photography are in charge of one of the major factors in the success of the photoplay is definitely established.

No attempt has been made to pick a composite number of five, or of fewer or more,

productions with the best cinematography of the past year. The fact that the critics had to delve into retrospect at the end of a period of one

(Continued on Page 5)

R. E. Sherwood

—Motion Picture Editor, Life, New York City:

It is difficult for me to select the five productions with the best photography in the past year as I am so utterly ignorant of the technical side of movie production and therefore attach little conviction to my selections.

The best photography that I have ever seen is in "The Wanderer," and next to that I should select—

He Who Gets Slapped.
The Unholy Three.
Don Q and
A Lost Lady.

I may say that in my estimation the cameramen do their work consistently well throughout the industry as a whole and are responsible for most of the progress that the motion picture has made. I wish that I could say as much for the actors, directors and continuity writers.

Guy Price

—Drama Editor, Los Angeles Evening Herald:

For my selection of motion pictures revealing the best photography during the year, would say, off-hand, that they ranked in this order:

1. Peter Pan.
2. Grass.
3. The White Desert.
4. The Iron Horse.
5. The Thundering Herd and The Gold Rush.

H. K. Cruikshank

—Associate Editor, Exhibitors Trade Review, New York City:

My opinion is that the finest photography shown in recent months is contained in the following productions:

1. Beggar on Horseback.
2. The Lost World.
3. Romola.
4. Don Q.
5. The Black Cyclone.

If colored photography is to be considered, The Wanderer of The Wasteland must have its place.

Helen R. Spear

—Motion Picture Editor, Milwaukee Sentinel:

At a moment's notice it is rather hard to review an entire year's parade of pictures so I may be wrong and have gotten picturesqueness and photography mixed. But as I recall the following were the pictures which held longest in my memory for qualities of lighting and photography:

1. The White Sister.
2. Monsieur Beaucaire.
3. The Last Laugh.
4. Wanderer of the Wasteland.
5. Thief of Bagdad.

I am not sure I have them in the right sequence; all I know is that there was enough beauty in each to be remembered long afterwards.

"Danny" Stresses Cinematographers' Progress

Editor of "Film Daily" Sees Great Improvement in Film Photography in Recent Years

By Danny

Cites Ten Productions with Outstanding Camera Work for Period of Last Twelve Months

That day has long since passed when the ordinary shooting, haphazard photography and other annoying instances of this type are found in pictures.

That day has passed when a motion picture can expect to receive a semi-cordial reception from the discerning public unless the photography is excellent.

There was a time—not long ago—when a producer could "get away with anything," which included poor photography and bad lighting. Not so today. And tomorrow there will be found more difficulty because the standard of the photography demanded today calls for all the ability, all the effort that even the best cinematographer can give.

It is an exceedingly difficult matter in these days of fine photography to attempt to enumerate a few productions and to say that the photography in these entitles them to first, second and third rating, etc. There have been so many pictures with excellent photography that the attempt to hold this list down to five or ten, makes for an almost impossible task.

Among the productions for the season beginning Septem-

ber, 1924, ending September, 1925, in which photography of an unusually excellent

standard was found, were the following:

- Peter Pan.....Jimmy Howe
- Don Q.....Henry Sharp
- The Lady.....Tony Gaudio
- Enticement.....Henry Sharp
- The Thundering Herd.....Lucien Andriot
- Grass.....Ernest Schoedsack
- The Goose Woman.....Milton Moore
- The Great Divide.....Percy Hilburn
- Romola.....Roy Overbaugh

A record of fine camera work for the year will be lacking without mention being made of that supreme patience which was manifested in the camera work of "The Lost World." Arthur Edson is deserving of much credit for this.

The development of color processes with some outstanding photography during the past year, should be mentioned. In this connection, Von Stroheim's "Merry Widow" in which Oliver Marsh did the camera work, should be mentioned.

(Continued from Page 4)

year, rather than being notified at the beginning of that time so that they could specifically weigh the cinematography of each picture as they went along, made for a disadvantage insofar as a definite point of composite choosing was concerned. Hence, all the productions chosen are being presented on a single roll of honor in the aggregate, while the selections of the various critics, are, in addition, being presented separately, together with the observations of such critics.

Helen de Motte

—Motion Picture Editor, News - Leader, Richmond, Va.:

Mr. Foster Goss, Amer. Soc. of Cinematographers, Inc., Hollywood, Calif. Dear Sir:

Your letter in regard to the first annual of the "A. S. C.," written on August 5th came during my absence on vacation. I am sorry not to be able to respond to it definitely, for while I have a very definite impression of the photography in a picture while I am seeing it, I do not carry it in my mind sufficiently clearly to be able to make a list of five in the order of their excellence. The photography of all the pictures is so marvelous, that I regret not being able to write more definitely about it in my criticisms.

I do not suppose any critic can fully appreciate the craftsmanship that goes into this unit of picture making, nor do we know more than the general public how much of it is legitimate and how much trick photography of various sorts. My chief impressions are in regard to tonal beauty, composition and lighting, and just how far the credit goes to the photographer and how much to the director and art director, I am not able to distinguish. There is, of course, always the wonder of such work as the parting of the waters in "The Ten Commandments," but that to me is not so much fine photography as it is a clever mechanical contrivance. I am always conscious of the shimmering grays of Rex Ingram's pictures and of the deep velvety tones William de Mille uses. There was the exquisite last scene of "Robin Hood." But on the whole, I can only admire in general the achievements of the cinematographers.

Regretting that I cannot particularize according to your request, I am,

Very truly yours,

(Signed) HELEN DE MOTTE



Geo. Schneiderman, A. S. C.

A. S. C. Members

—among those whose work honored by critics designating outstanding motion photography



Philip H. Whitman, A. S. C.



Rollie Totheroh, A. S. C.



Victor Milner, A. S. C.



Homer Scott, A. S. C.



Arthur Edeson, A. S. C.



Gaetano Gaudio, A. S. C.



Henry Sharp, A. S. C.



Fred W. Jackman, A. S. C.

Roll of Honor

—of productions chosen by critics for outstanding cinematography for past year



Floyd Jackman, A. S. C.



TITLE	PHOTOGRAPHED BY
DON Q*	<i>Henry Sharp</i>
BEGGAR ON HORSEBACK	<i>Karl Brown</i>
THE LOST WORLD	<i>Arthur Edeson, Fred W. Jackman, Homer Scott, J. D. Jennings</i>
ROMOLA†	<i>Roy Overbaugh</i>
BLACK CYCLONE	<i>Floyd Jackman</i>
PETER PAN†	<i>James Howe</i>
GRASS†	<i>Ernest Schoedsack</i>
THE WHITE DESERT	<i>Percy Hilburn</i>
THE IRON HORSE	<i>George Schneiderman</i>
THE THUNDERING HERD†	<i>Lucien Andriot</i>
THE GOLD RUSH	<i>R. H. Tothoroh</i>
THE WANDERER	<i>Victor Milner</i>
HE WHO GETS SLAPPED	<i>Milton Moore</i>
THE UNHOLY THREE	<i>David Kesson</i>
A LOST LADY	<i>David Abel</i>
THE WHITE SISTER	<i>Roy Overbaugh</i>
MONSIEUR BEAUCAIRE	<i>Harry Fischbeck</i>
THE LAST LAUGH	<i>Karl Freund</i>
WANDERER OF THE WASTELAND	<i>Chas. Schoenbaum, J. A. Ball, Ray Rennahan</i>
THE THIEF OF BAGDAD	<i>Arthur Edeson, Philip H. Whitman, Kenneth G. MacLean</i>
THE LADY	<i>Gaetano Gaudio</i>
ENTICEMENT	<i>Henry Sharp</i>
THE GOOSE WOMAN	<i>Milton Moore</i>
THE GREAT DIVIDE	<i>Percy Hilburn</i>

Note: Only those productions which were specifically picked by the various critics are listed herewith; those mentioned collaterally are not included.

* Picked three times.

† Picked twice.

Rex B. Goodcell Speaks Before A. S. C. By J. W. Partridge

Collector of Internal
Revenue in Speech
at Open Meeting

A stirring tribute to the achievements of the American Society of Cinematographers was paid by Rex B. Goodcell, United States Collector of Internal Revenue for the Southern California district, at the open meeting in the society's auditorium in the Guaranty Building, Hollywood, on the evening of October 19. Judge Goodcell, a noted orator, made one of the most inspiring talks of his career and at its conclusion was given an ovation by the members of the society.

"Loyalty, Progress and Art," the slogan of the American Society of Cinematographers furnished Judge Goodcell with the theme for an address that was characterized by his auditors as "masterly in its profundity of wisdom and wit" and as "offering a perfect outline of the aims and aspirations of the cinematographers."

Judge Goodcell chose as his topic the A. S. C. slogan "because" as he phrased it, "the motto carried with it the very fundamentals of Americanism."

The meeting was called to order by Victor Milner, first vice president of the American Society of Cinematographers, who presided, owing to the illness of President Homer Scott. After Bert Glennon, A. S. C., had given a brief but comprehensive speech on the aims and purposes of the society and its magazine, the *American Cinematographer*, Judge Goodcell was introduced by Sam Curson of the Holly-

wood firm of Graves, Curson and Boyle.

"I am much more interested in the humane side of any organization than in its commercial aspect," Mr. Goodcell began. "Your slogan of 'Loyalty, Progress and Art' indicated to my mind that the American Society of Cinematographers is not overlooking the human aspect and for that reason I am more than happy at this opportunity of addressing this meeting.

"Loyalty is one of the finest characteristics of the human family. Loyalty to one another and to our government is what has made the United States the foremost country in the world. Loyalty is what Patrick Henry meant when he coined his everlasting phrase, 'United We Stand, Divided We Fall.' And your loyalty to one another, gentlemen, and your loyalty to your employer and to your organization—the American Society of Cinematographers—is one of the outstanding reasons for its being generally recognized as one of the most successful organizations in the film industry.

"You cinematographers have made progress—wonderful progress. You've probably made more progress than any other branch of the industry. Compare your work of ten years ago with that of today. Your branch of the film industry cannot stand still. You must go on making progress if you are to survive. Ten years from today the photography as exemplified in current films will be just as obsolete as that of a decade ago—thanks to your efforts.

"But your slogan shows that your members are alive to the ever increasing demands of your profession. You meet, I understand, for an interchange of ideas. That indicates the interest you take in your work and your profession.

"You gentlemen make splendid achievements but you are absolutely dependent upon the members of other industries, entirely foreign to your own, for your well-being and prosperity. A strike in the anthracite coal fields of Pennsylvania; a blight on the cotton crop in the sunny South; a killing frost in the world-famous apple belt of the Hood River district in Oregon, or a slump in the automobile industry with headquarters in Detroit reacts against the film industry here in Hollywood. The districts affected by such calamities suffer financially, there is a falling off in attendance in moving picture houses with a consequent curtailment of demand for Hollywood films and as a result, there is less work for you cinematographers.

"I often wonder if you gentlemen realize the effect that your work has on the public in general and the good that you have in your power to wield. And, too, it is a great responsibility. Thousands of people go to the moving picture houses to relax and to forget the trials and tribulations incidental to their daily duties. If the photography is well-done and the story told on the silver sheet

(Continued on Page 21)

Qualifications for the Projectionist

By Earl J. Denison

Something More *than*
Knowledge of Electric-
ity Found Necessary

With the exception of finance, direction and distribution, the motion picture industry is largely a mechanical one and the mechanics of the business require highly specialized and skillful workers. Certainly, no one can dispute the fact that the picture is of no commercial value until shown in the theatre, and unless film is properly handled and projected, the presentation is marred.

What are the qualifications of one who is in charge of the mechanical presentation of a picture?

Many Phases

I will go on record in saying that I believe that the average projectionist has been improperly schooled in the art of presenting a picture. The average projectionist has been recruited from the ranks of electrical workers and his knowledge of projection is mostly "electrical." However, there are several more important elements necessary to high class projection, namely: Photography, optics, mechanics of the projector, mechanics of the film, various kinds of light sources and their quality, proportions, etc.

With rare exceptions, the actual wiring of a projection room is handled by an electrical contracting firm and there is no choice as to the kind of current or line voltage. The installation is completed by equipping the layout with a motor generator, transvertor, or a transformer of some kind and the projectionist's knowledge of electricity should start where the installing electrician stops. As electricity is manifested in various forms of light, heat and energy, at least a good working knowledge of carbons, their size, care, structure, carrying capacity, gas forming qualities, the quality of light, etc., would be a lot more valuable to the projectionist than a thorough knowledge of wiring.

However, in most large cities, the applicant for a projectionist's license is examined mostly for his knowledge and skill as an electrician, practically no attention being paid to optics, photography, mechanics of the film, mechanics of the projector, etc. Also a great many of the questions asked in these examinations are "catch questions" and the writer knows one or two instances where highly skilled electrical engineers failed in passing

these examinations, due to "catch questions."

Projection in the theatres is rapidly developing into an art and it really is an art for a man to project a picture and get 100 per cent results, but it is utterly impossible for him to get 100 per cent results unless he is familiar with photography, optics, mechanics of the film, light and the various qualities of light.

First, the projectionist must know about the optical set-up of the projection equipment in order to determine whether or not he is getting maximum results and whether or not it has the proper optical system for the particular theatre in which he is working, and in order to accomplish this, he must be familiar with lenses, so as to understand the action of light passing through them. He must also understand proportion, in order that he may judge the size of the picture for any given width or length of a theatre. Certainly, he must understand considerable about the mechanics of the film, for positive prints used in theatres are absolutely a fixed thing. Photography cannot be changed; size or dimensions of the film or its perforations cannot be changed; size or dimensions of the film or its perforations cannot be changed, and a great deal can be accomplished through a better knowledge of the film. Photographically and mechanically, the film is a medium through which the picture is presented on the screen, and it is highly important that the projectionist know something about photography and photographic qualities, because photography deals in lights and shadows and the presentation of a picture can be easily marred through ignorance of photography.

Over-Lighting

The film is essentially a stencil and should be projected with the absolute minimum of light consistent with good definition and easy vision in any part of the theatre. The writer has personally seen beautiful photography utterly ruined through over lighting of the film. The pictures appear exceptionally flat and washed out; this angle should be studied very carefully by every projectionist who is interested in quality projection.

I dare say there are very few projectionists who ever use a photometer or an illuminator to determine the actual screen brilliancy;

(Continued on Page 16)

The EDITORS' LENS . . . focused by FOSTER GOSS

A Successful Trial

- ¶ The *American Cinematographer* is exceedingly gratified over the results of its first effort to sponsor, through the co-operation of critics throughout the United States, the selection of the motion picture productions with the best cinematography during the past year.
- ¶ So impressed is this publication with the interest manifested that every effort will be made to establish the selection as an annual event. With this intention announced at the beginning of a year's period the task of the critics, who have given their co-operation so kindly, will be simplified in a degree that was impossible for the making of the first choices as are presented in other pages of this issue.
- ¶ It is now more firmly believed than ever that the election of the productions with the best cinematography provides a matter of basic interest to all those who are concerned with the making of motion pictures. After all, cinematography is fundamental, and everything that is done to encourage its progress creates for the benefit of the industry as a whole. The American Society of Cinematographers is not alone in this conviction as is clearly shown by the statements of various of the famous critics whose selections we have the honor to give in this issue.
- ¶ What is particularly urged is that critics who have been too pre-occupied in the past to give direct attention to the cinematography in the productions which they criticize will find it possible to devote part of their attention to such. We admit, as was stated in the replies of a number of prominent critics to the invitations of this publication to participate in the designation of the productions with the "best cinematography," that the matter of motion photography involves a high degree of scientific and technical knowledge. We do, however, respectfully suggest that

no review of a motion picture can be logically complete without giving due attention to the cinematography which it embodies—or which embodies it. If some of our leading critics are not according cinematographic efforts such recognition because of what they candidly admit to be their ignorance of the subject, then it would seem that it behooves them to acquire as thorough a mastery as possible of matter with which they have dealt under the color of authority in the past. We observe the foregoing with abiding concern, and in justice not only to the cinematographer but to the critics themselves and to the thousands of readers who look upon them as authorities.

- ¶ If an ignorance of cinematography precludes such critics from writing about it, we believe that the manner in which to make their contributions to their publications even more comprehensive would be to give as much attention, comparatively, to a study of motion photography as they have given to the study of the drama itself. If there is any way in which the American Society of Cinematographers may co-operate in such study, nothing will be left unturned to do so. We believe that this offer meets the spirit of those critics who state that they have avoided cinematography because of their lack of knowledge of it. At any rate, we are more confirmed in the conviction than ever that progressive reviewers and motion picture editors will bestow an increasing amount of cognizance on the cinematographer.
- ¶ As satisfied as we are with the initial attempt at assembling the critics' designations of superior cinematography, we believe that the idea will be fulfilled even more next year. We trust that the critics who found themselves unable to participate on this occasion will be in a position to favor the readers with their opinions next year. If, in the meantime, we can do anything to further the means to such an end, we are awaiting instructions at all times.



John W. Boyle, A. S. C., has finished filming "Viennese Medley," the First National special production supervised by June Mathis and directed by Curt Rehfeld.

Boyle has begun work on "The Far Cry," a First National production which Silvano Balboni will direct. The cast includes Blanche Sweet, Jack Mulhall and Leo White. The story concerns an American family living in foreign capitals as well as in New York City. Thus, with Paris and Venice providing important sequences of the background, Boyle once again will be recording an European theme for the screen.

* * * *

William Beckway, A. S. C., has returned to Hollywood following an extensive journey to Europe, where he filmed for a production made abroad, not as yet released here, many locations in London as well as in Berlin.

* * * *

George Benoit, A. S. C., is filming his first production under his new contract with Metropolitan. It is "The Bride," starring Priscilla Dean and directed by Edward Dillon. This is not Benoit's first association with Dillon. He was with him as far back as 1913, for a period of two years, during the prime of the old Fine Arts studios.

* * * *

Norbert Brodin, A. S. C., is catching his breath after a busied production program long enough to move into his new home. Norbert will have a spell of rest for the time being, Frank Lloyd, his director, having departed for an extended vacation.

* * * *

Frank M. Cotner, A. S. C., was formally initiated into the society at the open meetings of October 19th.

* * * *

Herford Tynes Cowling, A. S. C., attended the recent fall meeting of the Society of Motion Picture Engineers at Roscoe, N. Y. Cowling was particularly impressed with the paper read by E. T. Clark, manager of the Eastman Theatre, Rochester, N. Y., emphasizing screen credit due the cinematographer. Clark recommended credit to direction and

cinematography at all times, and stated that he often considered the photography superior to the direction.

* * * *

Jackson J. Rose, A. S. C., is taking his first vacation in many productions filmed by him at Universal City.

* * * *

Henry Sharp, A. S. C., is working day and night on the cinematography of "The Black Pirate," Douglas Fairbanks' latest production.

* * * *

George Schneiderman, A. S. C., is completing filming "Three Bad Men," the latest John Ford production for Fox. This is said to be one of the most promising of Ford's offerings, and the same applies to Schneiderman's photography. The cast includes George O'Brien, J. Farrell McDonald, Tom Sant-schi, Frank Campeau, Olive Borden, Priscilla Bonner and Grace Gordon.

* * * *

Bert Glennon, A. S. C., has finished the photography on "The Mysterious Woman," Paramount production starring Pola Negri. Mal St. Clair directed.

* * * *

Faxon Dean, A. S. C., is filming the latest Cecil B. De Mille production to be directed by Alan Hale for Producers Distributing Corporation release.

* * * *

Steve Smith, Jr., A. S. C., has completed the photographing of "The Countess of Luxembourg," a Chadwick production featuring George Walsh and Helen Worthing.

* * * *

Victor Milner, A. S. C., is photographing "Hassan," R. A. Walsh's latest production for Famous Players-Lasky. Like "The Wanderer," this is to be another costume spectacle. The cast includes Buster Collier, Greta Nissen and Ernest Torrence.

* * * *

Reginald Lyons, A. S. C., has completed the filming of "Desert Price," Buck Jones' latest starring vehicle for Fox.

Eastman Communications for 11 Years

Digest of Papers from Research Laboratory in Rochester Compiled Herewith



Comprehensive Key to Historic Treatises on Varied Cinematographic Subjects

Following is an important list of communications on cinematography from the Eastman Kodak Company Research Laboratory, Rochester, N. Y. These communications cover a period of the past eleven years, beginning with Communication No. 5 and ending with Communication No. 238.

- No. 5. The Triple Projection Process of Color Photography, by C. E. K. Mees; published Abel's Phot. Weekly (1914) p. 5; Brit. J. Phot. (1914) p. 14.
- No. 30. Relative Photographic and Visual Efficiencies, by L. A. Jones, M. B. Hodgson and K. Huse; published Frank Inst. (1915) p. 484; Br. J. Phot. (1915) p. 42-47 (1916) p. 8.
- No. 74. A Portable Apparatus for the Development of Motion Picture Film at Normal and High Temperatures, by J. I. Crabtree; published Mot. Pic. News (1918) p. 1582, 1742; Brit. J. Phot. (1918) p. 379; Photo Review (1918) p. 531 Am. Photog (1918) p. 516.
- No. 122. The Absorption of Light by Toned and Tinted Motion Picture Film, by C. W. Gibbs and L. A. Jones; published Brit. J. Phot. p. 68 (1921) p. 747.
- No. 135. The Use of Artificial Illuminants in Motion Picture Studios, by L. A. Jones; published Ill. Eng. 15 (1922) p. 247.
- No. 145. Graininess of Motion Picture Negatives and Positives, by L. A. Jones and A. C. Hardy; published in American Cinematographer, November (1922) p. 7.
- No. 159. A New Sensitometer for the Determination of Exposure in Positive Printing, by J. I. Crabtree and L. A. Jones; published in American Cinematographer, January (1923) p. 5.
- No. 170. Motion Picture Photography for the Amateur, by C. E. K. Mees; published J. Frank. Inst. 196 (1923) p. 227.
- No. 187. Development of Motion Picture Film by the Reel and Tank Systems by J. I. Crabtree; published Trans. Soc. Mot. Pic. Eng. 16 (1923) p. 163.
- No. 196. Thermal Characteristic of Motion Picture Film, by L. A. Jones and E. E. Richardson; published; Trans. Soc. Mot. Pic. Eng. 17 (1923) p. 86.
- No. 206. Improvements in Motion Picture Laboratory Apparatus, by J. I. Crabtree and C. E. Ives; published Trans. Soc. Mot. Pic. Eng. 18 (1924) p. 161; American Cinematographer November (1924) p. 5.

- No. 207. The Making of Motion Picture Titles, by J. I. Crabtree; published Trans. Soc. Mot. Pic. Eng. 18 (1924) p. 223; American Cinematographer, October, November, (1924) p. 9.
- No. 209. The Effect of Scratches on the Strength of Motion Picture Film Support, by S. S. Sweet, S. E. Sheppard; published Trans. Soc. Mot. Pic. Eng. 18 (1924) p. 102.
- No. 218. The Handling of Motion Picture Film at High Temperatures, by J. I. Crabtree, published Trans. Soc. Mot. Pic. Eng. 14 (1924) p. 39; Brit. J. Phot. 71 (1924) p. 762.
- No. 236. Static Markings on Motion Picture Film, by J. I. Crabtree; published American Cinematographer, July, August, (1925) p. 7.
- No. 237. The Use of Color for the Embellishment of the Motion Picture Program by L. A. Jones and L. M. Townsend; to be published in the coming issue of the Trans. Soc. Mot. Pic. Eng.
- No. 238. Incandescent Tungsten Lamp Installation Color Motion Picture Studio, by L. A. Jones; to be published in the coming issue of the Trans. Soc. Mot. Pic. Eng.

Announce Increase in Price of Goerz Positive Raw Stock

An increase in the price of Goerz positive raw stock is announced by the Fish-Schurman Corporation, sole distributors of the product.

The increase is occasioned, it is stated, by the desire to maintain the quality of the Goerz stock.

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The Tri-Ergon acoustic film was used to record the speech of Minister Stresemann, of the German cabinet, when it was found that Stresemann would be unable to attend, in person, the opening of the Kinematographic and Photographic Exhibition in Berlin in September.

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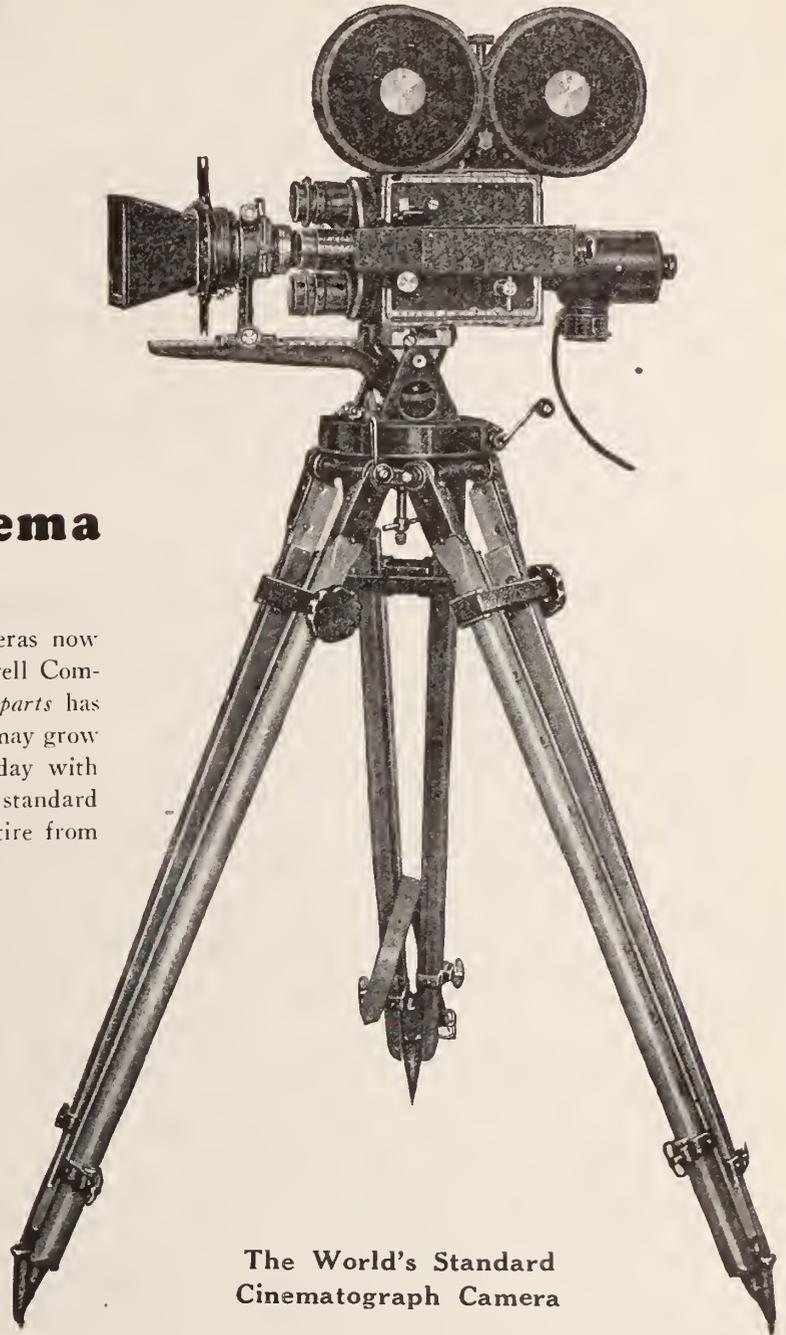
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(Continued from Page 9)

but reading the brilliancy at the screen is the only correct method to determine the actual number of foot candles being delivered to the screen.

Four Light Sources

There are four light sources available today for projection work, namely: the pure carbon arc; the high intensity arc; the reflector arc, or low intensity arc; and the tungsten filament or Mazda lamp. All of these sources are suitable for certain theatres, and before one is selected, the matter should be thoroughly gone into. I cannot help but think that very little time or thought is given to the selection of proper light sources. When the high intensity*arc was put on the market, it was immediately hailed as *the* light source and was installed in a great many theatres and the results in most of these theatres are well known. They were installed in theatres with long throws as well as in those with short throws. When the reflector arc was put on the market, it was also immediately hailed as *the* light source and was claimed by a great many that it filled a long felt want. Certainly, the theatre that actually required the high intensity arc could not very well get along with the low intensity arc. In other words, the theatre that was using a 75 ampere high intensity arc, which was equal to 125 amperes of pure carbon arc could not very well use a low intensity arc, consuming from 18 to 25 amperes. The Mazda lamp is not a very great favorite with the projectionists, no doubt due to the fine adjustment required with the Mazda lamp.

Indifference

Earlier in this article, I mentioned that the projectionist should have a knowledge of the various qualities of the different light sources. Certainly, there is a different quality in each one of the above named sources and different qualities of light certainly affect photography. I recently asked one of the foremost projectionists in the city of Chicago, (who is getting \$110.00 a week for working five hours a day, six days a week) what difference he had noticed in the quality of the light of the new reflector lamps that had been installed in the theatre as compared to the quality of the light from the high intensity arcs, which had been replaced with the reflector arcs. I asked this man the above question because I really wanted some information and felt that he could give it to me. He

(Continued on Page 18)

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(Continued from Page 16)

looked at me and said: "Aw, hell, light is light."

I have had equally unintelligent answers from a number of projectionists from different parts of the United States regarding the quality of light as well as other matters pertaining to projection. I do not mean to say that all projectionists are this type—naturally, when you want information you go to one who is drawing the highest salary and one whom you would expect to know something about his calling. On the other hand, there are a great many projectionists who take this attitude toward their work. The writer is employed by one of the largest producing and distributing companies, and his duties take him all over the United States and Canada, visiting film exchanges, theatres and laboratories. I see projection in a great many of the finest theatres in the United States, and talk to a great many projectionists and managers. I am surprised at the lack of knowledge and utter indifference shown by both managers and projectionists. Nevertheless, the above statement is true, but will, no doubt, be disputed by a great many. All I can say is that if they will come with me, I will show them something about projection.

Excessive Speed

Another common fault which is very detrimental to the exhibition of motion pictures is the speed in which they are projected, the average speed of which is about 100 feet per minute. Not only does this mar the presentation of the picture itself, but greatly shortens the life of the print and the condition in which prints are returned from some theatres is almost unbelievable. It is not an uncommon thing to have a brand new print returned from a theatre so mutilated that it has to be discarded. Part of this is due to high projection speed, but the responsibility rests largely with improper and careless handling of the film by the projectionist. Probably the projectionist who is careless in handling the film does not stop to appreciate the fact that he is hurting his brother projectionist more than he is injuring the exchange. Today, pictures are booked in the block system and bookings are set in, weeks and even months ahead. Each exchange is allotted a certain number of prints sufficient to supply the demand in that territory and one careless projectionist can upset a great many booking dates, causing the exchange to substitute bookings that have been

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advertised days and even weeks ahead. The actual cost of replacing damaged film does not amount to much, but often it is necessary to lift 50 to 250 feet of film from a reel and it is almost impossible to send that print out before replacement is made, and too often it is a whole print that is damaged. There can be only one answer to this: *dirty, improperly adjusted projectors together with careless handling.* A worn projector is not so apt to cause damage to a print, as one that is out of adjustment and dirty, so let those that are in the habit of handling prints carelessly stop and think for a moment how much he is hurting his brother projectionist.

The first duties of the projectionist in the large theatres, particularly first run houses, should be to study the picture on the screen, and, to do so, one must study it from the audience's viewpoint. Audiences do not go into projection rooms to see motion pictures, they go into the theatre proper and the picture may appear all right to the projectionist from the projection room, but the same picture may not appear nearly so well to the public who are paying their money to go into that theatre; therefore, the picture should be studied from the theatre proper at all angles and all positions. Only in this manner can a projectionist determine if he is getting good projection.

Good Projection an Art

Good projection is an art and should be treated as such. One cannot qualify as a good projectionist until he has studied the various important elements of projection; research work and study on the part of the projectionist will soon convince him that there is still a lot to be learned.

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- Wm. S. Hart's "Tumbleweeds," directed by King Baggott. Photographed by John Stumar, A. S. C.
- Warner Brothers' "The Love Toy," directed by Erle Kenton. Photographed by John Mesall.
- Warner Brothers' "Compromise," directed by Alan Crosland. Photographed by David Abel, A. S. C.
- F. B. O. Studios "The Midnight Flyer," directed by Tom Forman. Photographed by Harry Perry, A. S. C.
- First National's "The Viennese Medley," directed by Curt Rehfeld. Photographed by John W. Boyle, A. S. C.
- Charles Hutchinson Productions "Pirates of the Sky," and other features.

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Assistant Cameramen's Club Active With Weekly Meetings

Meetings of the Assistant Cameramen's Club continue to flourish while the membership of the organization keeps growing at a steady pace. Membership in the club, which was formed several months ago, is confined to assistants with at least one year's experience in active production work.

At the meeting of October 13th, the Cine Kodak and Kodascope were demonstrated to the assistants. All meetings are held, by special arrangements with the American Society of Cinematographers, in the A. S. C. assembly rooms, Guaranty Building.

Notes on Assistants

Cliff Shirpsier is assisting George Meehan on "Ben Hur" "chases" at the M.-G.-M. studios.

Joe McDonald was started on a new Colleen Moore vehicle with T. D. McCord.

Roland Platt, Curtis Felters and Griffith Thomas of the Tom Mix outfit are scheduled to leave on location to assist Dan Clark.

Bill Reinhold is assisting George Barnes on another "Potash and Perlmutter" story.

Harold Schuster has started with Glenn McWilliams at Fox with the Victor Schertzinger company.

Steve Bauder is with the trick department at the M.-G.-M. studios.

Eddie Cohen is working in a similar capacity at First National.

Max Cohen is back from the Feather River district where he assisted Reggie Lyons on the latest Buck Jones feature for Fox.

Don Green has returned from Alaska where he assisted Charles Clarke on George Melford's latest production for Metropolitan.



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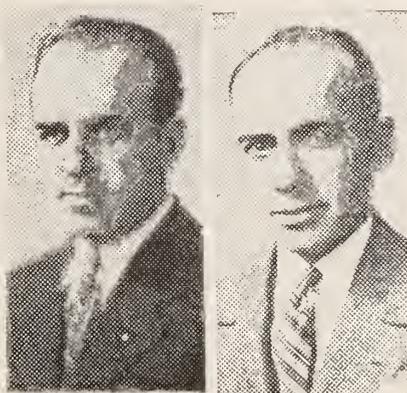
(Continued from Page 8)

worth-while the time is well spent. If the cinematography is negligible, the story and action clap-trap or, to use a familiar expression, a 'dud,' then the time spent is absolutely wasted. Therefore it is up to the cinematographer, the continuity writer, the director and the producer to give the public films of merit.

"Art in the fullest sense of the word is what motion picture theatre-goers demand. And you gentlemen are keeping pace with the times in meeting this demand."

Following Judge Goodcell's speech, short talks on various cinematographic phases were given by Dan Clark, Fred W. Jackman, John W. Boyle, George Schneiderman and Arthur Webb, attorney for the A. S. C.

Form Silk Mills In Film Capital



Clarence D.
Hutson

Roger E.
Jones

That Hollywood is to supply its own needs, as well as those of the outlying country, in the way of silk stockings, which are used so profusely in motion pictures, is indicated by the scope of a new industry that has been brought to the film capital.

Several of the prominent members of the motion picture industry are identified in an official capacity with the Hollywood Silk Hosiery Mills which is to erect a four-floor factory in Hollywood. The new silk mill is being sponsored and financed by the Hollywood Finance Company, of which Clarence D. Hutson is president and Roger E. Jones, secretary and treasurer.

Under the caption of "This Should Be Rich Silk Center," the Los Angeles Examiner, in a recent editorial, said:

"Speaking of industrial opportunities for Los Angeles, consider silk.

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tion by M. H. Merrill, nationally known textile engineer, shows the following:

"All but a negligible percentage of the silk turned out by American mills is manufactured in the East. The raw silk for these mills comes from China and Japan. Ocean and rail freight rates and insurance are enormously high. It is carried across the continent in express trains which, in order to save guard and insurance costs, travel faster than the limited passenger schedule.

"And then, after fabrication, the Pacific Coast supply comes back carrying the load of high freight and insurance rates.

"Los Angeles should be

manufacturing its own silk goods for the Pacific Coast and mountain states and a larger part of the middle western territory because:

"Building costs are 25 per cent lower here than in the East.

"Labor costs are 12 per cent less.

"Power costs are 40 per cent less.

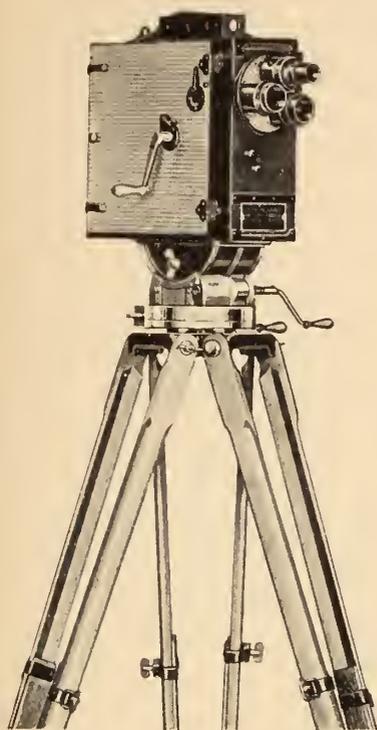
"Fuel and water costs are less, and there would be an immense saving in freight and insurance.

"The market? Southern California uses more silk per individual than any other part of the world; this because buying power here is exceptional and the climate favors the year-round use of this fabric.

"This immediate section uses \$25,000,000 of silk goods annually. The entire Pacific Coast uses \$70,000,000. Add to that a share of the Middle West's business and Oriental trade and the market becomes a \$110,000,000 yearly proposition.

"Mr. Merrill shows that several economics make it possible for Los Angeles to manufacture silk, ship it East, undersell the factories there and still make a larger profit than is possible for them.

"The silk industry is now being pioneered here, and there are splendid results. Conditions are so prosperous, however, that this should be the greatest silk manufacturing center in the world."



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Rosher Departs For Germany

Charles Rosher, A. S. C., has left Hollywood for New York City where he will embark for Germany for the filming of Mae Murray's big production for Ufa in Berlin, as announced in last month's issue of the American Cinematographer.

Prior to his departure, Rosher and Mrs. Rosher, who is accompanying him on the trip, were guests of honor at a dinner party given by Mary Pickford and Douglas Fairbanks at “Pickfair” in Beverly Hills, Calif. Rosher was presented with an autographed and handsomely framed photograph of Miss

Pickford while the members alligator skin wallet to the A. S. C. member. A smaller size of a similar wallet was presented to Mrs. Rosher. The alligator skin has a particular significance from the picture in which Rosher has just photographed Miss Pickford — “Scraps,” in which much of the action revolves about southern swamps in which alligators abound.

Eveleigh Here From England

Leslie Eveleigh, vice president of the studio division of the Kinecameramen's Club in London, has arrived in Hollywood from England.

Eveleigh is a fellow of the

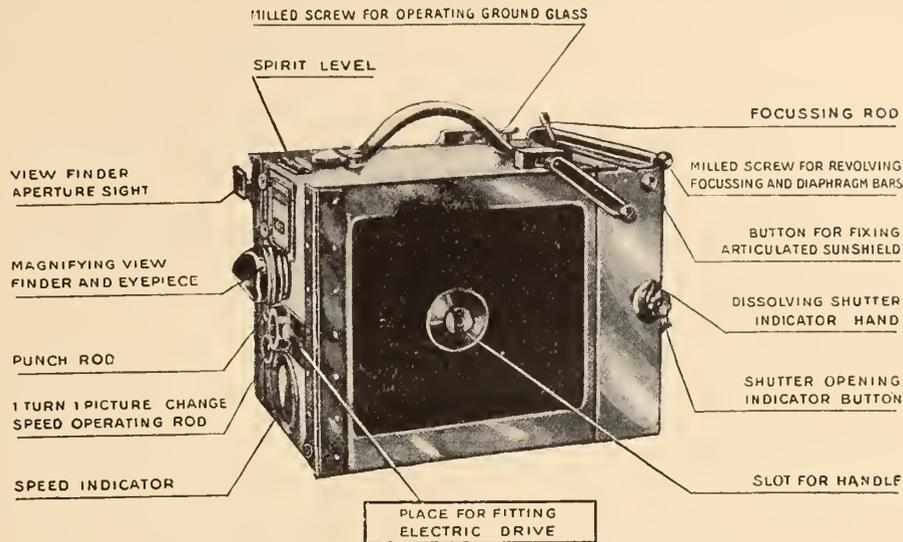
Royal Photographic Society. He has been a cinematographer in England for the past 15 years.

Cupid Enmeshes A. S. C. Members

Cupid is persistently entangling his darts in the rolls of film which go to record a cinematographer's life, it appears from a current perusal of the membership list of the American Society of Cinematographers.

In rapid succession, Philip H. Whitman, Gilbert Warrenton and Paul P. Perry, all of whom were admitted to be in a state of confirmed bachelorhood, have crossed the boundaries into matrimonial bliss.

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October 23, 1925.

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With best wishes for further success of Creco, I remain

Yours truly,

A handwritten signature in cursive script that reads "Bert Glennon". The signature is written in dark ink and has a long, sweeping underline that extends to the right.

(Bert Glennon)
Cinematographer with
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BG:S



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Scott Sidney

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Aug. 29, 1925.

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In this Issue:

Projection—By Earl J. Denison

**Photographing in Alaska—By Charles G.
Clarke, A. S. C.**

**Rack Marks and Airbell Markings on Motion
Picture Film—By J. I. Crabtree and C.
E. Ives.**

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The Primrose Path	Andre Barlatier
The Timber Wolf	Allen Davey
Easy Going Gordon	Not credited
Law or Loyalty	Not credited
Without Mercy	Chas. G. Clarke, member A. S. C.
Three Wise Crooks	Roy Klaffki
A Son of His Father	Not credited
The Fear Fighter	Ross Fisher, member A. S. C.
Wandering Fires	Harry Stradling
What Fools Men	Norbert Brodin, member A. S. C.
A Daughter of the Sioux	Wm. Fildew, member A. S. C.
Classified	Hal Rosson
The Calgary Stampede	Harry Neuman
The Dark Angel	George Barnes, member A. S. C.
The Midshipman	Oliver Marsh
The True North	W. W. Kelly
Paint and Powder	Sol Polito, member A. S. C.
Lovers in Quarantine	J. Roy Hunt
Thunder Mountain	Glen McWilliams
A Regular Fellow	Charles Boyle
Lazybones	Geo. Schneiderman, member A.S.C.
Exchange of Wives	Ben Reynolds
Crack o' Dawn	Lee Garmes
The Substitute Wife	Harry Stradling
The Pace That Thrills	T. D. McCord, member A. S. C.
Some Pun'kins	Phillip Tannura and James Brown
The Pride of the Force	Not credited
Sealed Lips	Sam Landers, member A. S. C.
American Pluck	H. Lyman Broening, member A.S.C.
Ridin' the Wind	Ross Fisher, member A. S. C.
9 3-5 Seconds	Gordon B. Pollock and Edward Henderson
Children of the Whirlwind	Edward Paul
The Winding Stair	Karl Struss
Little Annie Rooney	Charles Rosher, member A. S. C.
Barriers Aflame	Robert Kurrle, member A. S. C.
His Master's Voice	Jack MacKenzie
Flower of Night	Bert Glennon, member A. S. C.
Red Hot Tires	Charles Van Enger, member A. S. C.
The Unwritten Law	Frank Good, member A. S. C.
Scandal Street	Edwin Paul
Thank You	George Schneiderman, member A. S. C.
Satan in Sables	John Mescall
Durand of the Bad Lands	Allen Davey
The Unnamed Woman	Not credited.
The Everlasting Whisper	Daniel B. Clark, member A. S. C.
Hidden Loot	Wm. Nobles
The Wall Street Whiz	William Marshall, member A. S. C. and Jack Stevens
A Little Girl in a Big City	C. J. Davis and Jack Young
The Live Wire	Charles Gilson, John Geisel and Paul Strand
The King on Main Street	James Howe
East Lynne	Ernest Palmer, member A. S. C.

American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

J. W. PARTRIDGE, *Managing Editor*

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PROJECTION • Conducted by Earl J. Denison

Splicing of Film Requires Great Care



(This paper was presented before the recent meeting of the Society of Motion Picture Engineers.)

During the past ten years the mechanical processes involved in the making of motion pictures have—for the most part—been subjected to critical analyses followed by changes and improvements which have resulted in increased efficiency.

Processes of major importance—the perfection of the film; the taking of the pictures; and the making of positive prints—are now carried on by means of standardized machines and instruments, the use of which insures surpassingly fine artistic effects joined with a minimum of production cost.

Scant Attention

But some minor processes are of major importance and these have received scant attention. The splicing of film is a case in point. This process has—until recently—been carried on by crude methods which have produced unsatisfactory results. A faulty splice may throw the picture out of frame, trespass upon the picture space, stiffen the film at point of splice, or give way altogether. And to the extent that it does any of these things it makes impossible the production of the perfect motion picture.

A more intimate knowledge of motion picture film, the use it is subjected to in the theatres, together with the science and reasons for prop-

er inspection, splicing and handling will lead those engaged in this particular branch of the industry to an understanding and appreciation of the necessity for perfect work.

Perfection

Of primary importance among the mechanical processes is that of film perforation, as accuracy in this operation is the first requisite in the making of quality pictures; i. e., being the initial operation, successful handling of the succeeding processes is only possible with the utmost accuracy in film perforation.

The fact that the life of the film depends almost entirely on the physical and mechanical conditions of the perforations (Sprocket Holes) proves that the utmost care should be exercised to prevent the perforations from becoming damaged.

The matter of splices has never been confined to any one locality, but constitutes a problem for all laboratories, exchanges and the theatres.

This problem presents features more complicated than the mere holding quality of the splice, and the recurrence of complaints shows clearly that a satisfactory means of splicing film to withstand the use to which the prints are subjected in the theatres has yet to be standardized.

There is very little difference in uniformity, flatness, register, etc. It is an easy

Careless Workmanship

Brings Heavy Loss to
Theatre and Producer

matter to obtain strength, but strength alone does not constitute a satisfactory splice.

Ultimate Test

Projection is the ultimate test for the mechanical and physical qualities of the splice, as well as the film, and while practically all film damage occurs in the theatres, about 50% of the damage is traceable to improperly made splices for which there are six primary causes.

Cause No. 1. *Splice out of register* (of sprocket holes not perfectly matched.) Splices of this kind will jump while passing through the projector and probably damage the film.

Cause No. 2. *Splices too wide*. A splice is stiff and unbending, and if too wide will not seat properly on the sprocket wheels of the projector, causing a jump with probably damage.

Cause No. 3. *Emulsion or gelatin not entirely removed*. Due to the fact that film cement only acts upon the celluloid base of the film, it is necessary to entirely remove the emulsion in making the splice. Where there is a particle of emulsion, the cement will not hold, causing the splice to open and come apart.

Cause No. 4. *Too much or too strong a cement*. We say "splicing" the film, when it is more nearly correct to say "welding" the film. The cement attacks the celluloid base of the film and when the

(Continued on Page 15)

Photographing in Alaska

By Chas. G. Clarke, A. S. C.

A. S. C. Member Leads
Pioneer Studio Filming
Trip to Far North



Filming Scenes for "Rocking Moon," at Ancient Glacier North of Juneau, Alaska. Chas. Clarke, A. S. C., Second from Left.

Juneau the trip was made to Sitka in a very small boat.

Citizens Co-operate

In the latter city the weather was a great surprise, for instead of terrific cold, real Hollywood weather was encountered — warm days with mellow sunlight and sufficiently long in duration to enable the company to take far more scenes than had first been supposed. Citizens of the town gave a willing hand in obtaining special "props" and authentic costumes and were most obliging to assist in any way needed.

Fox Farming

The story of "Rocking Moon" is built around the important industry of fox farming in Alaska and the story derives its name from the shape of the island where the majority of the foxes are raised. Most of the action takes place on this island.

The government leases

(Continued on Page 23)

Unique in the history of motion picture making was the trip of sixteen players of the Metropolitan Picture Corporation to Alaska for the filming of "Rocking Moon," the novel by Barrett Wiloughby. The picture was directed by George Melford and the scenes were taken in and around Sitka, the old Russian capitol, which still has many of the original Russian buildings and totem poles erected hundreds of years ago.

Pioneer Trip

While it is true that many scenic and educational films have been taken in Alaska, the trip of the Metropolitan players is said to have been the first into the far frozen north country for the express purpose of filming a play because of the tremendous expense involved due to uncertain weather and transporta-

tion conditions. However, the Metropolitan took this chance and arrived in Juneau, Alaska, in seven days. From



George Melford, Rockliffe Fellowes and Lilyan Tashman With Some of the Blue Foxes Which Clarke Photographed.

Arrange Release for Cowling Films



Famous Subjects Cut
and Edited; Ready Now
for Immediate Showing

Announcement was made this month of the release through which the motion pictures, made by Herford Tynes Cowling, A. S. C., in his latest trip around the world, will be distributed to cinema patrons. Entire distribution rights to all the motion pictures filmed by Cowling under the "Round the World Travel Picture" banner have been purchased by Pinellas Films, Inc., of which Harry P. Carver is president.

Three of Feature Length

There will be three of Cowling's releases in feature length—"A Lion Hunt in Africa," "A Tiger Hunt in India," and "Into Unknown Tibet; or Tibet, the Unknown Empire." The matter on which these three productions are based formed the foundation for three successive stories which appeared under the A. S. C. member's authorship in this publication.

The single reel subjects, which Cowling made on the same trip, will be distributed by Pinellas through the Short Film Syndicate, New York, of which Hal Hodes is president. Included are more than 100 short reel subjects of the adventure type, which are a distinct departure from the stereotyped "travel" pictures.

"The name of the travel picture," the A. S. C. member states, "has become synonymous with subjects made along the beaten path of the tourist, and at the same time has come to be applied to all pictures so made abroad."

Real Adventure

The accepted phraseology, it is said, does not accurately describe the motion pictures which Cowling has brought back from his memorable trip. The A. S. C. member prefers to refer to his productions as something of the adventure type, going as he did farther and farther afield each year for his material.

"Some of the series will be called 'Far Eastern Trails,'" Cowling continued, "while the films of a fish fight in Siam; the birthday of the King of Bunyoro in Africa; or the wed-

ding ceremony of the Raja of Kashmir are neither travel pictures nor adventure pictures—it is just letting one-half of the world see what the other half is doing, and letting that other half see such as a matter of entertainment rather than education.

Difficult Field

"It becomes more and more difficult every year to find subjects that will entertain. With such wonderful and magnificent productions for imaginative entertainment as 'The Thief of Bagdad,' 'The Wanderer' or 'Don Q'—which build, for example, such elaborate sets as for 'Bagdad'—any films I would make of the real Bagdad or Mesopotamia, or of the Arabian or Persian people, would appear squalid and unromantic beside the productions made in Hollywood from fiction rather than from fact.

"However, our business is one essentially of imaginative entertainment. I certainly have no complaint to make on that score. But I do regret to see the feature pictures becoming longer and longer each year, all of which works against, insofar as finding a place on the ordinary program is concerned, the rewarding of arduous cinematographic expeditions into jungles and foreign fastnesses and recording the unknown life that is unearthed there. In other words, if we are to have many more ten and eleven reel features, as appears to be the trend of the producers at this time, there will be no room left for even the most meritorious short films of adventure or travel—call them what you will—once the essential news and comedy pictures are taken care of."

Historic Trip

The trip on which Cowling captured the cinematographic material that is now ready for release was one of the most notable ever to be essayed by a cinematographer. It required the better part of two years to complete, and led him over thousands of miles of primitive travel into parts of Africa, India, Tibet and the Orient, which theretofore had been entered by few, if any, white men, and which certainly is now being brought for the first time to the outside world through the medium of Cowling's cameras.

Rack and Airbell Markings on Cinema Film

Causes and Effects of Different Types of Marks Given Thorough Analysis.

By J. I. Crabtree and C. E. Ives

Timely Facts in Eastman Research Laboratory Communication Presented Herewith.



TOP OF RACK



BOTTOM OF RACK (FIG. 1)

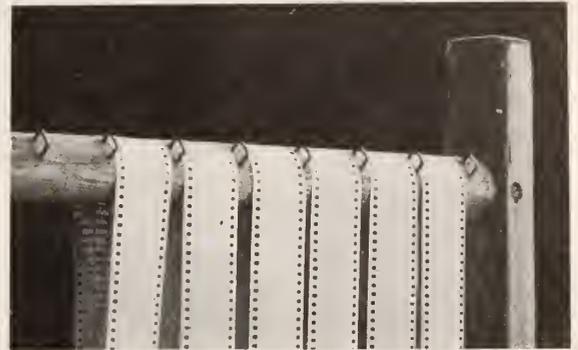


Figure 4.

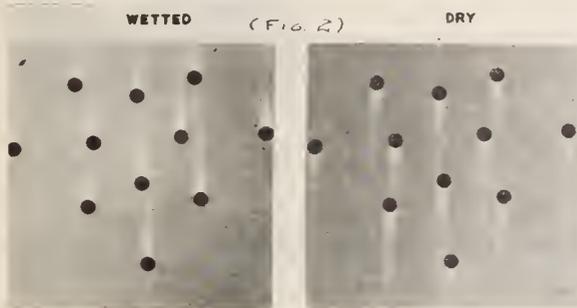
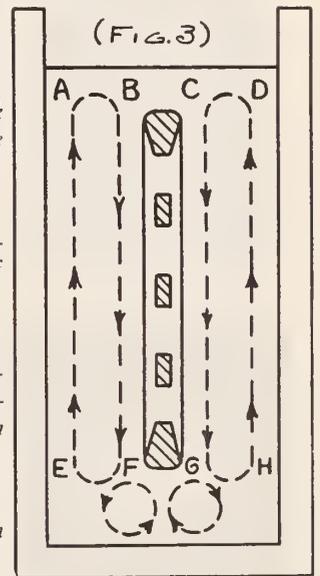
KEY TO FIGURES

Fig. 1: Typical Development Rack Marks on Motion Picture Film.

Fig. 2: Streaks Caused by the Restraining Action of the Products of Development.

Fig. 3: Diagram Illustrating the Probable Direction of the Convection Currents in a Motion Picture Developing Tank.

Fig. 4: Film Developing Rack With Offset Spacing Pins.



When developing motion picture film by the rack and tank system it is very difficult to secure uniform development throughout the entire length of the film. Unless special precautions are taken, more development occurs at the top and bottom of the rack where the film passes over the end slats or bars than along the sides, so that bands of greater density occur at intervals corresponding with the height of the rack, which cause an objectionable flicker when the film is projected. These dark markings are termed "rack marks."

Another difficulty arises from the cling-

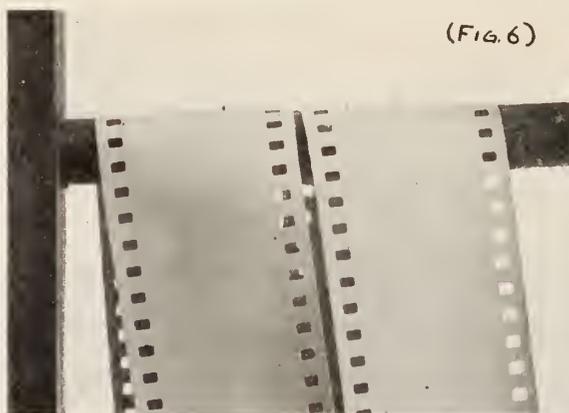
ing of airbells to the film as the rack is immersed in the developer. These airbells prevent the access of developer to the film locally thus causing white spots.

Both the above defects can be overcome by correct manipulation, but their presence on much of the film shown in the present day theatre indicates a need for a better knowledge of the subject on the part of many laboratory workers.

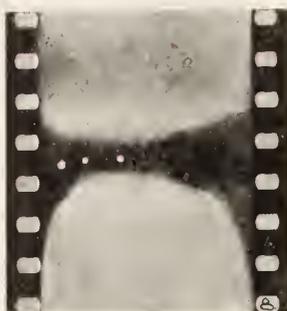
It is the purpose of this article to explain the nature and cause of rack marks and airbell markings on motion picture film and to indicate methods for their prevention.



5.



(FIG. 6)



8.



Figure 9.



10



Figure 11.

KEY TO FIGURES

Fig. 5: Bar Markings Produced When Developing Film on a Reel.

Fig. 6: Air Bubbles Clinging to Motion Picture Film.

Fig. 7: Group of Circular and Irregular Shaped Airbell Markings.

Fig. 8: Airbell Markings Coincident With Rack Mark.

Fig. 9: Airbell Marking—Clear Spot Surrounded by a Dark Ring (20 diams.).

Fig. 10: Airbell Marking—Clear Spot Surrounded by a Dark Ring Accompanied With a Tail (20 diams.)

Fig. 11: Airbell Marking—Clear Spot Surrounded by a Grey Ring (20 diams.)

Fig. 12: Airbell Marking—Clear Spot With Central Dark Ring (20 diams.)



Figure 12

RACK MARKS

Nature of Rack Marks

When film is developed on the usual rack in a vertical tank, more development invariably occurs where the film passes over the top and bottom of the rack than along the sides causing the film to appear as shown in Fig. 1. The marking where the film passes over the top of the rack is usually mottled and consists of a double line, while at the bottom, only a single dark line is produced.

Cause of Rack Marks

At various times rack marks have been wrongly attributed to causes such as a difference in temperature between the rack slats and the developer, which might cause an acceleration or retardation of development at the point of contact of the film with the slat. Experiments have been shown however that more development occurs where the film passes over the slats even when the rack is cooled below the temperature of the developer before immersion. It is now known that

rack marks are caused by non-uniform development due to convection currents and retardation of development of the film along the sides of the rack by the developer exhaustion products.

In order to demonstrate the non-uniformity of development at the top and bottom of the rack a length of motion picture film was given a uniform exposure and developed for the normal time, five minutes, at 65° F., the rack being kept stationary. The density of the developed film was measured in several places at the top, middle and bottom of the rack and the average measurements were found to be as follows:

Top of Rack	Middle of Rack	Bottom of Rack
1.32	1.15	1.02

This grading of density from top to bottom of the rack is due to the fact that wherever development occurs, reaction products consisting of oxidized developer and sodium bromide are formed. These substances are strong restrainers of development and have a greater density or specific gravity than the fresh developer, and therefore, tend to flow downward while developer flows from above to take its place. As the developer flows down the vertical film it becomes gradually more and more exhausted because it has assisted in developing the upper portions. This results in a gradual diminution in the degree of development of the film from top to bottom of the rack.

The actual existence of convection currents in a vertical developing tank has been shown by Bullock¹ who placed paper fibres in the solution. During development the fibres were observed to travel downwards along the film and then upwards at the side of the tank.

The restraining effect of the reaction products of development may be very clearly demonstrated by exposing a strip of film through a metal plate punched with a number of holes, slightly flashing the whole film to light and then placing the film vertically in the developer without agitation. Immediately below each black circle which develops up, a white tail is produced as shown in Fig. 2 caused by the restraining effect of the reaction products from the development of the circles, which reaction products gravitate downwards. If the film is wetted before being

placed in the developer the white tails appear above the circles (Fig. 2) because the reaction products diluted with the water absorbed by the film have a lower specific gravity than the developer and, therefore, travel upwards.

The probable direction of the convection currents occurring in a vertical motion picture developer tank is shown in Fig. 3.

The main currents A B F E, and C D H G flow parallel with each side of the rack. At the bottom of the rack small eddy currents probably exist while across the top of the rack the developer remains relatively stationary.

At the points B and C the developer is continually renewed while between these points the reaction products of the developer remain stationary and development is restrained so that a double rack mark is produced as shown in Fig. 1A. At the points F and G, development is restrained by the reaction products flowing down the film, while between these points the developer is being continuously renewed by virtue of the eddy currents so that only a single rack mark results as shown in Fig. 1B.

Negative rack marks appear as light bands on the positive print. The positive film may therefore contain both negative (light bands) and positive (dark bands) rack marks at varying intervals but separated by a distance not greater than the height of the rack. Only in rare instances do the positive and negative rack markings coincide.

Since rack marks are caused by non-uniform development, the remedy is somewhat obvious, but it is very difficult in tank work to ensure that each portion of the film develops at exactly the same rate. To attain this end the developer must be renewed at each point at the same rate and this can be partly effected in the following ways:

1. *By agitation of the developer with the rack remaining stationary.* This can be accomplished by means of a pump or mechanical stirrer, but in the case of a deep tank it is almost impossible to so agitate the developer that the rate of renewal of the developer at the surface of the film is constant throughout its entire length. The experiment was tried of injecting a stream of nitrogen gas (so as not to oxidize the developer) at the bottom of the tank, but unless an even stream of the gas passed up each side of the rack uneven development resulted. In view of the expense involved and the difficulty of securing uniform agitation, this method was abandoned.

1. "On the Convection Effects in Photographic Bathing Operations in the Absence of Agitation" by E. R. Bullock, B. J. Phot., Feb. 1922, p. 110.

The EDITORS' LENS . . . focused by FOSTER GOSS

¶The reception accorded the selection by famous critics of the productions with the best cinematography for the past year, as reported in the last issue of the *American Cinematographer*, has exceeded the most optimistic anticipations. As was intended, that feature of this publication bids fair to stimulate, more than ever, the progress of cinematography.

¶The critics' attention in this matter indicated that they are thoroughly cognizant, if they have given the situation study at all, of the importance of the cinematographer in the scheme of producing motion pictures. To stimulate cinematography is but blazing the way for the proverbial "bigger and better pictures"; and if there has been a Moses to lead motion pictures out of the land of infancy it is motion photography itself.

Motion Picture Theatres?

¶The comment of Herford Tynes Cowling, A. S. C., in other columns of this issue, on the current tendency of motion picture theatre programs commends itself to consideration.

¶Early cinema theatre managers made money for their houses and reputations for themselves through the embellishments which they added to the presentations of the features which they exhibited. There have come the atmospheric prologue, symphony orchestras, and a long array of acts which are truly vaudeville, until the patron now at times scarcely knows whether he is in a film theatre or in one of the early variety houses. Certainly many of the acts which clutter up the offerings are of the same vintage as the crudest of variety turns, not to mention many of the "atmospheric prologues," which would be dignified if they were termed even "amateurish prologues."

¶Unfortunately, countless smaller and neighborhood houses have seen fit to emulate the presentations of the larger and better known houses—and the latter, in pursuing their established procedure, have uncurtained, in too numerous instances, more mediocre than super-

lative programs. What can be expected then of the smaller houses, which, when they get their best talent, are obliged to present what is worse than the big houses' worst—which is bad enough. To tax the tolerance of the patron even more, many of these vaudeville acts, prologues and whatnot are inordinately long (while the same theatre may have insisted on the cutting of the feature's credit titles in order to "save time").

¶We have no quarrel with the intelligent handling of orchestra music, prologues or befitting acts. We believe, however, that progressive theatre managers are open to suggestions. We believe that it is better to bill a short-length motion picture that is interesting (and there are many of them if the manager has not closed his eyes to them), than it is to give time to a doubtful act or a hurried stage presentation that usually must be put on in the minimum of time between the end of the showing of one feature and the beginning of another. While the foregoing may apply principally to the smaller theatres, the impresarios of some of the more pretentious establishments might take note also.

¶Motion picture theatres, after all, take their names from motion pictures!

No Advance?

¶One who writes spasmodically on cinematography in a Hollywood weekly under the signature of "Sub Rosa" recently opined in an issue that reviews performances of 1925 as follows: "There does not seem to be any advance made photographically in the past year."

¶While we do not know just what period of time the unknown writer includes in "the past year," surely he does not mean to be oblivious to "The Lost World," "The Ten Commandments," "Don Q," "The Thief of Bagdad," "The Wanderer," "Monsieur Beaucaire," etc.?

¶Or, if "Sub Rosa" is the authority on cinematography that he is seemingly set up to be and if he is confining his remarks to the immediate present, is he in total ignorance of the cinematographic strides that are being made in "The Black Pirate"? Perhaps also he is ignorant of R. E. Sherwood's recently published estimation of the cinematographer?

¶It is an unusual year indeed wherein the cinematographer does not contribute materially to the progress of motion pictures!



Al Gilks, A. S. C., has completed the filming of "The Enchanted Hill," which, based on the Peter B. Kyne story, was directed by Irvin Willat.

* * * *

Fred W. Ackman, A. S. C., is busy with the editing and titling of his latest production at the Hal Roach studio. Floyd Jackman, A. S. C., was chief cinematographer. It is said that the newest Jackman vehicle surpasses even the highly successful "Black Cyclone."

* * * *

Reginald Lyons, A. S. C., is back at the Fox studio in Hollywood after a location trip to Bishop, Calif., on the newest Buck Jones feature.

* * * *

Kenneth MacLean, A. S. C., has finished the filming of special effects on "The Sea Beast," the Warner Bros. production starring John Barrymore.

* * * *

King Gray, A. S. C., has returned from Portland, Ore., where he was chief cinematographer on the current Lewis H. Moomaw production. The cast included Eugene O'Brien, Virginia Valli, Bryant Washburn and George Nichols.

* * * *

George Schneiderman, A. S. C., has been away from Hollywood on location for the photographing of his latest William Fox feature.

* * * *

Henry Sharp, A. S. C., is still hard at work on the cinematography in "The Black Pirate," which Douglas Fairbanks is producing by the Technicolor method of photography.

* * * *

H. Lyman Broening, A. S. C., when he was recently engaged by Warner Bros. as chief cinematographer on "The Sea Beast," starring John Barrymore, resumed an association that had its origin in 1914 with Famous Players in New York City. The association was with none other than Barrymore himself whom the A. S. C. member photographed in his first starring appearance in films. The picture was "The American Citizen." Two years

later Broening photographed the illustrious Barrymore in "The Lost Bridegroom." Now, as then, Lyman states, "John is 'some' actor."

* * * *

William Marshall, A. S. C., is photographing "Flaming Waters," an Associated Arts production, which is being directed by F. Harmon Weight.

* * * *

Victor Milner, A. S. C., has been working on location at Anaheim Landing, where the Pacific meets the California coast, for the filming of important scenes in the latest R. A. Walsh spectacle for Paramount.

* * * *

A. S. C. Member's Work Praised By Motion Picture Reviewers

Following are a number of excerpts as relates to cinematography, compiled for the first time, from the reviews on Mary Pickford's "Dorothy Vernon of Haddon Hall":

Edwin Schallert, Los Angeles Times—

"Amazing photographic attractiveness for which Charles Rosher is to be credited.

"Seldom have I seen anything more enchanting than some of the portraiture; Mary is more alluring than she has ever been.

"You think at times when you view her you are actually seeing Gainsborough coming to life."

Wid:—

"Artistically it ranks as one of the best films made to date. Photographically, this is one of the most beautiful productions that has ever been screened."

Photoplay:—

"... exceedingly beautiful pictorially . . . a new high watermark in animated photography.

"Charles Rosher, cinematographer extraordinary, deserves a medal of honor for the photography."

Illustrated News, Los Angeles:—

"The elegance of both interiors and exteriors is magnified by splendid lighting effects achieved by Charles Rosher, master cinematographer."

Sunday Pictorial:—

"Beautiful composition and perfect photography make this picture like a series of old masters.

"If there were a Nobel Prize for camera art it would certainly go to Charles Rosher."

Pearl Rall, Los Angeles Express:—

"To Cameraman Charles Rosher belong highest honors for its superlative beauty."

Picture Play:—

"The photography which gives the beautiful exteriors and vast interiors a tapestried softness is not the least part of the picture. We think Charles Rosher, artist of the lens, one of the most valuable members of the Pickford studios."



View of New York Institute New Camera.

New Camera Introduced by N. Y. Photographic Institute

A new standard camera was announced this month by the New York Institute of Photography. The instrument is designed for light weight and to be marketed at a low price.

The camera, the Institute management states, is made to sell in units. Extra lenses, magazines, turrets and special attachments will be sold separately so that outfits for individual requirements may be assembled from standard parts. With case and magazines of aluminum alloy finished in glossy black enamel, the new camera measures $6\frac{1}{2}$ inches wide, $6\frac{1}{2}$ inches high, $7\frac{3}{4}$ inches long without magazine and 12 inches high with magazine. The weight is $12\frac{3}{4}$ pounds and the capacity is 200 feet of standard film. There is a direct vision finder.

The lens is a 2-inch, F 5 anastigmat in focussing mount; it is a Cine Velostigmat by Wollensak Optical Co. The shutter is 180-degree non-adjustable. The camera uses the harmonic cam and visible spring belt. The movement is in normal and reverse, with single picture attachment obtainable. A set-back footage meter is built in the case. The camera contains a slot for the use of masks for intricate work.

Various standard camera equipment, it is announced, may be used in conjunction with the camera; the manufacturers list different kinds of accessories for such uses.

Governor of Virginia Sees A. S. C. Member's Trophies

Governor E. Lee Trinkle of Virginia and Mrs. Trinkle; W. McDonald Lee, commissioner of Inland Game and Fisheries; Col. Parke Deans of Richmond, and other Southern officials were the guests during the past month of Herford Tynes Cowling, A. S. C., at the Cowling family home in Suffolk, Va., where the A. S. C. member personally displayed to his visitors his collection of trophies which he has acquired during his numerous travels to the remote places of the world.

"Governor and Mrs. Trinkle, Col. Parke Deans and others visited the home," a Virginia newspaper reports, "and expressed amazement at the completeness of the collection which has been made by Mr. Cowling through the years.

"Leopard skins, tiger skins, quaint articles of clothing and wood are part of the collection. The trophies are reminders to Mr. Cowling of his thrilling experiences in dense jungles and other hunting grounds.

"Not only were the trophies interesting to the Governor's party but the wealth of information possessed by Mr. Cowling was imparted in such a manner to be both entertaining and instructive. For years Mr. Cowling has been traveling about the world and his articles have been read by many who knew him in the days when he was but a lad in Suffolk."

Issue Date Changed

Following the lead of the *American Projectionist* and other trade journals which have been issuing at the end of the current month, the *American Cinematographer* hereafter will appear at the first of the month. To effect this schedule, the November number is being issued with the December this month. This will not affect the sequence of issues as all subscriptions and advertisements are automatically advanced one additional month.

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Projection

(Continued from Page 4)

pressure is quickly applied, the two pieces of film are welded together. When too much or too strong a cement is used, the whole celluloid base is softened, instead of only the surface, causing the film to cup, or buckle, after drying.

Cause No. 5. *Not enough cement or cement in bad condition.* If too little cement is used, it will not soften the celluloid sufficiently to make the splice hold. Film cement evaporates rapidly if left uncorked and will cause the mixture to lose its proper proportions. Cement in this condition will not hold the splice.

Cause No. 6. *Uneven scraping.* It is necessary to remove every particle of emulsion to make a good splice. (See Cause No. 3) However, great care must be taken not to thin down the celluloid base for the reason stated in Cause No. 4.

Improper tools, careless handling of the film, or dirty hands will also result in poor splices. Covered hands or taped fingers will not permit the best work.

So far this paper has dealt with hand-made splices. Now let us examine some of the results of improperly made splices. The fact that every film passes through two or three different makes of projectors, and that each of the three most widely used makes threads differently from the others, does not make any difference whether the splice is lapped left or right.

Bad Splices

Certain tests show conclusively that the film invariably runs 'off' at the take up sprocket, and ninety-nine times out of a hundred the run off is caused by a bad splice. The reason for this is that the film at the top sprocket is kept taut by the tension on the reel in the top magazine, and the film is kept taut at the intermittent by the tension at the aperture. The film feeds on to the bottom sprocket out of a loop that is constantly slapping back and forth, and a slight imperfection in a splice will cause the film to run off and become damaged.

Very few projection rooms are properly equipped to splice film, but fairly good splices can be made by hand if sufficient time and pains are taken. However, most splices made in the theatres are made in a hurry.

Not only has a great deal of damage resulted from improperly made splices, but oftentimes the presentation of a picture is greatly marred. A bad splice also constitutes a fire hazard. Exhaustive experiments and research have proven conclusively that permanent splices cannot be made by hand.

First: It must be narrow enough in width to conform to the periphery of the sprocket wheels.

Second: It must be uniformly scraped.

Third: It must be in perfect register.

Fourth: Cement must be quickly and evenly applied.

Fifth: Uniform pressure must be quickly applied.

The answer to this is, to properly splice film, it must be done automatically.

Famous Players-Lasky Corporation have equipped all of their exchanges and laboratories with the Bell & Howell automatic positive splicing machine. This machine automatically cuts and scrapes film and applies even pressure to the splice. The plates on which the splices are made are heated to about 120 degrees. The heat not only acts as a binder to the cement, but makes it quick drying.

It certainly is the duty of exchanges to properly inspect and splice the film served to the theatres. It is also the duty of the projectionist to make as good splices as possible, and a little more thought and pains on the part of the projectionist in making splices will greatly add to the life of the film and re-act in better service from the exchanges.

Roos Returns From Trans-Pacific Trip

Len H. Roos, A. S. C., has returned to his headquarters in Vancouver from the Antipodes, where he has been sojourning, cinematographically, for the past several months.

Roos, it is said, is conducting preparations for another trip that is to begin with the first of the coming year. The A. S. C. member is affiliated with the Fox Varieties and News Division.

Demonstrate New DeVry Model Before A. S. C. Open Meeting

The new DeVry standard portable camera and the DeVry projector, together with the film projected thereon, were demonstrated to the members of the American Society of Cinematographers by H. A. DeVry, the inventor and president of The DeVry Corporation of Chicago, in the auditorium of the Society on the evening of November 16th. Nearly two-score guests of the society, representing practically every branch of the film industry, also were present, the demonstration arousing great interest.

Mr. DeVry was introduced to the members of the society and their guests by Mr. Homer Scott, president of the organization. After a brief outline of his former activities which included service with the foremost camera manufacturers in the world, extending over a period of thirty years, Mr. DeVry outlined the features of his invention.

"The DeVry automatic movie camera," he said, "has no tripod and does not have to be cranked. All you do is press the button, the camera does the rest. It is extremely light, weighing but 8½ pounds. It is a real camera for the professional as well as the amateur.

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C. J. Hubbell, western manager for International Newsreel Corporation, and Mrs. Hubbell; Ray Murray, West Coast manager for *Exhibitors Herald*; Harry E. Nichols, special representative for *Exhibitors Herald*; Irvin V. Willat, director of Famous Players-Lasky productions; Alvin V. Knetchel, special cinematographer for Pathe Review; Benjamin Medford, Hollywood representative for Goerz raw stock; J. Everett Hays and Mrs. Hays; Mrs. H. A. DeVry; A. G. Grant; Art Reeves; Dick Fryer; John P. McCarthy; George K. Hollester; Jack Graham, San Francisco; R. P. Stineman; J. Reid Giddings; Glenn R. Kershner; Ray V. Vaughn; C. E. Schoenbaum; L. Owens Higgins; Fleet Southcott, Jr.; and J. R. Johnson, Pathe News cinematographer.

Rack and Airbell Markings

(Continued from Page 9)

2. *By agitation of the rack.* The rack can be agitated in the following ways:

(a) By lifting the rack vertically out of the developer and reimmersing. This is the only method of agitation possible if the tank is fitted with rack guides. The rack is normally held down under the solution by a suitable fastener but on releasing this, the rack tends to float and usually protrudes about half way out of the tank. If the rack is again submerged this will produce sufficient agitation to replace the reaction products of development at the surface of the film with fresh developer, and mix the developer as a whole so as to be more nearly homogeneous.

The question arises as to how often agitation is necessary. The process of lifting and reimmersing the rack in a vertical direction causes a strong current of developer to strike against the lower slat which tends to produce more development at that point and accentuate the rack marks. Experience has shown that agitation of the rack by allowing it to rise out of the developer and immediately reimmersing once every minute produces an effective degree of agitation of the developer.

(b) By leaving the rack fully immersed and imparting to it a "square motion," that is, the rack is moved horizontally across the tank away from the operator then vertically downwards, then across the tank towards the operator and then vertically upwards. This manipulation may be termed the "square motion" and is only possible if the tank does not contain rack guides and if the depth of the



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liquid is somewhat greater than the height of the rack. Experience has shown that the rack must be agitated almost continuously in this manner in order to produce effective agitation, but this is not practical and in case the film is developed by time it is difficult to duplicate the degree of agitation.

3. *By moving the film along the rack during development.* This can be effected in two ways:

(a) By winding the film on a roller rack previously described² which consists essentially of a regulation rack with the end slats replaced by rollers. By attaching the film at each end to the rollers by means of rubber bands and turning the upper roller during development, the film is progressed along the rack spirally and any unevenness of development at the roller end is distributed over the film for a length of two or three feet and rack marks are, therefore, effectively prevented. When using such a rack it is desirable to agitate the developer by lifting the rack out and reimmersing once every two minutes. Owing to its relatively higher cost and the extra time required to load such a rack it has not been generally adopted, though as a means of preventing rack marks it is highly effective.

(b) By progressing the film along the rack manually. This is accomplished by attaching the film at each end by means of a long rubber band capable of being stretched two or three feet. The same procedure is then followed as when tightening the film after winding on the rack, although this is carried out while the rack is completely immersed under the developer. By advancing the film spirally in this way every two minutes fairly even development is obtained.

This procedure requires the undivided attention of the operator and is otherwise objectionable but is the only alternative manipulation to the roller rack method for completely eliminating rack marks.

4. *By making the end slats of the rack as broad as possible and with a curved surface.* This has the double effect of producing better stirring of the developer on agitation of the rack and of broadening out the rack marks. Experience has shown that a broad rack mark which grades off gradually at each side is less objectionable on projection than an extremely narrow one produced by a V-shaped end slat. It has been found that cylindrical end slats having a diameter of about

² "The Development of Motion Picture Film by the Reel and Tank Systems," by J. I. Crabtree, Trans. S. M. P. E. Vol. 16, p. 163.

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two inches as shown in Fig. 4 are the most satisfactory and practical.

The following experiment was also tried. Strips of wood two inches wide were attached by means of clips across each end of the regulation narrow slat rack to provide an efficient means of stirring and to protect the ends of the rack from an excessive flow of developer when the rack was agitated. Though moderately effective in diminishing the intensity of the rack marks, better results were obtained with the cylindrical slats.

5. *By developing as far as possible to completion.* As explained above, since rack marks are produced by virtue of one portion of the film receiving more development than another, it follows that the propensity for rack marks to be produced is greater when the film is developed to a low degree of contrast than when the limiting contrast is attained. In other words, with a fully exposed positive, printed from a contrasty negative, which must be developed in a weak developer for a short time, there will be a greater propensity for rack marks to be produced than in the case of a print from a flat negative which must be developed to the limit. The matter of the degree of development of any rack of film is, of course, determined by the requirements of photographic quality. Special care, however, must be taken when developing to a low degree of contrast.

Practical Instructions for Preventing Rack Marks

By employing racks with cylindrical slats of approximately two inches in diameter as shown in Fig. 4, allowing the rack to emerge from the developer and immediately reim-

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mersing once every minute during the course of development, both negative and positive rack marks are so effectually eliminated as to be practically invisible on the screen.

For precision work, when more absolute uniformity of development is desired, either the roller rack should be employed and the rack agitated once every minute, or the film should be progressed along the rack manually as explained above.

It should also be remembered that full development of the positive or negative tends to eliminate rack marks, and although the degree of development is determined by the requirements of photographic quality, it is desirable not to over develop the negative in order to eliminate the necessity of giving an extremely short development of the positive which is necessary with a contrasty negative.

Fixing Bath Rack Marks

Rack marks may be produced independently in the fixing bath if the rack is not agitated, especially during the first few minutes of fixation. Owing to the fact that the film is saturated with developer when immersed in the fixing bath, the film continues to be developed, especially in a fixing bath which is weakly acid, until all the alkali in the developer is neutralized by the acid in the fixing bath. If the rack is not agitated, the rate of neutralization of the developer takes place more slowly at the top and bottom of the rack because of vertical convection currents along the sides of the rack as outlined above under development, so that the film continues to develop locally, causing rack marks. To prevent this, the rack should be agitated several times on first immersing in the fixing bath so as to ensure complete neutralization of the alkali in the developer, thus arresting development.

Toning Rack Marks

When toning film on a rack in a single solution toner such as a uranium or iron toning bath, it is extremely difficult to obtain



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uniform toning especially if only a weak tone is desired. In the case of sulphide toning, when the bleaching and sulphiding processes are carried to completion no difficulty is encountered, but with the above toning solutions toning is progressive with time and for the same reason as outlined under development, there is less tendency for rack marks to form the nearer the degree of toning is carried to completion.

Any rack mark already present due to development will also be intensified in toning and unless guarded against new rack marks will be produced during toning.

It has been found that the procedure of raising the rack out of the solution every minute is not sufficient to prevent toning rack marks. In addition, it is necessary either to use a roller rack or progress the film along the rack manually. The following procedure is recommended:

(a) Use a roller rack or one with two-inch cylindrical slats as for development.

(b) Attach the ends of the film by means of rubber bands sufficiently long to give and take through a distance equal to about $\frac{3}{4}$ of the rack height.

(c) After immersion, stretch the band at one end and feed the film back spirally from the other end in steps of four to six inches every two minutes in a manner as outlined under development.

Even with the above procedure, slight toning for a short time is not possible. Toning should be carried out for at least one quarter of the time required for toning to the limit.

In view of the fact that both the uranium and iron toned images are partly soluble in alkali, if the water is at all alkaline uneven washing may cause local reduction of the toned image which results in unevenness. This may be prevented either by progressing the film along the rack during washing, or by washing by means of successive soaking in water weakly acidified with acetic acid.

Reel Bar Marks

When developing on a reel, bar marks or slat marks are invariably produced at or near the point where the film passes over the slat or bar. This is because the slats act as paddles to agitate the developer and the impact of the developer against the film is greatest at or near the slats, so that the developer is renewed most rapidly at these points resulting in an increased rate of development.

Curved markings as shown clearly in



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Fig. 5 are also produced as a result of curling of the film between the bars which causes the developer to flow more or less in specific channels.

Reel bar marks may be minimized by using a reel with as many slats as possible so that the cross section approximates to a circle, by avoiding rapid rotation of the reel, and by reversing the direction of rotation of the reel at intervals.

Airbells

When a strip of motion picture film is immersed in a developer or other solution there is always a tendency for more or less air to be carried along with the film under the solution where it immediately tends to assume a spherical shape resulting in a so-called airbell. See Fig. 6. The bubble of air usually clings to the film throughout the course of development unless for some reason it is dislodged, and it prevents access of the developer so that on subsequent fixation a clear spot or airbell marking remains. Sometimes the airbell persists throughout fixation or is formed again on immersion of the film in the fixing bath so that after washing a spot of unfixed out emulsion remains.

Clear airbell markings produced on negative film appear as dark spots on the positive, and in view of the present practice of developing negative film on racks and positive film on processing machines, which do not have so great a tendency to give airbells, most airbell markings seen on the screen at the present time are dark spots caused by airbells on the negative.

Shape and Configuration of Airbell Markings

At the moment of formation the airbell is usually hemispherical and has a relatively large area of contact with the film; but owing to the tendency of the airbell to assume a spherical shape the area of contact with the film tends to become very much smaller. As the area of the circle of contact diminishes due to this change in shape, the emulsion previously protected becomes partially developed, which results in a clear spot corresponding in size to the area of contact of the final airbell, surrounded by a dark ring of lighter density than the surrounding area.

(Continued next month)

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Photographing in Alaska

(Continued from Page 5)

thousands of acres in the Alaskan islands for the purpose of raising fur bearing animals. The islands are best suited for this because natural barriers prevent escape, at the same time enabling the animals to run free and in the main to feed themselves. Blue foxes are most prolific near Sitka. Each pelt brings approximately \$250.

Equipment

Following clear days of bright sunlight, it was the experience of the company in and near Sitka that a high fog would bank the skies in the late afternoon, but every scene was reported perfectly recorded by the use of super-speed film and very high speed lens equipment.

Rare Shots

On two nights the Northern Lights were witnessed and one of the sequences was photographed with that effect. Scenes were also photographed at one of the several active glaciers near Juneau. Considering what was expected, comparatively little snow was found at the end of summer and the filming of the picture will dispel the ideas of many people regarding Alaska being a land of perpetual ice and snow.

Virgin Field

Alaska, however, is undoubtedly the land of unlimited picture material with thousands of beautiful locations and no company within a short space of time could more than skim its possibilities from a standpoint of cinematography.

Ira Morgan, A. S. C., in New Contract

Ira H. Morgan, A. S. C., has just signed a contract which marks his sixth year as chief cinematographer for Marion Davies with whom he has been associated on her most important productions.

Film direction has begun on Miss Davies' spectacular new vehicle, "Beverly of Graustark," Cosmopolitan's production of the famous George Barr McCutcheon novel of the same name, and which is to be Morgan's first effort under the new contract.

Under the direction of Sydney Franklin, preliminary scenes are being filmed with large and colorful crowds representing court attendants, officers and soldiers on a huge



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replica of an old royal castle, constructed for the play at the Metro-Goldwyn-Mayer studios.

The new picture will present Miss Davies in a role that eclipses anything she has ever attempted in the way of character delineation, as, throughout a large part of the play, she must masquerade as "Prince Oscar" one of the characters in the supporting cast, all of which makes for the most interesting camera treatment on the part of the A. S. C. member.

With her hair cut short Miss Davies wears a military uniform, and abandons all hints of feminine makeup, actually adopting male make-up methods.

Cinematographer Becomes Actor

Maurice Kains, former second cinematographer, who wanted to be a screen star not for fame, but to locate his lost mother, has been given his big chance.

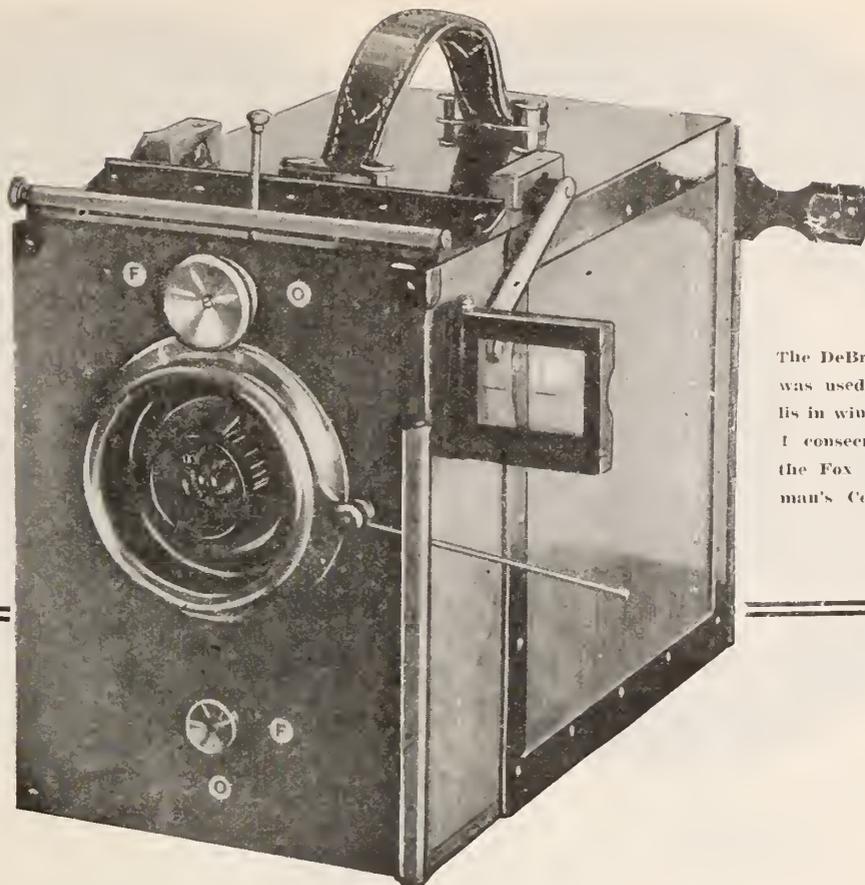
Kains will play one of the principal roles in "The Torrent," forthcoming Cosmopolitan production of the famous Vicente Blasco Ibanez novel, in which Greta Garbo, famous Swedish screen star, will make her American debut.

Kains applied at the Metro-Goldwyn-Mayer studios some

time ago, seeking to be an actor, and, failing to achieve this, obtained a position as assistant cameraman.

Henrik Sartov, Lillian Gish's cinematographer, was testing a lens one day, and used Kains as his subject. Louis B. Mayer saw the test film and was taken with the appearance of the young cinematographer so questioned him.

Kains said he wanted to be an actor, not for fame, but to find his mother. While he was in the navy she moved from her New York home, he said, and their letters had gone astray. He thinks if his face appears on the screen she may see him, and get in touch with him through the studio.



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Allow me to say that I think so much of the Mitchell, that I am taking a new outfit with me to Europe, to be used in photographing Miss May Murray, in the UFA Studios, in Berlin.

Wishing you much success, permit me to remain,

Sincerely yours,

Charles Rosher